

Prosumers' intention to co-create business value and the moderating role of digital media usage

Article

Published Version

Creative Commons: Attribution 4.0 (CC-BY)

Open Access

Chatterjee, S., Mariani, M. ORCID: <https://orcid.org/0000-0002-7916-2576> and Wamba, S. F. (2023) Prosumers' intention to co-create business value and the moderating role of digital media usage. *Journal of Business Research*, 163. 113920. ISSN 1873-7978 doi: 10.1016/j.jbusres.2023.113920 Available at <https://centaur.reading.ac.uk/111651/>

It is advisable to refer to the publisher's version if you intend to cite from the work. See [Guidance on citing](#).

To link to this article DOI: <http://dx.doi.org/10.1016/j.jbusres.2023.113920>

Publisher: Elsevier

All outputs in CentAUR are protected by Intellectual Property Rights law, including copyright law. Copyright and IPR is retained by the creators or other copyright holders. Terms and conditions for use of this material are defined in the [End User Agreement](#).

www.reading.ac.uk/centaur

CentAUR

Central Archive at the University of Reading

Reading's research outputs online



Prosumers' intention to co-create business value and the moderating role of digital media usage

Sheshadri Chatterjee^c, Marcello Mariani^{a,b,*}, Samuel Fosso Wamba^d

^a Henley Business School, University of Reading, UK

^b University of Bologna, Italy

^c Department of Computer Science & Engineering, Indian Institute of Technology Kharagpur, West Bengal, India

^d TBS Business School, 1 Place Alphonse Jourdain, TOULOUSE, 31068, France

ARTICLE INFO

Keywords:

Prosumers
Co-production
Co-creation
Digital media usage
Business benefit
SEM
DIY
Consumer empowerment

ABSTRACT

The study identifies the factors impacting prosumers' intention for co-production and future participation. It also investigates the moderating role of digital media usage in the relationship between behavioral intention of prosumers for value co-creation and business benefit of the organization. Based on a literature review of co-creation and related theories and a survey, we developed and tested a conceptual model using the PLS-SEM technique. The study also analyzes the moderating impact of digital media by using multi group analysis. This study has also analyzed the impacts of three control variables (i.e., age, gender, and education) on the behavioral intention of the prosumers for value cocreation by means of mediation analysis. We find that the intention of prosumer for co-production as well as intention of prosumers for future participation influences behavioral intention of prosumers for value cocreation which in turn positively impacts business benefits of the organization. The study also finds that usage of digital media has significant moderating impact on the relationship between behavior intention of prosumers for value co-creation and business benefit of the organization.

1. Introduction

In the business landscape, three terms are used for capturing the dynamic role of consumers. The three terms are prosumption (Toffler, 1980), co-production (Vargo and Lusch, 2004), and co-creation (Prahalad and Ramaswamy, 2004a). In the context of the Service Dominant Logic (SDL) framework, co-production and co-creation can be investigated as a phenomenon which is concerned with the production as well as delivery of services. The internet has made it possible for the consumers to take an active role as co-producers since it has been possible for firms to directly communicate with the consumers towards customization of the products (Yadav and Varadarajan, 2005). Moreover, some researchers have opined that “the customer is always a co-creator of value” (Vargo and Lusch, 2008, p.2). However, though consumers take part as a co-producer in the production process, after the manufacturing process ends, consumers should learn how to use the product to satisfy the unique needs and here lies the need to understand the concept of prosumer. Prosumer is conceptualized as a short term combining the terms of consumer and producer. Researchers also have conceptualized the term prosumer as a combination of professional and

consumer (Humphreys and Grayson, 2008), referring to this term to indicate an expert user who claims high and advanced performance features. The concept of prosumer emerges from the participatory culture bridging the intimate relationship between buyers and sellers gradually blurring the aspects and concepts of consumptionscape (Jenkins et al., 2006; Parker et al., 2016; Jose Planells, 2017; Chatterjee, 2019). The role played by the prosumers is perceived to be vital in the context of co-creation, co-production, distribution, participation, and promotion by the help of interactive dialogs among the brand communities (Wang, 2020). The business market is gradually becoming a conversation forum with involvement of various actors across several platforms (Yen and Dey, 2019; Eckhardt et al., 2019; Mariani & Borghi, 2021). Prosumers interact with consumers and producers providing feedback and reviews (Filieri, 2013; Kim, Park, & Mariani, 2023; Mariani & Borghi, 2020; Zaman et al., 2023). They play a critical role of the influencer towards the decision-making of the fellow consumers (Niu et al., 2016; Chaudhuri, 2022; Mariani, Styven, & Nataraajan, 2021). Thus, in the business context, prosumption has become a social as well as psychological phenomenon and it has brought a dramatic change in the consumptionscape. However, there is a dearth of studies

* Corresponding author at: Henley Business School, University of Reading, UK & University of Bologna, Italy.

