



Assessing Consumers' Co-production and Future Participation On Value Co-creation and Business Benefit: an F-P-C-B Model Perspective

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Abstract

Co-production and active participation of the consumers are considered to have enhanced the value co-creation activities that would ensure business benefits of a firm. The marketing literature available does not explicitly explain the philosophy that would motivate the consumers to help to increase values for co-creation activities. In this context, attempts have been made to identify the factors that would impact on co-production and consumers' participation to co-create values. By studying literature and theories such as theory of co-creation, theory of value creation, information processing theory, marketing theory and expectancy value theory, a conceptual model called F-P-C-B (Future Participation (F) - Co-production (P) - Co-creation (C) - Business Benefit (B)) has been developed along with nine hypotheses. The data was from 362 respondents in India and the model was tested using PLS based analysis. The study shows that it is important for the firms to shift from product-oriented activities to customer-related strategies. It is also found that for obtaining more profitability and better business results, customers should be involved in business activities by way of involving in co-design, idea generation, and other relevant activities of the firms. Moreover, the study highlights that knowledge sharing between the customers and the firm authorities ensures better business values.

Keywords Business benefits · Co-creation · Co-production · Participation · F-P-C-B Model

1 Introduction

Customer involvement for product development and service improvement enables the firms to develop products or services with improved functionalities and features. It can help to

modify the designing of the product to optimise costs or develop and design products or services that meets the special requirements of the customers and solve the problems of the customers to a great extent (Alalwan et al. 2017; Cheung and To 2020; Dwivedi et al. 2020a, b; Lowe et al. 2019; Rathore et al. 2016; Windasari et al. 2021). Customers' involvement in the service and production activities of firms is not a new concept (Bendapudi et al. 1996). Inputs from the ends of the customers are deemed to have taken a decisive role in the process of designing products or services. Inputs include submission of designs or ideas to the firm in the matters connected with production or services. Participation of the consumers in these activities of the firm improves customers' satisfaction (Acharya et al. 2018). This two-way interaction is associated with a concept known as co-creation. Co-creation comes into picture when the company and customers create value jointly. Co-creation helps the customers to co-construct the service or product experience to meet up their expectations (Pralhad and Ramaswamy 2004a). This idea is also related to co-working of customers with the company (Jaspers and Steen 2019), which is also termed as 'co-production' (Dargahi et al. 2020).

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This approach of involvement of consumers in the business process is associated with the aim to tap economic values through involvement of more and more customers in this activity for value co-creation (Xiao et al. 2020). Thus, co-production as well as customers' active participation seem to have helped co-creation activities (Hoyer et al. 2010). This is to note that here co-production refers to the contributions of the customers to the product development process whereas co-creation refers to the customers' commitment towards the product promotion process. The intention of value co-creation activities would help to improve the business of a firm since the actual needs of the customers are manifested through their active inputs (Kar and Pani 2011; José-Carlos García-Rosell and Jenny 2019). Though the involvement of customers in the production and service activities in the firm process is not a new concept (Bendapudi et al. 1996), analysis on how intention of co-production and future participation could simultaneously impact the intention of value co-creation prompting business benefit remained underexplored in the marketing and information systems literature (Kohler et al. 2011; Kang 2017; Yu et al. 2020).

Hence, this study has attempted to identify the factors that influence the customers' co-production intention activities and to determine the antecedents that influence their intentions for active participation in the process by providing essential inputs to the firms for developing products or services through the process of co-creation. These two factors i.e. customers' co-production intention and their participation-willingness help to influence the value of co-creation as already stated, which in turn helps to improve the business of the firm. More categorically, this study attempts to address a vital literature gap by developing a parsimonious model. The proposed research model explains how customers' future participation and co-production might influence their intention of value co-creation for the effective business benefits of a firm. Consequently, this study aims to address the following research objectives: [1] To find out the impacts of customers' future participation on value co-creation, [2] To identify the impacts of co-production on value co-creation, [3] To examine the effects of value co-creation on business benefits of a firm, and [4] To determine the factors that would impact on future participation and co-production.

The remaining parts of this article is structured as follows: Section 2 reviews literature on value co-creation that improves the business health of a firm. Section 3 establishes theoretical underpinning of the proposed F-P-C-B research model and formulates hypotheses for the relationships between constructs. Further, Section 4 presents methodology of the research whereas Sections 5 and 6 provide analyses of the results along with theoretical and practical implications as well as limitations and future research scope. Finally, Section 7 concludes the study.

2 Literature Review

Different studies have highlighted that the concept of co-production comprises of (indirect or direct) "co-working with customers" (France et al. 2018; Jaspers and Steen 2019) or active involvement of the customers in the service or product design process (Schallehn et al. 2019). Co-production may be conceptualised through the interactions of the customers by the acts of mental and physical activities and mutual exchange (Chatterjee et al. 2018; Busser and Shulga 2019; Grover et al. 2020). Co-production may be executed by the help of the customers' cognition through intimate collaboration and dialog with a target for integrated mutual resources towards value co-creation (Ballantyne and Varey 2008; Kizgin et al. 2017, 2020; Shareef et al. 2018). It also helps for brand co-creation (Sarkar and Banerjee 2019; Shareef et al. 2020). Dialog concerning to the co-production activities indicates profound engagement, interactivity as well as willingness to involve and act on both sides (Prahalad and Ramaswamy 2004b). This is strengthened through the relationship bonding between the customs and the firms (Misirlis and Vlachopoulou 2018; Ruiz-Alba et al. 2019). Though locus of control in the process of co-production lies with the firms for defining the extent and nature of co-production, but the customers are found more involved at least psychologically in the process of co-production responsible for the value co-creation (Rashid et al. 2019, 2020).

Studies have highlighted that the concept of co-production is firm-centric whereas the concept of co-creation is interpreted to be customers and their experience centric (Gheduzzi et al. 2019; Saha et al. 2020). In the co-production activities, the process is mainly triggered by the help of the firms' own available resources and competences whereas in co-creation, the firms do not project the customers as mere product-purchasers, but on the contrary, the customers' roles are like partners of the firms in co-creating the products (Luonila and Jyrämä 2020; Schulz et al. 2020; Nam et al. 2020). Through the several prior studies, it transpires that equitableness has been considered as an important element of co-production in the shape of openness, mutualism along with non-command relations (Erhardt et al. 2019; Schulz et al. 2020). Equitableness being perceived to be one of the predictors of co-production, describes the extent to which the customers may feel an ownership sense in the contextual process (Grover and Kohli 2012; Grott et al. 2019).

Co-creation carries varied concepts in different perspectives. In the business environment, co-creation is interpreted as a concept where the customers may submit ideas, design etc. to the firms (Jayshankar et al. 2019). It can be conceptualised that involvement of customers plays a vital role (Tu et al. 2018; Lei et al. 2019) through the help of different modern technological activities concerning co-creation. Some researchers opine that taking part in the business

process should not be construed that it is co-creation, but they introduced a term ‘couple co-creation’ and it was defined as “a transparent process of value creation in ongoing, productive collaboration with, and supported by all relevant parties, with end users playing a central role” (Jansen and Pieters 2017, p. 15). Active participation of the customers in the business process with their valued inputs is considered as a secret of success in the value co-creation (Xiao et al. 2020). Experience gained by the customers regarding the process of business helps them to think of being involved in the business activities with the firms. This would improve the process of business that would enhance the value of co-creation (Pantano and Priporas 2016). Experience is considered to contain two vital parts, relative advantage, a term that fuels for improving customers experience being a cognitive part and personalisation for providing personalised services (Neuhofer et al. 2015). Active participation of the customers in the co-creation activities in a firm is accelerated by the help of societal approval. For the use of a new system, sanction of the society plays a decisive role (Zadeh et al. 2019).