E-mail addresses: sheshadri.academic@gmail.com (S. Chatterjee), m.mariani@henley.ac.uk (M. Mariani), s.fosso-wamba@tbs-education.fr (S. Fosso Wamba).

<https://doi.org/10.1016/j.jbusres.2023.113920>

Received 18 December 2022; Received in revised form 14 February 2023; Accepted 31 March 2023

Available online 11 April 2023

0148-2963/© 2023 The Author(s). Published by Elsevier Inc. This is an open access article under the CC BY license (<http://creativecommons.org/licenses/by/4.0/>).

investigating how the intention of the prosumers could be helpful to cocreate business value and how digital media usage could influence the relationship between the intention of the prosumers to cocreate value and business benefit. This has necessitated having a theoretical understanding about the behavior of the prosumer in terms of marketing implication. Business style has become more consumer-centric where even the prosumers' intimate engagement in different business activities could impact the coproduction of the firms (Ballantyne & Varey, 2008). This has been derived from the Service Dominant Logic (SDL) literature (Vargo & Lusch, 2016). Moreover, the intention of the prosumers associated with coproduction and future participation could create business value. To explain this idea, this study has leveraged the Future Participation On Value Co-creation and Business Benefit (F-P-C-B) model (F-P-C-B) model (Chatterjee et al., 2021). Against this background, the aim of this study is to address the following objectives: (a) to determine the antecedents of intention of prosumers for coproduction; (b) to identify the antecedents of intention of prosumers for future participation for cocreating business values; (c) to investigate the moderating role of digital media usage on the relationship between intention of prosumers for value cocreation and business benefits.

The remainder of the paper is organized as follows. In section 2, we review the relevant literature. Section 3 illustrates the theoretical underpinnings and develops research hypotheses. Thereafter, section 4 describes the research methodology, that is followed by the findings, elucidated in section 5. Next, section 6 entails a discussion and conclusion, including theoretical contributions and practical implications, as well as limitations and future research directions.

2. Literature review

The term prosumer has been first introduced by Toffler (1980) wherein it has been envisaged that in the context of mass customization in this ever-changing marketplace, consumers used to have taken part in the process of production and designing for their own consumption. This concept has also given rise to the idea of 'do it yourself' (DIY) (Parker et al., 2016). The prosumer engagement has been increased manifolds owing to the widespread adoption of modern technologies like virtual reality and artificial intelligence (AI) supported by rapid proliferation of several social media platforms and AI systems (Dwivedi et al., 2020; Dwivedi et al., 2023; Mariani, Machado, Magrelli, & Dwivedi, 2023; Mariani, Hashemi, & Wirtz, 2023; Eckhardt et al., 2019; Wang, 2020; Basile et al., 2021). Previously, the process of value creation was confined to the product and firm-oriented view. But this has now been shifted to prosumer experience rendering the market a forum of interactions amongst the global actors through several platforms (Yen and Dey, 2019; Eckhardt et al., 2019; Shen et al., 2021; Lang et al., 2021). With the help of social media platforms, the global brand fans are now acting as evangelists for exchanging their experiences with the brand or the products (Dwivedi et al., 2015; Wang et al., 2018, 2019; Chatterjee et al., 2021; Styvén, Mariani, & Strandberg, 2020). The perception of prosumer is considered as the early marker of value-cocreation (Chandler and Chen, 2015; Chan et al., 2022). Though, there are some similarities between co-creators and prosumers, they are different since prosumers do not necessarily need another one for co-creating value and the prosumer-related literature does not principally focus on value-cocreation per se (Filieri, 2013; Zhang, 2017; Fox, 2018; Halassi et al., 2019; Martindale and McKinney, 2020). It is a fact that prosumers' coproduction activities are related to the extent to which firms possess the willingness to share control with the consumers which entails a sense of equitableness (Kotler, 1986; Hoyer et al., 2010; Heiko et al., 2010; Fisher and Smith, 2011; Vrontis et al., 2021). Besides, the prosumers' intention of coproduction is instrumental towards their intimate engagement with the firms' production activities through sharing and understanding the need of the firm (Prahalad and Ramaswamy, 2004b). Prosumers' active participation in the process of coproduction is assessed by the prosumers' behavioral action, integrative role and