Social collaboration ignites the sense of the customers for being involved in any activity related with the process of business for developing value by such co-creation activities (Agarwal et al. 2017; Rahman et al. 2019; Chatterjee and Kar 2018, 2020). Besides, value co-creation in the process of business by a firm is sometimes misconstrued because of the contribution of the producers’ endeavour. This idea has been rectified through the interpretation of value co-creation activities by Prahalad and Ramaswamy (2004a). The concept reveals that involvement of the customers in the value-chain process helps to fill in the needs of the customers that is transformed into customers’ empowerment behaviour (Ramaswamy 2009; Chepurina and Criado 2018). Again, this empowerment of customers is explained by expectancy value theory (Wigfield and Eceles 2000). It explains that such customers’ behaviour helps for value co-creation, which is ensured by their active participation in the process (Tomassini 2019).

Nevertheless, value co-creation issue remains as an elusive idea and concept (Saha et al. 2020). Different scholars opined differently regarding the modality and nature concerning the value co-creation. However, the matter has been explicitly made clear by Prahalad and Ramswamy (2004a) where it has been highlighted that the value co-creation process is effective when it is conceptualised in the perspective of the customer centric issues. Moreover, no explicit and clear literature is found where it has been envisaged how co-creation is directly helping the business benefits of a firm because only a handful of studies have interpreted value co-creation in the light of understanding of individual or situational factors ensuring guaranteed profitability of a firm (Bagheri et al. 2019). In this context, this literature review tries to encounter how co-production activities as well as involvement of customers in the business process can help to enhance the value towards co-

creation that eventually helps to strengthen the business health of a firm.

3 Conceptual Model and Hypotheses Development

3.1 Theoretical Background

Previously business success depended on the value of the products or services. This concept has been changed. The good-dominant logic has been transformed to service-dominant logic in the changed marketing scenario (Vargo and Lusch 2016). The Service Dominant Logic (SDL) has made the business customer-centric where customers have been perceived to be the creators or co-creators of values (Ranjan and Read 2016). Since the service dominant logic has been able to make the business more customer-centric, the value cocreation is found to have been impacted by the help of improvement of equitableness and customer’s relation with the firms. This concept is also supplemented by marketing theory (Ballantyne and Varcy 2008). Service dominant logic posits that a firm would be able to relish more profitability if the firms emphasize more on the feedbacks of the customers thereby improving the cocreation value (Vargo and Lusch 2016). If we focus our attention on the Information Processing Theory (Shlomo 1987) concerned with study of cognition, we realised that customers’ cognition is related with the product development issues which is associated with the concept of co-production as already stated. Hence, cognition, relation as well as equitableness may be considered to effectively prompt co-production.

This concept is also supported by the theory of value creation (Galvagno and Dalli 2014). This theory envisages that co-production is associated with designing intensive business services helpful for development of products (Lehrer et al. 2012). However, concept of co-creation (Prahalad and Ramaswamy 2000) is another issue that adds value to the business which is concerned with product-promotion activities. This has brought in a changed role in the marketing scenario (Prahalad and Ramaswamy 2003). The SDL (Vargo and Lusch 2016) posits that firms not only focus on product development but also on the review activities of the customers that co-create values towards product and service promotion (Grönroos and Voima 2013).

The SDL subscribes that, for improving values by co-creation activities, customers’ several attributes like empowerment, relation as well as experience count much (Grönroos 2008) which has been supplemented by the Theory of co-creation (Edvardsson et al. 2011). This theory posits that, personalisation and relative advantage are responsible to enhance customers’ experience that triggers co-creation values by ensuring the participation of the customers in these

activities (Jansen and Pieters 2017; Xiao et al. 2020). Again, if we focus our attention on SDL, we see that it helps substantially to co-create values towards product promotion through eWOM.

It is relevant to mention here that it has been observed by Ostrom et al. (2010, p. 5) that “we define service science as an emerging interdisciplinary field of inquiry that focuses on fundamental science, models, theories and applications to drive service innovation, competition and wellbeing through co-creation of value”. In terms of the above discussions, and in the light of theory of cocreation as well as of marketing theory, things have come out that intention for future participation of customers (F), intention for co-production (P) could simultaneously help to create value co-creation (C) that eventually leads to derive business benefits (B) to the firms. Therefore, the proposed research model is called as F-P-C-B model.

3.2 Hypotheses Formulation

3.2.1 Intention of Co-production

‘Co-working with the customers’ (Nuttavuthisit 2010) is an idea which is directly or indirectly related with concept of coproduction (Gheduzzi et al. 2019). Coproduction is such a concept that is characterised by the manifestation of customers’ various activities. These activities include mental and physical activities, mutual expertise access and mutual exchange (Ertimur and Venkatesh 2010). In a more explicit way, it may be conceptualised that coproduction is related with such specific activities which are carried out by social and economic actors within a defined network (Achrol and Kotler 2012). This is usually executed through diffusion of knowledge covering new idea of customers. Co-production is related with indication for exhibition of knowledge derived from the customers to co-create values. This has been supported by the willingness of the firm to share control with enhancement of relationship (Prahalad and Ramaswamy 2004b).

Co-production is considered as a process of enhancing cooperation between the customers and the firm with creation of satisfaction for either ends which can be interpreted as an exploitative play of a firm towards its profit maximisation (Chen et al. 2011). Practically in the process of coproduction, the main control lies with the firm authority that helps to define the extent and nature of co-production (Vargo and Lusch 2016). However, it hardly ignores the possibility of the customers to be psychologically involved in the process-chain of co-production (Rashid et al. 2020). There are a number of studies where it has been highlighted that equitableness in the shape of openness, mutualism and non-command relations act as an important constituent of co-production (Dargahi et al. 2020). Equitableness is associated with a conception through which the outside stakeholders can have the concept of ownership in the coproduction process. This

discussion transpires that there are at least three predictors of coproduction. They are customers cognition, equitableness, and relationship.

3.2.2 Customers’ Cognition

This concept increases customers’ involvement in the process of coproduction by the help of sharing customers’ creativity, knowledge and new ideas in the context of few needs of a firm (Zhang and Chen 2008). From the repository of knowledge, ideas as well as sense of creativity, the customers and the firm can build solid foundation of competence in the process of coproduction that helps to co-create value (Rahman et al. 2019). By such sharing of knowledge through the intimate cooperation between the customers and the firm, it is possible to achieve better results compared to that achieved through the independent functioning. Due to exchange of cognition between the customers and firms, the integrated perspective is emerged that helps for co-production for ameliorating cocreation values (Fisher and Smith 2011; Enz and Lambert 2012). From these inputs, the following hypothesis is proposed.

H1a: Customers’ Cognition (CC) has a significant impact on the Intention of Co-production (ICP) for value cocreation.

3.2.3 Equitableness

The essence of equitableness is associated with the willingness of the firm to impose control relating to desire of the customers for contributing in the role of co-production in the co-creation activities (Hoyer et al. 2010; Fisher and Smith 2011). Equitableness is ensured through the customer centralism (Prahalad and Ramaswamy 2002) of the firm and establishment of facilitative and conducive environment as well as firm’s willingness for sharing control with the customers for ensuring better coproduction activities (Heiko et al. 2010). It helps to achieve fruitful congruence of interest and to achieve the goal with value actualisation for ensuring soothing integration of resources to accelerate coproduction activities (Mele 2011; Karpen et al. 2012). This discussion leads to propose the following hypothesis.