Table 1

Different types of prosumers and explanation.

| Prosumer type | Source(s) | Explanation |
|--|---|---|
| Engaging prosumer (monetization) | Sawhney et al. (2005); Patterson et al. (2006); Nambison (2009); Morreale (2014); Andrews and Ritzer (2018) | This type of prosumer engages with the firms and creates value. The value creation is accessible through a commercial deal using any third party or by them directly. |
| DIY prosumer (Do It Yourself) | Toffler (1980); Parker et al. (2016); Wang et al. (2018) | These kinds of Prosumers perform their entire tasks for their own benefits and usage. |
| Equity participative prosumers (Equitableness) | Hoyer et al. (2010); Heiko et al. (2010); Fisher and Smith (2011); Mele (2011) | This kind of prosumer engages with the firms based on equitableness and creates value for themselves as well as for the firms. |
| Empowering prosumer | Wigfield and Eccles (2000); Neghina et al. (2017); Busser and Shulga (2019) | This type of prosumer engages with firms due to feelings of empowerment and creates value for themselves and for others. |
| Self-service prosumer | Toffler (1980); Kotler (1986) | This type of prosumer uses technology and performs partial self-service related tasks. |
| Personalizing prosumer | Ritzer (2014); Fox (2018) | This kind of prosumer likes to personalize and customize their own products or services for different purposes and for their own consumption. |
| Collaborative prosumer | Pitt et al. (2006); DesAutels (2011) | This type of prosumer creates values for their own and other consumers. Different third parties can have access to their creation on non-commercial basis. |
| Economic prosumer | Brodie et al. (2011); Hollebeck et al. (2014); Jose Planells (2017); Eckhardt et al. (2019) | This kind of prosumer gets various commercial benefits and incentives directly or through a third party for creating values for others. |
| Future participative prosumer | Prahalad and Ramaswamy (2004a); Dey et al. (2016); Vargo and Lusch (2016); Tu et al. (2018) | These types of prosumers are interested in participating in future tasks to create value for the firms on a commercial or non-commercial basis. |

spontaneity which are concerned with the experience of such consumers (Heinonen and Strandvik, 2015; Eckhardt et al., 2019; Nguyen, 2021). Prosumers' engagement with the firm's activities helps the prosumers to develop a sense of empowerment which supports the prosumers to acquire a tendency for participating more in the firm's activities (Cherpurna and Rialp Criado, 2018; Bhattacharjee et al., 2021). In the marketing literature, it is seen that for value creation, firms are found to have more dependence on consumers' personal needs with prosumers' experience that help the prosumers to participate more in the firms' activities (Yen and Dey, 2019). Engagement, self-service, and interaction are considered as the critical and indispensable ingredients towards joint creation of value (Oertzen et al., 2018; Sheshadri, 2020). The prosumers' coworking activities with the firms in the process of production or in the process of service provision have effective impacts on the value of cocreation as is revealed from other studies (Achrol and Kotler, 2012; Zhang et al., 2018). Prosumers' active participation in all marketing activities as active operant resources is perceived to have an impact on cocreation of values (Saarijarvi et al., 2013; France et al., 2018; Chaudhuri, & Vrontis, 2021). Several studies demonstrated that involvement of consumers in various firms' marketing activities concerning innovation along with product-dependent process help the firm

to enhance the value of the product impacting its business benefits (D'Andrea et al., 2019; Jayashankar et al., 2019; Mariani & Wamba, 2020). Studies have highlighted that the prosumers' coproduction and participation activities supported by digital media usage are perceived to bring in profitability of the firms impacting their business values (Kostakis, 2019; Saha et al., 2020; Sharma, Dwivedi, Mariani, & Islam, 2022). The different types of prosumers, their explanations and sources are illustrated in Table 1.

3. Theoretical underpinning and development of hypotheses

3.1. Theoretical underpinning

In terms of the service dominant logic (SDL) (Vargo and Lusch, 2016), the marketing scenario has undergone a drastic change as the businesses now have become consumer centric where consumers' participation in the production process has invited the joint concept of production and consumption to generate the new term prosumer (Tofler, 1980). Consumers have become prosumers to create or rather co-create value (Ranjan and Read, 2016). It is pertinent to mention here that prosumers can build and create value towards coproduction because of their intimate engagement with the production activities of the firms and because they share their knowledge and experience in the production activities (Pralhad & Ramaswamy, 2004b).