H1b: Equitableness (EQ) has a significant influence on the intention of coproduction (ICP) for value cocreation.

3.2.4 Relationship

Relationship between the customers and the firm is construed to be a primary interface towards coproduction that ensures to

assess resource commitments, to provide an opportunity for sharing and realising the needs of a firm (Prahalad and Ramswamy 2004a). Various studies highlighted that relationship among the concerned stakeholders towards co-production is related with their synchronous and interactive involvement (Ordanini et al. 2011). By the help of involvement, sense of relationship is manifested (Kohler et al. 2011). Relationship may be considered as an effective source of value by itself since it possesses discursive nature triggering social best practices. With all these inputs, the following hypothesis is proposed.

H1c: Relationship has an effective and significant impact on the Intention of Co-production for value co-creation.

3.2.5 Intention of Future Participation

The success of a firm for developing value co-creation principally depends on the customers' active participation in co-creation activities (Xiao et al. 2020). Studies revealed that experience of the customers motivates them for future participation to yield value co-creation instrumental to ensure appreciable benefits of a firm (Xiao et al. 2020). Besides, for ameliorating value co-creation, the customers must have intended to actively participate in the business activities of a firm (Karpen et al. 2012). The involvement of customers through their active participation in future is expected to be enhanced by the help of the experience gained by the customers. This would help to enhance value co-creation (Pantano and Priporas 2016).

It would enable the firm to get the customers involved in planning and developing marketing activities relating to the products (Rishika et al. 2013). Besides, the customers' participation in the business activities would be enhanced with the sense of customers empowerment which ignites the desire of the customers in the co-creation activities (Hoyer et al. 2010). This discussion helps us to construe that the intention of the future participation principally depends on the customers' experience in the business activities for value co-creation, involvement of the society in the business scenario in the context of co-creation activities as well as customers' empowerment that might act as an engine of value co-creation.

3.2.6 Customers' Experience

Experience is related with a concept of memorable, empathetic, and emotional interaction that carries intrinsic values (Ballantyne and Varey 2008). Experience is considered as an artefact related with services and products offered by a firm. Linking of the above mentioned artefacts by the customers through cognitive and physical dimensions helps to create value co-creation which is accomplished by the

experience gained by the customers (Edvardsson et al. 2011). The revelation of experience can be perceived by the customers' cognitive processes that would be the results of customers' behavioural actions, participation, spontaneity, and integrative role (Heinonen and Strandvik 2015). Value is generated through experience since it can provide a sense of transformation. With the advent of Information and Communication Technology (ICT), the experience of customers in this context has been embedded with technological support (Pantano and Timmermans 2014). This experience of customers sometimes is known as smart experience in this perspective (Homburg et al. 2017).

Different research studies highlight various ingredients of customers experience under different dimensions. They include relative advantage (Wuenderlich et al. 2015) and personalisation (Neuhofer et al. 2015). These two dimensions are instrumental to affect customers' experience. They are associated with the cognitive as well as behavioural attributes of the customers. This construct (CE) is construed to be a vital construct having reflection from these two first-order determinants (Van Noort et al. 2012). Relative advantage is considered as a cognitive part of customers' experience that highlights a difference between the experience gained through ICT usage and the existing normal technology (Wei et al. 2015). This advantage is concerned with the convenience experienced by the customers using a new technology in the value co-creation activities (Gao and Bai 2014; Saha et al. 2020). Personalisation in the context of customers' experience is considered as a feeling gained from personalised services or customised services offered by the firm (Neuhofer et al. 2015). Practically personalisation is concerned with the uniqueness of the perceived process of use, its value being configured through individual characteristics (Karpen et al. 2012). Personalised experience is realised in the shape of immersion of the customers. It helps to create a supportive and conducive atmosphere responsible for the uniqueness of the use-process of the customers (Macdonald et al. 2011). With this discussion, the following hypothesis is proposed with consideration of relative advantage and personalisation as two vital dimensions of customers' experience (CE).

H2a: Customers' experience has a significant impact on the intention of future participation of the customers for value co-creation.

3.2.7 Social Collaboration

We have already discussed about the theoretical background for theorising how societal issues contribute for value co-creation through customers involvement in the co-creation activities (Zadeh et al. 2019; Nambisan and Baron 2007) studied the antecedents regarding the intention of the customers to

participate in the co-creation activities and analysed the behaviour of customers. It was ascertained that better participation of customers could be ensured through an integrative perspective (Rashid et al. 2020). This analysis leads to construe that integrated societal approach could be helpful for ensuring better customer participation because studies subscribe that society plays a vital role in the context of motivating the people to be involved in a particular function (Parboteeah et al. 2009). All these discussions lead to propose the following hypothesis.

H2b: Social collaboration has a significant impact on intention of the future participation of the customers for value co-creation.

3.2.8 Customers' Empowerment

Customers are engaged in co-creation activities through participation to fulfil their needs and this tendency of being engaged is translated into empowerment behaviour of customers (Neghina et al. 2017; Chepurna and Criado 2018). The customers' empowerment can be viewed through the lens of expectancy value theory which interprets the customers' activities through their belief (Wigfield and Eccles 2000). The customers' empowerment assists the customers for value co-creation which is achieved through active participation since this co-creation is considered as a result of joint collaborative activities (Grönroos 2012; Busser and Shulga 2019). The value generated through co-creation activities helps the customers with a sense of empowerment that motivates the customers to actively participate in the business process (Hoyer et al. 2010). Customers' empowerment helps to generate the value for deriving benefits for themselves by the active participation in the business activities to co-create the values (Tomassini 2019). Based on the above discussions, the following hypothesis could be formulated:

H2c: Customers empowerment has a significant impact on intention of future participation by the customers for value co-creation.

3.2.9 Intention of Value Co-creation

Self-service, interaction, and engagement are considered and accepted as the vital ingredients of joint creation of value (Oertzen et al. 2018). In the context of value co-creation, the customers are found to have assumed active role and create value with the firm by the help of collaboration with different stages of production (Hoyer et al. 2010). This coproduction activities, emerging from the process of coworking with the customers in the process of product or service process,

effectively help for value co-creation (Achrol and Kotler 2012; Zhang et al. 2018). It has been observed from different studies that proximal efforts for engaging customers in co-creation activities include works of service delivery and recovery (Heidenreich et al. 2014), as well as creation of active online-integrative community and other co-productive interventions (Kamboj et al. 2018). Value configuration is achieved and executed by integrating the resources mutually through the dialog and collaboration (Ballantyne and Varey 2008). Dialog comes under the co-production activity that motivates the customers to express their willingness to work together for value co-creation (Pralhad and Ramaswamy 2004b). The above discussion helps to propose the following hypothesis:

H3: Intention of co-production involving customers significantly impacts the intention of value co-creation.

Moreover, in the traditional value-chain concept in the context of complex industrial development scenario in the environment of marketing dynamics, the role of customers is not considered (Porter 1985; Dey et al. 2016). However, the concept of value generation has been changed in the marketing perspective (Pralhad and Ramaswamy 2004a). Involvement through active participation of all the stakeholders on the consumption and production process has brought in the idea of co-creation. This co-creation is not now considered as a concerted endeavour of the producers alone (Vargo and Lusch 2016; Tu et al. 2018).

Now, customers need not be solely targeted of all marketing activities but their participation in these activities as active operant resources helps to co-create values (Saarijarvi et al. 2013; France et al. 2018). Value co-creation is needed to be characterised with the help of the roles of customers and firms whereas recognition of such value creation would come from the firm and the customers (Grönroos and Voima 2013). Thus, this dyadic inter relationship between the customers and the firms emerges from the participation of the customers with firm activities and this is construed as a secret of success of value co-creation (Lim et al. 2018). The process of collaboration by the participation of all the stakeholders, especially, the customers towards improved innovation, development and design of products and services possesses the essence of the value of co-creation (Grönroos and Voima 2013; Rahman et al. 2019). All these discussions lead to propose the following hypothesis.

H4: Intention of future participation of the customers significantly impacts the intention of value co-creation.

3.2.10 Business Benefits

It has been argued in various studies that by involving customers in connection with innovation and product

development process, marketers will be able to increase their business benefits due to enhancement of product value (Saarijarvi et al. 2013; Jayashankar et al. 2019). It has been observed that the different emerging countries have emphasised the need of involvement of the customers in the business process for enhancement of value co-creation (Prahalad and Ramaswamy 2004b). This value co-creation is considered helpful for ensuring profitability of the concerned firm (D’Andrea et al. 2019). With the help of digital media and fuelled with the impact of co-production and customers’ participation activities in the business processes of a firm, business society is advancing towards customer oriented co-creation era (Saha et al. 2020). This eventually will pave the way of thinking about the value (Prahalad and Ramaswamy 2000). This value generation through co-creation brings in profitability of a firm that helps to achieve business benefit (Kostakis 2019).

Value cocreation crops up in the form of unique experience relating to the customers. It arises for enhancement of ongoing revenue and for improvement of the benefits of the business of the firm through enhancement of involvement and relationship between customers and the firms (Giang and Dredge 2019). Value is co-created concerning to customers when customers can utilise the experience through the idea of the product-service proposition of the firm (Ranjan and Read 2016; Kang 2017; Yu et al. 2020). As already mentioned, that no explicit evidence is available in the existing literature which transpires how the value co-creation can ensure business benefits to a firm. This is because most of the existing literature highlights that value co-creation is primarily induced by the suppliers (Bernadette et al. 2019). However, indirect evidence of contribution of co-creation activities in this

context is available in terms of discussions above from the customers’ end. In terms of the above discussions, the following hypothesis is developed.

H5: Intention of value co-creation by the customers significantly impacts the business benefits of the firms.

Earlier studies suggest that certain behavioural, demographic as well as psychographic nature and characteristics of customers might influence some of the key constructs while investigating extended model of acceptance of any innovative system (Porter and Donthu 2006). Thus, for better delineation of the connections proposed in this model, the authors propose to include some of the demographic variables like Age, Gender and Education for providing an effective and rigorous examination and analysis of the theoretical linkages. With all the hypotheses, we propose the following conceptual model in Fig. 1.

Here, intention of Future participation (F) and intention of co-Production (P) are the predictors of co-Creation (C) that influences on Business Benefit (B) of a firm. We propose the framework as F-P-C-B framework.

4 Research Methodology

Partial Least Square-Path Modelling (PLS-PM) was adopted (Sarstedt et al. 2017) with the help of Smart PLS 3.2.3 software to analyse the data gathered for this research. Since this approach is flexible with capability of managing complex models, PLS-PM was used (Lowry and Gaskin 2014) for the purpose of this research.

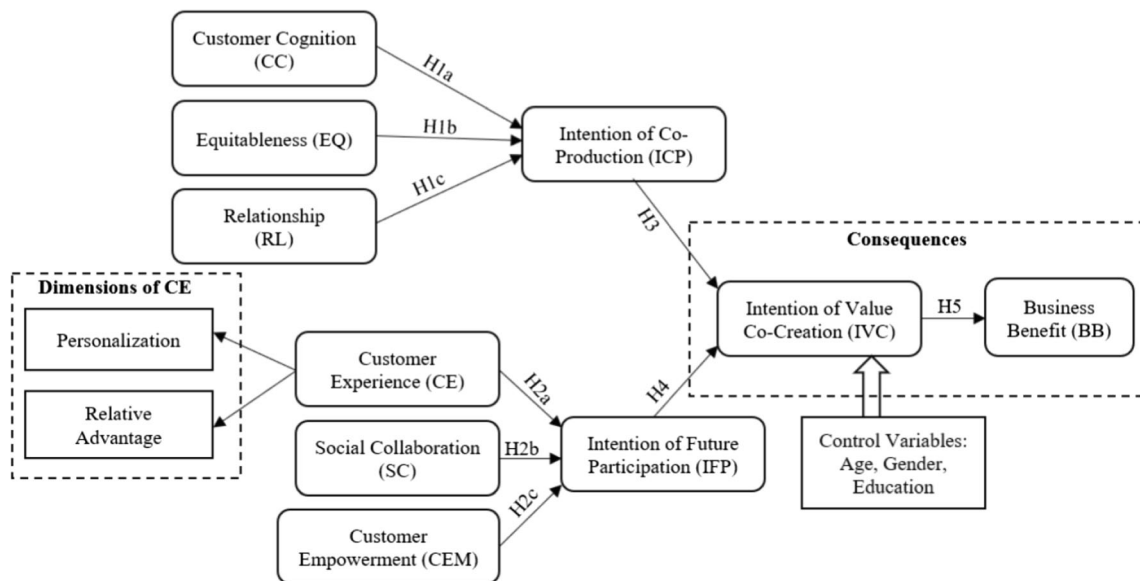


Fig. 1 Proposed conceptual model. (Adapted from theory of co-creation (Edvardsson et al. 2011); theory of value creation (Galvagno and Dalli 2014); information processing theory (Shlomo 1987); marketing theory (Ballantyne and Varey 2008); expectancy value theory (Wigfield and Eccles 2000))

Table 1 Measurement instrument

Construct	Sources	Measurement items
Customer Cognition (CC)	Zhang and Chen 2008; Fisher and Smith 2011; Grover and Kohli 2012; Enz and Lambert 2012; Rahman et al. 2019	CC1: I feel I would get better knowledge of the product or services if I am involved in co-creation activities CC2: My skill and knowledge will improve because of my engagement CC3: I will be able to test the product or services before it comes to the market. CC4: Engaging in co-creation activities will provide me better satisfaction as a customer of that product or services.
Equitableness (EQ)	Prahalad and Ramaswamy 2002; Hoyer et al. 2010; Heiko et al. 2010; Mele 2011; Fisher and Smith 2011; Karpen et al. 2012	EQ1: I believe customers and firms should get equal opportunity for developing a product or services EQ2: I believe that customers should be incentivised for working with the firms to co-create products or services. EQ3: I think that the customer should be empowered by the firms to provide inputs for co-creation of products or services.
Relationship (RL)	Prahalad and Ramswamy 2004a; Ordanini et al. 2011; Ordanini et al. 2011; Kohler et al. 2011	RL1: I believe that co-creation helps in development of the product or service in a better way. RL2: Direct ways of communications between firms and customers would help to develop better relationship. RL3: I become more loyal to the firm because of my engagement in co-creation activities RL4: I believe that firms should try to gain the trust of the customers to enhance the relationship so that the customers are encouraged to provide inputs for co-creation.
Customer Experience (CE)	[Personalisation] Edvardsson et al. 2011; Macdonald et al. 2011; Van Noort et al. 2012; Karpen et al. 2012; [Relative Advantage] Wei et al. 2015; Wuenderlich et al. 2015; Neuhofer et al. 2015; Neuhofer et al. 2015	P1: I think co-creation is a good opportunity for me to be engaged with the firm. P2: With co-creation, I can customise the product or services as per my requirements. P3: Co-creation helps products or services more customer centric. R1: Co-creation provides firms competitive advantages. R2: According to me firms which are engaged in co-creation are more creative. R3: I believe that firms involved in co-creation with customer are more flexible.
Social Collaboration (SC)	Nambisan and Baron 2007; Parboteeah et al. 2009; Zadeh et al. 2019; Rashid et al. 2020	SC1: I use social media for providing feedbacks to the firms which in turn helps co-creation activities. SC2: I use social media for customisation of any product or services needed by me. SC3: Information exchange is easier for co-creation using social media platforms.
Customer Empowerment (CEM)	Wigfield and Eccles 2000; Hoyer et al. 2010; Grönroos 2012; Neghina et al. 2017; Busser and Shulga 2019; Tomassini 2019	CEM1: I think co-creation helps empowerment of customers. CEM2: Customers have multiple choices because of co-creation activities. CEM3: I believe co-creation has provided customers more involvement with firms in decision making process.