The concept and framework of SDL has been applied in the present study by interpreting that prosumers' intimate engagement in the firm activities including intervention in the designing process with control over the firm's different activities (equitableness) will impact on the coproduction (Ballantyne and Varey, 2008) of the firm. This idea is also supplemented by the theory of value creation (Galvagno and Dalli, 2014) which enjoins that coproduction is concerned with designing business processes helpful to develop the products (Lehrer et al., 2012). Besides, SDL posits that firms not only emphasize the development of products or services but also take into account the feedback of the consumers which could cocreate value in the promotional activities of the products and services (Grönroos and Voima, 2013). SDL also highlights that for ameliorating value cocreation is predicted by prosumers' coproduction activities, role of prosumers' engagement, involvement in designing activities along with having control is perceived to be critical (Grönroos, 2008). In this context, it has been observed by the scholars that "we define service science, models, theories, and applications to drive service innovation, competition, and wellbeing through cocreation of value" (Ostrom et al., 2010, p.5). The SDL also indicates that consumers' different attributes like experience, experiment as well as personalization impact on the consumers' active future participation in several firm's activities that prompt to cocreate value. This idea has been confirmed by other studies (Jansen and Pieters, 2017; Xiao et al., 2020). Thus, prosumers' intention towards coproduction as well as future participation are perceived to prompt value cocreation impacting business value which is in consonance with the F-P-C-B model enunciated by Chatterjee et al. (2021). This model emphasizes that intention of future participation (F) and intention of coproduction (P) could jointly prompt to cocreate (C) value leading to ensure business benefits (B) for a firm. Thus, it has become evident that engagement of consumers, consumers' designing abilities in the firms and equitableness predict coproduction intention of the prosumers, whereas experience, empowerment as well as personalization are perceived to impact future participation of the prosumers. Again, it also appears that coproduction as well as future participation have the joint possibility to cocreate value eventually impacting the business value of the firms.

3.2. Hypotheses development

From the review of literature and from the theories, it has become evident that some factors impact coproduction as well as future participation of the prosumers which simultaneously can co-create value

prompting eventually business benefits for the firms. Besides, the use of digital media also helps to impact business value (Dwivedi et al., 2020). Here all these determinants will be interpreted with an endeavor to formulate some hypotheses for developing a model conceptually.

3.2.1. Consumer engagement (CEN)

Consumer engagement (CEN) can be divided into two categories, behavioral engagement, and psychological engagement. A consumer acting as a prosumer is said to have been behaviorally engaged with a firm when it is seen that such engagement is associated with focal brand, recommendations, feedback, value cocreation, and so on (D'Ambra, Akter, & Mariani, 2022; Mariani, Mura, & Di Felice, 2018; Sawhney et al., 2005; Nambisan and Robert, 2009). This concept is related to the feelings of the brands or firms (Hollebeek et al., 2014; Sharma et al., 2021). Consumer psychological engagement can be conceptualized with vigor, dedication, as well as absorption (Patterson et al., 2006). Vigor means that it is an assessment of energy of consumers to spend time in several firms' activities (Morreale, 2014). Dedication is concerned with the sense of the prosumers which helps to assess zeal, egotism, challenges, interaction, and so on towards the services or the products (Andrews and Ritzer, 2018). Absorption is conceptualized as the prosumers' involvement with brands or services or the products (Tyler, 1978). Consumer psychological engagement is interpreted as "a psychological state that occurs by virtue of interactive, co-creative experiences with a focal agent or object" (Brodie et al., 2011, p.259). The prosumers' engagement with the firms behaviorally and psychologically is perceived to have impacted the intention of the prosumers for coproduction. Accordingly, it is hypothesized what follows.

H1a: Consumer engagement (CEN) with the firms has a positive influence on the intention of prosumers for co-production (IPC).

3.2.2. Do it yourself (DIY)

Do it yourself (DIY) is defined as the behaviors where "individuals use raw or semi-raw materials and parts to produce, transform, or reconstruct material possessions, including those drawn from the natural environment (e.g., landscaping)" (Wolf and McQuitty, 2011, p.154). Thus, DIY helps to promote the concept that anyone can perform a task or a variety of tasks without depending on the specialists or experts. This concept of DIY gives rise to the concept that consumers can take part in the coproduction activities of a firm in designing a product or can provide effective inputs to the firm for restructuring the existing activities for betterment of the firms (Triggs, 2006). The phrase 'do it yourself' (DIY) came into popular usage by 1950s in relation to the emergence of a trend of individuals' undertaking of various projects as a cost-saving activity or as a creative-recreational activity (Pitt et al., 2006). Prosumers also act in terms of DIY when they directly or indirectly take part in the marketing activities of the firm to help the firms' production or service unit (Kotler, 1986). This idea helps to formulate the following hypothesis.