Table 1 (continued)

Construct	Sources	Measurement items
Intention of Co-Production (ICP)	Nuttavuthisit 2010; Ertimur and Venkatesh 2010; Chen et al. 2011; Achrol and Kotler 2012; Vargo and Lusch 2016; Gheduzzi et al. 2019; Rashid et al. 2020	CEM4: According to me customers are now more respected because of co-creation of a product or services with firms. ICP1: Co-production helps acceptability of the products to the different set of customers. ICP2: I believe, profit sharing by the firms with the customers could encourage the customers to participate in product development activities. ICP3: As a customer, involvement in co-production activities provides me more empowerment.
Intention of Future Participation (IFP)	Hoyer et al. 2010; Karpen et al. 2012; Rishika et al. 2013; Pantano and Priporas 2016; Xiao et al. 2020	IFP1: I think customer participation is important while creating a product or services by a firm. IFP2: Participation in co-creation activities provides customers options to customise the product or services. IFP3: I feel my opinions are important by the firm while creating a product or services.
Intention of Value Co-creation (IVC)	Ballantyne and Varey 2008; Hoyer et al. 2010; Achrol and Kolter 2012; Heidenreich et al. 2014; Oertzen et al. 2018; Kamboj et al. 2018; Zhang et al. 2018;	IVC1: I believe co-creation would help in product or service -promotion activities. IVC2: I believe, spreading information through eWOM helps in co-creation activities. IVC3: I think by co-creating, I would be able to make a good impression on others IVC4: As a customer I think, if I am engaged in co-creation activities, I would be able to make the product or service more acceptable to other customers.
Business Benefit (BB)	Edvardsson et al. 2011; Strandvik et al. 2012; Saarijarvi et al. 2013; Jayashankar et al. 2019; Kostakis 2019; Saha et al. 2020	BB1: Firms which are involved in customer co-creation activities get more business benefit. BB2: As a result of co-creation, firms get competitive advantages which helps the firm earning more profit. BB3: I believe customer participation in co-creation helps increasing business profits. BB4: I think co-production helps firm to become more innovative.

4.1 Research Instrument

For ensuring content validity, the items utilised for measuring the constructs were adapted with the help of extent literature. They were eventually adjusted and modified to fit the context of the present study. Customers' Cognition have been measured using four items lending knowledge mainly from Lambert and Lambert (2012) and Grover and Kohli (2012). Measurement items for interpreting Equitableness (EQ) have been framed using the inputs from Fisher and Smith (2011) and Mele (2011). Relationship (RL) has been measured by the help of four measurement items deriving knowledge from previous studies (Ordanini et al. 2011; Kohler et al. 2011). The measurement items containing two dimensions of Customers' Experience (CE) have been measured from the inputs mainly from Neuhofer et al. (2015); Wuenderlich et al. (2015). The three and four measurement items relating

to Social Collaboration (SC) and Customer Empowerment (CEM) have been framed using inputs mainly from Nambisan and Baron (2007) and Zhang et al. (2018). The measurement items relating to Intention to Co-production (ICP) and Intention to Future Participation (IFP) have been prepared with the help of inputs from McColl-Kennedy et al. (2012) and Zhang and Chen (2008) respectively. The inputs from Strandvik et al. (2012) helped us to prepare the corresponding items relating to the constructs intention of value co-creation (IVC) and Business Benefit (BB) respectively.

After this, for ascertaining the defects of readabilities and phase validity, we invited a panel of six experts in the field of our study to examine the instruments. With their feedback, some corrections were made in the recital of the instruments to enhance their comprehensiveness and readability. Finally, to validate the survey instruments, we conducted a pre-test and got the instruments finally rectified. The entire procedure

was followed by step by step approach (Carpenter 2018). The entire items were quantified through 5-point Likert scale ranging from Strongly Disagree (1) to Strongly Agree (5). In this way, 38 items had been prepared. The details of the measurement instruments are shown in Table 1.

4.2 Data Collection Strategy

As a part of data collection strategy, online questionnaire survey method was considered as the appropriate method. The online questionnaire survey method was used because some of the obvious reasons. First, the survey questionnaire with 38 measurement items was sent to the customers, employees of the firms and researchers involved in the research of value co-creation process. The questionnaire was prepared in a way that the respondents aware of this process can provide their responses. Secondly, there are other strengths of this survey methodology such as lower cost, better reachability to the respondents, convenient to the respondents and less time consuming. This process also helps computerized auto data entry in the backend system with minimum human involvement. This minimizes the probability of human error as well. The questionnaire link was also sent via some popular social media sites such as Facebook, Instagram, LinkedIn and so on for better reachability. The questionnaire hyperlink was also sent to many of our personal contacts using their personal emails. We reminded to the 876 prospective respondents in a regular interval to maximize the responses. Using purposive sampling, we managed to get 442 responses in a window of six months (August 2019 to January 2020). The response rate being 50.5%. For analyzing nonresponse bias, method recommended by Armstrong and Overton (1977) has been followed. Independent sample t-test as well as chi-square test have been conducted considering first and last 100 responses. We did not find any appreciable difference between the two groups ($p < 0.05$). It shows that there is no non-response bias. However, 362 responses were used for analysis as 80 responses were found either incomplete or invalid and were not considered. The usable responses were about 10 times the number of items, which is considered acceptable (Deb and David 2014). The demographic profile for respondents is shown in Table 2.

The participants were 62.4% male and 47.6% were female. Most of the usable respondents were in the range of 20–35 years (43%) and 39.2% were postgraduate.

5 Results

5.1 Validity and Reliability

For testing convergent validity, loading factor of each item, composite reliability (CR), average variance extracted (AVE)

of each construct were estimated (Chin 2010). All these estimated values are within acceptable range (Hair et al. 2011). Cronbach's alpha and variance inflation factor (VIF) of each construct were also computed. They all are within their acceptable range (Hair et al. 2011; Kock and Lynn 2012). Hence, the constructs are consistent and do not suffer from the defect of multicollinearity. The entire measurement properties are shown in Table 3.

5.2 Discriminant Validity

To test discriminant validity, square roots of AVEs (also known as Average Variance (AV)) have been computed. It appears from the results that correlation coefficient between respective couple of constructs appears to be less than square root of corresponding AVE (Fornell and Larcker 1981). The results are shown in Table 4. This confirms discriminant validity.

5.3 Hypotheses Testing

For testing the hypotheses bootstrapping using Smart PLS was employed. It can test the hypotheses without parametric tests (Chin 2010). Bootstrapping process is recommended to be used in PLS-PM approach (Hair et al. 2011). In this approach, we have considered 5,000 resamples with 362 cases (Henseler et al. 2009). With the help of this approach, we have computed the path weights as well as coefficients of determinants (R^2 values). The entire results are shown in Table 5.

5.4 Moderation Analysis

In this study, we have considered three control variables age, gender and education. They have been considered as control variables since it has been experienced that certain psychographic and demographic nature of individuals (here customers) might impact some of the key constructs (Porter and

Table 2 Demographic profile (N = 362)

Feature	Category	N
Gender	Male	226
	Female	136
Age	<20 Years	48
	20–35 Years	156
	36–50 Years	86
	>50 Years	72
Education	Higher Secondary	47
	Undergraduate	102
	Postgraduate	142
	Postgraduate Research	71

Table 3 Measurement properties

Construct/Items	Loading Factor	t-value	Cronbach's alpha	Composite Reliability	Average Variance Extracted	Variance Inflation Factor
Customer Cognition (CC)			0.92	0.84	0.81	3.4
CC1	0.87	21.46				
CC2	0.89	26.28				
CC3	0.90	29.41				
CC4	0.95	23.56				
Equitableness (EQ)			0.93	0.92	0.90	4.6
EQ1	0.93	22.11				
EQ2	0.95	25.46				
EQ3	0.96	20.37				
Relationship (RL)			0.93	0.95	0.92	4.2
RL1	0.98	21.12				
RL2	0.97	19.14				
RL3	0.99	23.46				
RL4	0.89	24.89				
Personalisation (P)			0.95	0.89	0.86	3.8
P1	0.90	10.46				
P2	0.88	13.12				
P3	0.90	17.48				
Relative Advantage (R)			0.97	0.91	0.88	3.7
R1	0.92	16.87				
R2	0.95	17.12				
R3	0.95	17.11				
Social Collaboration (SC)			0.92	0.91	0.89	4.5
SC1	0.98	22.21				
SC2	0.96	24.74				
SC3	0.89	26.13				
Customer Empowerment (CEM)			0.91	0.91	0.88	3.9
CEM1	0.91	32.11				
CEM2	0.94	34.71				
CEM3	0.95	21.74				
CEM4	0.95	24.13				
Intention of Co-Production (ICP)			0.97	0.95	0.94	4.0
ICP1	0.96	17.14				
ICP2	0.98	19.21				
ICP3	0.97	21.14				
Intention of Future participation (IFP)			0.96	0.94	0.90	4.8
IFP1	0.98	19.41				
IFP2	0.92	21.46				
IFP3	0.95	24.76				
Intention of Value Co-creation (IVC)			0.92	0.91	0.88	3.7
IVC1	0.92	24.66				
IVC2	0.96	26.36				
IVC3	0.95	27.34				
IVC4	0.91	28.31				
Business Benefit (BB)			0.97	0.89	0.87	4.2
BB1	0.96	24.12				

Table 3 (continued)

Construct/Items	Loading Factor	t-value	Cronbach's alpha	Composite Reliability	Average Variance Extracted	Variance Inflation Factor
BB2	0.95	27.91				
BB3	0.88	18.21				
BB4	0.90	20.60				

Donthu 2006) and for better delineation of linkages, such three control variable have been considered. They are moderating the key construct, intention of value co-creation (IVC). The mediating role of IVC between these three moderators age, gender, education as well as business benefit (BB) has been analysed with the help of examination of indirect effects as well as bias correlated confidence interval with bootstraps (Nitzl et al. 2016). Results have been shown in Table 6.

The results highlight that the IVC acts as a vital mediator between these control variables and business benefits, being the goal of this study. The result reveals that the direct effects of Age, Gender and Education (three control variables of value cocreation) in BB are significant mediating variables through IVC. Here IVC acts as an effective complementary mediator. As from the results it is seen that the confidence interval with regard to bias-correlated bootstraps of IVC as a mediator is different from zero for Age (0.05 to 0.21), Gender (0.07 to 0.27) and Education (0.03 to 0.17), it may be inferred that IVC acts as a significant mediator between the control variables and business benefits. Through this result, H5 is also supported.

Besides, Table 7 highlights the contributions of six exogenous variables on the two endogenous variables (ICP and IFP). The results show that for intention of co-production (ICP), customers' cognition (CC) act as the most important exogenous variable (47.17%) and for intention of future participation (IFP), customers' experience (CE) acts as a most important exogenous variable (47.11%).

After such statistical analysis (PLS-PM), we have been able to find out the path weightage, R² and level of significance (p-value). The result is shown in Fig. 2.

5.5 Findings of Data Analysis

From the studies of literature and from the knowledge of different existing theories, we have developed the hypotheses (H1a, H1b, H1c, H2a, H2b, H2c, H3, H4 and H5) and also framed a conceptual model shown in Fig. 1. From the statistical analysis, it appears that out of the 9 hypotheses, 2 hypotheses (H1b) and (H2c) which link equitableness and intention of co-production as well as customer empowerment and intention of future participation have not been supported since

Table 4 Discriminant validity test

	Age	Gen	Edu	CC	EQ	RL	CE	SC	CEM	ICP	IFP	IVC	BB	AVE
Age	1.00													1.00
Gen	0.05	1.00												1.00
Edu	0.45	0.04	1.00											1.00
CC	0.19	0.06	0.06	0.90										0.81
EQ	0.06	0.11*	0.04	0.28	0.95									0.90
RL	0.04	0.07	0.01	0.33*	0.48	0.96								0.92
CE	0.09	0.01**	0.04*	0.41	0.21*	0.28	0.93							0.86
SC	0.11*	-0.09	-0.02	-0.32	-0.12	0.42	0.11	0.94						0.89
CEM	0.17	0.08	0.03	-0.06*	-0.06	0.06	0.06	0.11	0.94					0.88
ICP	0.08	0.10	0.11*	0.11	0.31**	0.46	0.41*	0.12	0.11	0.97				0.94
IFP	0.06	0.12	0.04	0.32**	0.22	0.21*	0.32**	0.23	0.01*	0.12	0.95			0.90
IVC	0.11	0.04*	0.02	0.30	0.04	0.04	0.13*	-0.14	-0.41	-0.11	0.13	0.94		0.88
BB	0.01	0.03	0.03*	-0.04	0.11	-0.11	0.17	0.32**	0.07	0.17*	-0.12	0.27	0.93	0.87
SD	-	-	-	1.14	1.71	0.83	1.41	1.21	1.07	1.02	1.11	1.17	1.04	--
MN	-	-	-	3.15	5.67	4.12	4.17	3.12	3.51	2.71	3.79	4.11	5.02	--

Table 5 Results of hypotheses testing with R²

Path	Hypothesis	Path Coefficient/R ²	p- value	Remark
Effects on ICP		0.51		
by CC	H1a	0.46	*	Supported
by EQ	H1b	0.09	NS	Not Supported
by RL	H1c	0.42	*	Supported
Effects on IFP		0.47		
by CE	H2a	0.53	***	Supported
by SC	H2b	0.47	**	Supported
by CEM	H2c	0.08	NS	Not Supported
Effects on IVC		0.62		
by ICP	H3	0.58	*	Supported
by IFP	H4	0.52	**	Supported
Effects on BB		0.76		
by IVC	H5	0.61	***	Supported

[Note: *: p < 0.05; **: p < 0.01; ***: p < 0.001; NS: Non-Significant]

the concerned path weightages are too low (0.09 and 0.08) each having level of non-significance NS (p > 0.05). As far as issue of empowerment is concerned, corresponding linkage was not supported through statistical validation process presumably because the willingness of customers in active participation in business process was not developed due to unawareness regarding the advantages of co-creation activities.