H1b: The concept of do it yourself (DIY) impacts the intention of the prosumers for coproduction (IPC).

3.2.3. Equitableness (EQT)

Equitableness (EQT) is associated with the concept of willingness of a firm to impose control in the context of the desire and expectation of the consumers to contribute some input in coproduction as a cocreation activity (Hoyer et al., 2010; Fisher and Smith, 2011). Through consumers' centralism, equitableness can be ensured (Pralhad and Ramaswamy, 2002) in a firm provided the firm authority possesses willingness to share control with the consumers for improvement of coproduction activities (Heiko et al., 2010). EQT brings in effective and fruitful synchronization of interest for achieving the goal with value actualization to ensure improved coproduction activities (Karpen et al., 2012; Sheshadri, 2019). EQT is seen to have brought effective results

towards improvement of co-production activities when there exists a conducive environment relating to the relationship between consumers and the firm (Mele, 2011). These inputs help to formulate the following hypothesis.

H1c: Equitableness (EQT) positively influences the intention of the prosumers for co-production (IPC).

3.2.4. Consumer experience (CEX)

Experience can be conceptualized as emotional, memorable, and empathetic interactions which are perceived to carry some intrinsic values (Ballantyne and Varey, 2008). Experience is associated with the concept of an artefact concerned with the products or services offered by the firms (DesAutels, 2011). With the help of cognitive as well as physical dimensions, consumers can linkup the above-mentioned artefacts for value cocreation and it can be achieved by experience of the consumers (Edvardsson et al., 2011). Through the help of behavioral action, spontaneity and integrative role, a consumer can gain experience (Heinonen and Strandvik, 2015). The experience of a consumer is assessed by the extent to which the consumer can apply modern technology in the firm (Pantano and Timmermans, 2014). Technology related experience of a consumer represents an experience that impacts the intention of the consumer for future participation that could influence value cocreation (Homburg et al., 2017; Mariani & Predvoditeleva, 2019). Accordingly, it is hypothesized as follows.

H2a: Consumer experience (CEX) positively impacts the intention of prosumer for future participation (IPF).

3.2.5. Consumer empowerment (COE)

Consumer empowerment (COE) is associated with the concept that the tendency of a consumer to be engaged in cocreation activities for fulfilling the needs of the consumer is transferred into the empowerment motivation of the consumer (Neghina et al., 2017). COE is conceptualized as the extent of expectation of the consumers in the context of power to be exercised by the consumers in the firm activities (Wigfield and Eccles, 2000). COE helps the consumers value cocreation that is gained by the consumers through the active participation in the firm activities as cocreation is construed as a direct result of collaborative activities (Busser and Shulga, 2019). The value which is developed through cocreation activities helps the consumers to achieve and gain the sense of empowerment motivating the consumers to be more involved for participation in the firm activities (Hoyer et al., 2010). These discussions help to formulate the following hypothesis.

H2b: Consumer empowerment (COE) positively impacts the intention of prosumers for future participation (IPF).

3.2.6. Personalization (PER)

Consumers of today appear to be more diverse breed (Fox, 2018). In the dynamic market, the expectations and the choices of the consumers are found to be ever-changing (Ritzer, 2014). With the help of different information, their expectations are developed and changed with time. Firms need to understand the actual needs of the consumers in the real-time scenario (DesAutels, 2011). In this respect, if the consumers take part in the designing process of the products commensurate with the need of the consumers, which is interpreted as personalized service, it will help the firm to improve their cocreation values (Ritzer, 2014). Participation of the prosumers will impact meeting the ever-changing demands of the consumers through improving the design, features, and so on of the products according to the present need of the consumers (Kotler, 1986). Economics of integration have ensured the participation of the prosumers towards the production tasks for better cocreation of personalized and customized offerings for the consumers in the dynamic market (Dwivedi et al., 2015; Piller et al., 2004; Sandström et al., 2008). For offerings of personalized products, help of prosumers become

essential and that is why in the context of personalization, the prosumers have become “reactive consumers” (Cova and Salle, 2008). These prosumers are also called customizing prosumers since they used to have personalized and customized their own products as well as services which could also meet the changing expectations of the other consumers (Ritzer, 2014; Fox, 2018). Accordingly, it is hypothesized as follows.