Moreover, the customer equitableness for co-production was not supported (H2c) presumably due to paucity of concept of customers. They do not feel that responsibilities between customers and the firms can derive enhanced value for co-creation activities. The hypotheses H1b and H2c were not supported by statistical verification. This verification was done with feedbacks from 362 respondents from different parts of India. We can say that consideration of feedbacks of other respondents representing other areas of India might have provided such feedbacks that could support these hypotheses. However, these will be discussed in limitation section subsequently.

The other hypotheses, such as H1a, H1c, H2a, H2b, H3, H4 and H5 are duly supported. Regarding impacts of three exogenous variables impacting ICP, the impact of CC on ICP is the highest since the concerned path co-efficient is the maximum (0.46) with level of significance p < 0.01. Again, out of three exogenous variables, impact of CE on IFP is the highest

because the concerned path coefficient (0.53) is the greatest with the level of significance as p < 0.001 (***). As far as impacts of ICP and IFP on IVC are concerned, the impact of ICP on IVC is the maximum (0.58).

Again, in terms of coefficients of determinants, CC, EQ and RL can explain ICP to the extent of 51% (R² = 0.51). IFP can be explained by CE, SC and CEM to the tune of 47% (R² = 0.47). Besides, ICP and IFP can explain IVC to the tune of 62% (R² = 0.62). It also appears that BB can be explained by IVC to the tune of 76% (R² = 0.76). The explanatory power of the model is 76%.

6 Discussion

This study has effectively analysed how ICP as well as IFP can almost identically (path coefficients are close to each other) influence IVC (H3 and H4) to trigger BB (H5). This study has also explained how CC, EQ, and RI can influence ICP and how CE, SC, CEM can influence IFP. This study has also shown how activities of the business firms can effectively prompt the business health of the firm. Through the statistical

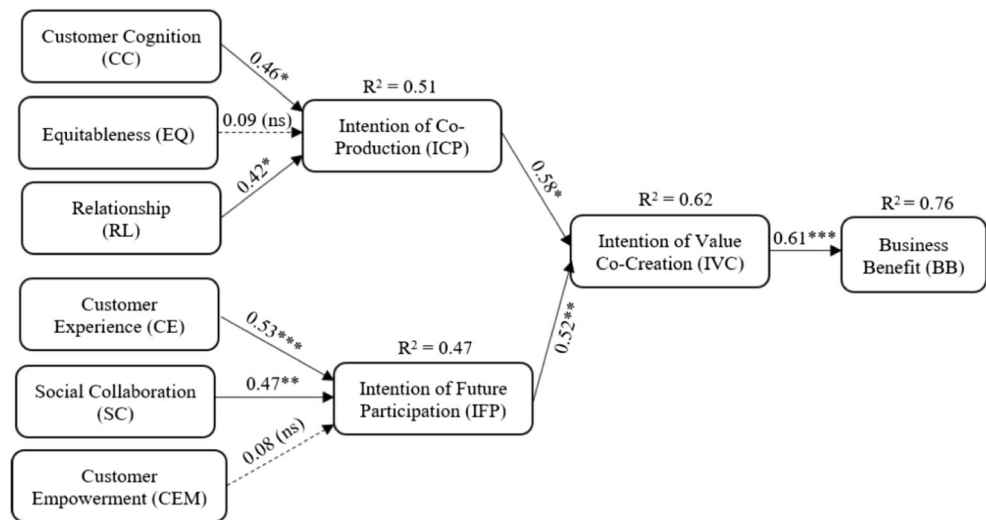
Table 6 Moderation analysis

Mediation Hypothesis	Indirect Effect	p-value	LCL	UCL
Age → IVC → BB	0.12	0.02	0.05	0.21
Gender → IVC → BB	0.13	0.00	0.07	0.27
Education → IVC → BB	0.15	0.01	0.03	0.17

Table 7 Explanation of ICP and IFP

Construct	Path	Path Coefficient	Correlation	R ² (%)
CC	CC→ICP	0.46**	0.32**	47.17
EQ	EQ→ICP	0.09 (ns)	0.22*	21.20
RL	RL→ICP	0.42*	0.21*	20.90
CE	CE→IFP	0.53***	0.32**	47.11
SC	SC→IFP	0.47**	0.23*	23.40
CEM	CEM→IFP	0.08 (ns)	0.01*	4.31

Fig. 2 Validated research model



analysis, it has been observed that out of these exogeneous factors, customer cognition has the highest impact on the co-production activities of the firms. This complements earlier studies (Grover and Kohli 2012) where it has been mentioned that better evaluation of the firm’s needs can be derived from the customer cognition and it would be beneficial for co-production.

In addition, our study highlights that relationship also positively impacts on the co-production activities. It has been supported by the earlier studies (Prahalad and Ramaswamy 2004a) where the study subscribes that relationship can be considered as a primary interface that impacts co-production helping to assess resource commitment. Another hypothesis that equitableness impacts significantly on co-production activities has not been supported. This contradicts earlier studies (Karpen et al. 2012). This is presumably because still there exists some reservation from the firm’s side to share full control in favour of the customers for contributing their role in co-production activities which is construed to be the essence of equitableness.

This study has highlighted that CE, SC, CEM influence IFP, which in turn impacts IVC. Out of these three exogeneous factors, CE is interpreted by its two salient dimensions like personalisation and relative advantage. Moreover, among these three independent variables, the effects of CE on IFP are the strongest in terms of the value of concerned path coefficient whereas the effects of CEM on IFP is the lowest and this impact has become non-significant. The significant impact of CE on IFP has received support from earlier studies (Neuhofer et al. 2015; Wuenderlich et al. 2015) where it has been envisaged that the two vital dimensions of experience (personalisation and relative advantage) impact on the intention of future participation.

However, the impact of customer empowerment on intention of future participation has not been supported as is seen from statistical validation process. This is opposed to that what has been obtained in earlier studies (Zhang et al. 2018).

One plausible explanation is that the customer empowerment attribute could hardly create a conducive and supportive environment for motivating the customers to participate in these two-way activities.

Besides, authors believed that there might be another reason for not supporting these two hypotheses linking equitableness with co-production and empowerment with participation. The results of not supporting have been arrived at through the analysis of feed backs of some respondents while conducting PLS-PM analysis. In choosing the respondents, we did not touch all the corners of India wherefrom the respondents were selected. Consideration of more respondents from other areas in addition might have projected another result. This has been discussed in limitation section subsequently.

Again, it has been hypothesised that intention of co-production and intention of future participation impact on intention of value co-creation separately. These two hypotheses have received support from the validation result. This is also supported by earlier different studies (McColl-Kennedy et al. 2012; Zhang et al. 2018). This finding is meaningful remarkably since it has projected two specific predictors of value co-creation. This finding may be perceived to be a significant outcome in the changing concept of co-creation confirming that co-creation activities offer firms’ effective and beneficial outcomes (Vargo and Lusch 2016). This study also hypothesised that value co-creation ensures benefits to the firm which has received support from earlier studies (Kostakis 2019). The finding helps to understand how co-production activities and participation of customers in the business process ignite the possibility of enhancement of value co-creation that eventually brings profitability to a business firm.