H2c: Personalization (PER) of the products or services by the prosumers positively impacts the intention of prosumers for future participation (IPF).

3.2.7. Intention of prosumers for coproduction (IPC)

The coproduction activities of the prosumers emerge from the co-working activities of the prosumers with the firm's production activities which are perceived to impact cocreation values (Achrol and Kotler, 2012; Yang et al., 2017; Zhang et al., 2018). In the coproduction activities of the prosumers, the prosumers play an active role and help the firms value cocreation by their collaborative efforts during several stages of production (Hoyer et al., 2010). Value configuration is achieved and implemented by the integration activities between the prosumers and the firm through intimate intention and collaboration which comes under the ambit of coproduction activities to develop value cocreation (Prahalad and Ramaswamy, 2004b; Ballantyne and Varey, 2008). Thus, self-service engagement and interaction are deemed to have been considered as critical components of prosumer coproduction activities which are perceived to impact the behavioral intention of prosumers for value cocreation (BIP). Accordingly, it is hypothesized as follows.

H3: Intention of prosumers for coproduction (IPC) positively impacts behavioral intention of prosumers for value cocreation (BIP).

3.2.8. Intention of prosumers for future participation (IPF)

In the context of complex and traditional industrial development perspective in the hyper marketing environment, there is no role of consumers in the traditional value chain concept (Dey, Pandit, Saren, Bhowmick, & Woodruff-Burton, 2016). But with passage of time, in the complex dynamic marketing scenario, there has been a total change of marketing dynamics (Prahalad and Ramaswamy, 2004a). The changed marketing processes have brought in active participation of all the stakeholders in the process of consumption as well as production (Vargo and Lusch, 2016; Lin et al., 2017; Zollo et al., 2020) inviting the concept of cocreation. It has become a joint endeavor of the consumers and the firm rendering the consumers as prosumers (Tu et al., 2018; Bazi et al., 2020). Value cocreation emerges from active participation of the consumers renamed in the changed context as prosumers (France et al., 2018). This dyadic and collaborative relation between the consumers and the firm comes out because of active participation of the consumers renamed as prosumers. In such a scenario, it is expected to intend the prosumers for value cocreation. In terms of the above discussions, the following hypothesis is developed.

H4: Intention of prosumers for future participation (IPF) positively impacts behavioral intention of prosumers for value cocreation (BIP).

3.2.9. Behavioral intention of prosumers for value cocreation (BIP) and business benefit (BUB)

Several studies have demonstrated that consumers' involvement in the innovation as well as production process has brought in business benefits of the firms owing to increase of product value (Jayashankar et al., 2019; Mariani & Nambisan, 2021). Several emerging countries have stressed the need of active participation of the consumers in the firm's business activities to enhance value cocreation (Prahalad and Ramaswamy, 2004b; Filieri et al., 2018). The value of creation is perceived to be helpful to ensure profitability of a firm (D'Andrea et al.,

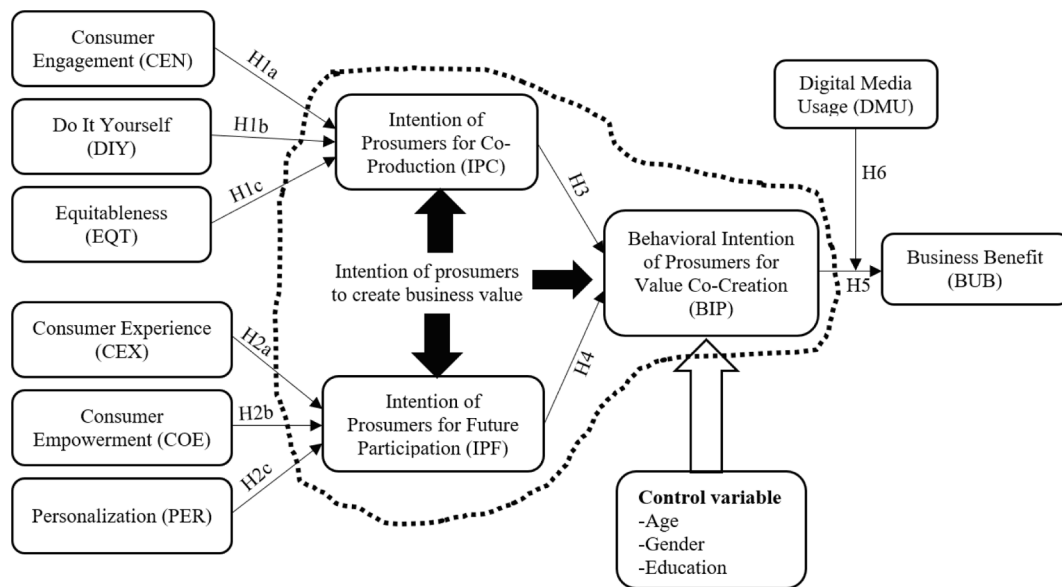


Fig. 1. The conceptual model.

2019). Coproduction and active participation are bringing business society to arrive at a consumer-based cocreation era (Saha et al., 2020). When the consumers utilize the experience with the concept of product service proposition of a firm, value is cocreated (Yu et al., 2020). Accordingly, it is hypothesized as follows.

H5: Behavioral intention of prosumers for value cocreation (BIP) positively impacts the business benefit (BUB) of the firm.

3.2.10. Moderating effects of digital media usage (DMU)

Social networking communities are involved in working together to achieve better services and products (Silver, 2009). This process has been able to put more power in the consumers' hands who have consequently become voice for a brand (Coulton, 2011). It has been stated that "brand owners do not tell brand stories alone but cocreate brand performances in collaboration with consumers" (Singh and Sonnenburg, 2012, p.189). Thus, products and services have become social objects that can be assessed and shared amongst the members of a network of peers (Dwivedi et al., 2022; Metz, 2011; Ek Styvén & Mariani, 2020). In this perspective, the vision of Toffler (1980) in the concept of prosumer has given birth to social consumer concerning embodiment of the prosumers because they are using digital media considering them as principal information resources (Silver, 2009). In this context, the digital media services have been named as "prosumers platforms, explaining that they have the capacity to initiate and sustain affective relations and value realization through informational capitalism" (Arvidsson and Colleoni, 2012, p.135). Thus, high digital media usage is perceived to help with improved cocreation activities by the prosumers impacting better business benefit. Accordingly, it is hypothesized what follows.

H6: Digital media usage (DMU) moderates the relationship between behavioral intention of prosumers for value cocreation (BIP) and business benefit (BUB) of a firm.

It has been suggested in another study that there is probability of influencing any innovative system by the behavioral, psychographic, and demographic nature of the consumers (Porter and Donthu, 2006). Thus, to ensure better delineation of different relationships proposed in this model, some demographic variables of the consumers such as, age, gender, and education of the prosumers have been considered.

With all these inputs, a model has been developed conceptually. This is shown in Fig. 1.

4. Research methodology

The conceptual model and the related hypotheses were tested deploying partial least square (PLS) – structural equation modelling (SEM) technique with PLS3.2.3 software (Sarstedt et al., 2017). PLS-SEM has been preferred because the approach is deemed to be flexible and can analyze a complex model in a simple way (Lowry and Gaskin, 2014). Besides, the PLS-SEM technique has been chosen since it does not impose any sample restriction (Willaby et al., 2015) and does not require the data to be normally distributed, which is the essential condition for analysis of data by covariance-based (CB) structural equation modelling (SEM) technique (Rigdon et al., 2017).

5. Research instruments

With the knowledge of the constructs and from the inputs of the existing validated scales, some instruments have initially been prepared to ensure the content validity. For ascertaining the defects in the readability of the instruments, a pretest has been conducted, the result of which helped to rectify the wordings and some of the formats of the instruments so that the respondents do not feel any difficulty understanding the instruments, and this will also ensure better response. A pilot study was also conducted after the items have been refined in the pretest stage. The pilot test has been conducted to confirm the readability of the scales and to assess the contemplated response rate. From the feedback of the pilot test, some instruments were dropped for improving the readability of the relevant constructs. Thereafter, the opinions of six experts, having adequate knowledge in the domain of this study, were taken for enhancement of the comprehensiveness of the instruments. Out of the six experts, four experts work in the industry, each possessing more than ten years of professional experience in the topic of this study. The remaining two experts work in academia, each of them has more than fifteen years of research experience in the domain of this work.

In this way, through step-by-step rectification process, 36 instruments could be prepared. The details of instruments with their sources are provided in the appendix.