6.1 Theoretical Contributions

This article is claimed to provide several theoretical contributions. This research is a first attempt to identify the salient

predictors of co-production as well as intention of customers' participation in the business activities of a firm. This will change the traditional marketing scenario where target was only to profit by improving the product quality and reducing cost of production of a product or a service. This study is a first attempt to analyse the dimensions of customer experience, which are personalisation and relative advantage. This study has nurtured how these two dimensions could eventually contribute to motivate the customers to be involved to co-create values supplementing the concept of the other study (Roy et al. 2017). This study is considered as one of the initial attempts to significantly explore the contributions of control variables covering different individualistic behavioural attributes of customers for better understanding the concept of value co-creation activities (Porter and Donthu 2006).

The study has discussed many theories but has not blindly followed a single theory to formulate the model and that is why this study has been able to achieve such high explanative power. Most of the earlier models on co-creation were related to either co-production or future participation and few of the research models were related to co-creation with customer experience (McColl-Kennedy et al. 2012; Neuhofer et al. 2015; Zhang et al. 2018). The model in this paper is the first such model which shows how business benefits is related to co-creation. The model also explains the relationship between co-production and future participation with co-creation. Thus, this study has been able to develop a simple model triggering value co-creation for deriving business benefits of a firm.

This study has provided an insight on how cognition and relationship enhancement can impact co-production activities that eventually helps to enhance value co-creation leading to achieve business benefits. Moreover, this paper has contributed to the future researchers to explore to study how value co-creation activities directly impact business benefits of a firm. This work has opened a new field of further in-depth research. This paper has shown that co-production activities impact positively on value co-creation activities that respond to call for more studies on dependencies on co-production activities for ameliorating enhancement of co-creation. This study has also ignited a thought to the researchers that co-creation can enhance value that brings in business benefits. This architecture may be construed to be a new mechanism for achieving better profitability of a firm.

6.2 Implications for Practice

The study has provided many direct and indirect clues to the marketing managers of a firm. The study has categorically shown and clarified how the marketing management has shifted its focus from product-oriented activities to customer-related activities by way of importing a new concept on cocreation (Prahalad and Ramaswamy 2004a, b). The marketing managers should think that customers should no longer

be considered to silently receive the marketing messages from the firm regarding qualities of the products, their prices, their longevity and other relevant qualities, especially, in the context of the concept of value co-creation activities. The marketing managers of the firms are needed to arrange for enhancing co-production activities for increasing value co-creation. The policymakers of the firms are needed to arrange for getting the customers involved in the business activities of the firms. The customers are to be provided with opportunities so that they can share their ideas, designs, and other essential inputs to the firms. This would enhance to cocreate values and would eventually help the firms to achieve business benefits.

The marketing managers should realise how knowledge sharing activities between the customers and the firm authorities can be enhanced for ensuring better value co-creation to achieve profitability of a firm. The marketing managers should try to improve the relationship between the consumers and the firms that would enhance the co-production activities (Ordanini et al. 2011; McCell-Kennedy et al. 2012). The marketing managers should try to ameliorate the cognition of the customers regarding advantages of co-creation activities because enhancement of co-creation activities of the firms would increase the value that eventually would improve the business health of a firm.

The practitioners of the firms should educate the customers by enhancing their awareness regarding the benefits of co-creation. This would help the customers to unhesitatingly participate in all business activities of the firms. The active participation of the customers in such activities would help to co-create values improving the business environment of the firms (Prahalad and Ramaswamy 2000). For enhancing co-production activities, the marketing managers should arrange to enhance customers cognition and they should try to strengthen interactivity between customers and firms to improve co-creation values for improving business benefit of the firm by way of improving co-production activities (Kohler et al. 2011; Grover and Kohli 2012).

The study has shown that equitableness does not impact on co-production activities of a firm. Equitableness is a concept where a firm's willingness is manifested for sharing control in favour of customers' desire for contributing their active role in the activities relating to co-creation (Fisher and Smith 2011). Since this relation between equitableness and co-production has not been supported in this study to improve co-production being facilitator of co-creation, it will be the duty of the marketing manager to create a supportive and conducive atmosphere by adjusting the firms' willingness to share control with the customers. By this, the customers will think that they are part of the business activities of the firm and then the co-production activities would be enhanced to co-create value instrumental to derive business benefit to the firm (Edvardsson et al. 2011; France et al. 2018).

The study also highlights that the hypothesis that customer empowerment impacts on the intention of participation of

customers has not been supported. The customers' empowerment can be conceptualised through their belief that they are part of the business processes and activities of the firm (Zhang et al. 2018) and this sense helps to motivate customers to participate in the business activities to improve value co-creation. In this context, it is the duty of the managers of the firm to arrange to create such congenial atmosphere that the customers can have confidence that they are part and parcel of the business mechanisms of the firm and then they will be motivated to participate and such participation would impact positively on value co-creation for ensuring business benefits.

Finally, the marketing managers should be confident regarding the contribution of co-production and involvement of customers in the business activities of the firm. They can whole-heartedly act to get the customers involved in the firm's business activities by providing their valuable inputs to the firm authority to improve the product and service quality through this co-creation activity.

6.3 Limitations and Future Research Directions

Using survey, only 362 usable respondents' responses were considered. This should not be considered as a representative sample. Future researchers may take up this point by planning to consider more usable respondents. Future researchers may consider the issue of cultural disposition prevailing in different parts to examine the cross-cultural validity relating to the concept of co-creation. The study is India-specific. To give the shape of the model in a generalised form for universal applicability, the future researchers may validate the model in other countries to include or exclude some constructs if essential.

In India, the co-creation activities have not been fully adopted in the firms. Naturally, the respondents response had no direct experience of advantages or disadvantages of co-creation activities. Thus, we analysed the hypotheses using non-adopters' response. Hence, this result should be applied with proper precautions when applied for adopters. At that time, inclusion or exclusion of some boundary conditions might be necessary and could be considered as a part of the future research. The proposed model has not used any moderating variable. The future research could consider (e.g., consumer experience) a moderating variable to be used along this research model (Algharabat et al. 2020; Baabdullah et al. 2019; Ismagilova et al. 2020).

Finally, as this research has been conducted in India, the model is deemed to be helpful for value co-creation in the context of the Indian firms. The model ought to have been framed to have universal applicability by analysing the related issues with global perspectives. That could bring in more value to this study. Whatever may be the limitations of the study, it is to state that future participation (F) and co-production (P) appears to be the effective predictors of co-creation (C) that impacts on business benefit (BB) of the firm and this F-P-C-B framework is effective since it could achieve high explanative power (76%). Big data generated via various social media

platforms (Kar and Dwivedi 2020; Rathore et al. 2016) can also be utilised for conducting such analysis that will help to get a more objective view on this topic.

7 Conclusions

In this study, we have discussed by involving the consumers to design, ideate and develop new services or products by co-creation activities. The firms can derive benefits through improving co-creation activities, and this area has now emerged as significant as well interesting for the marketing managers of the firm. The study has provided a scope to nurture how engagement of consumers in the business activities through co-creation has helped to develop meaningful experience to the firm authority to achieve business benefits. The study has focussed attention to analyse how co-production activities along with active participation of the customers in the firms' business activities have been able to co-create values to improve business health of the firm. The study has analysed to identify the predictors of co-production as well as the predictors that help to motivate the customers to participate in the business activities of a firm. It has been ascertained in this study that cognition and establishment of relationship of the customers with the firm impact on the co-production activities. Moreover, customers' experience and societal support ignite the motivation of the consumers to participate in the business activities of the firm. The study highlights that equitableness has no significant impact on co-production whereas the customers' empowerment can hardly motivate the consumers to participate in the business activities. The reasons of such insignificant effects have been already explained in this study.

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