5.1. Collection of data

An online questionnaire survey method has been preferred for data collection. 36 instruments have been sent to the consumers, employees

Table 2
Demographic information (N = 349).

| Particulars | Category | Number | Percentage (%) |
|-------------|------------------|--------|----------------|
| Gender | Male | 229 | 65.6 |
| | Female | 120 | 34.4 |
| Age | <25 years | 44 | 12.6 |
| | 25–40 years | 161 | 46.1 |
| | 41–55 years | 87 | 24.9 |
| | >55 years | 57 | 16.4 |
| Education | Higher secondary | 66 | 18.9 |
| | Undergraduate | 117 | 33.5 |
| | Postgraduate | 143 | 40.9 |
| | Researchers | 23 | 6.7 |

Table 3
Measurement properties.

| Constructs / Items | Mean | SD | LF | AVE | CR | α | t-values |
|--------------------|------|-----|------|------|------|----------|----------|
| CEN | | | | 0.86 | 0.89 | 0.92 | |
| CEN1 | 3.7 | 1.7 | 0.98 | | | | 24.07 |
| CEN2 | 2.3 | 1.9 | 0.89 | | | | 25.11 |
| CEN3 | 4.1 | 1.1 | 0.91 | | | | 31.77 |
| DIY | | | | 0.82 | 0.85 | 0.89 | |
| DIY1 | 3.6 | 1.2 | 0.88 | | | | 14.81 |
| DIY2 | 3.1 | 1.4 | 0.94 | | | | 11.37 |
| DIY3 | 3.8 | 1.1 | 0.90 | | | | 22.02 |
| EQT | | | | 0.86 | 0.89 | 0.94 | |
| EQT1 | 3.2 | 1.7 | 0.97 | | | | 28.11 |
| EQT2 | 3.4 | 1.9 | 0.88 | | | | 31.17 |
| EQT3 | 3.6 | 1.3 | 0.96 | | | | 29.07 |
| EQT4 | 4.2 | 1.5 | 0.89 | | | | 17.17 |
| CEX | | | | 0.83 | 0.87 | 0.91 | |
| CEX1 | 3.7 | 1.6 | 0.93 | | | | 25.18 |
| CEX2 | 4.3 | 1.4 | 0.88 | | | | 27.17 |
| CEX3 | 4.5 | 1.3 | 0.92 | | | | 32.06 |
| COE | | | | 0.78 | 0.82 | 0.85 | |
| COE1 | 3.7 | 1.7 | 0.87 | | | | 34.18 |
| COE2 | 4.7 | 1.8 | 0.85 | | | | 32.17 |
| COE3 | 3.2 | 1.3 | 0.87 | | | | 23.11 |
| COE4 | 4.1 | 1.4 | 0.94 | | | | 26.65 |
| PER | | | | 0.80 | 0.83 | 0.87 | |
| PER1 | 3.5 | 1.5 | 0.90 | | | | 24.89 |
| PER2 | 4.4 | 1.6 | 0.96 | | | | 28.17 |
| PER3 | 4.6 | 1.6 | 0.89 | | | | 26.12 |
| PER4 | 3.9 | 1.1 | 0.95 | | | | 31.99 |
| IPC | | | | 0.88 | 0.92 | 0.95 | |
| IPC1 | 4.1 | 1.3 | 0.92 | | | | 30.48 |
| IPC2 | 2.8 | 1.1 | 0.96 | | | | 32.88 |
| IPC3 | 3.1 | 1.4 | 0.97 | | | | 19.89 |
| IPC4 | 4.6 | 1.7 | 0.96 | | | | 29.11 |
| IPF | | | | 0.80 | 0.83 | 0.87 | |
| IPF1 | 3.4 | 1.8 | 0.85 | | | | 26.97 |
| IPF2 | 3.1 | 1.2 | 0.96 | | | | 38.11 |
| IPF3 | 3.7 | 1.6 | 0.93 | | | | 33.12 |
| IPF4 | 4.6 | 1.9 | 0.89 | | | | 24.18 |
| BIP | | | | 0.80 | 0.84 | 0.88 | |
| BIP1 | 4.4 | 1.4 | 0.90 | | | | 26.11 |
| BIP2 | 3.4 | 1.3 | 0.94 | | | | 27.13 |
| BIP3 | 2.1 | 1.7 | 0.85 | | | | 34.13 |
| BIP4 | 2.7 | 1.8 | 0.88 | | | | 36.65 |
| BUB | | | | 0.78 | 0.82 | 0.86 | |
| BUB1 | 3.8 | 1.1 | 0.85 | | | | 22.20 |
| BUB2 | 2.1 | 1.3 | 0.89 | | | | 34.04 |
| BUB3 | 4.2 | 1.6 | 0.88 | | | | 27.18 |

of different firms, and some researchers who are involved in the research of prosumer-related domains. This process has been preferred because it involves lower cost, ensure better reachability to the potential respondents, and the process seems to be less time consuming. Moreover, this online survey system requires minimum human involvement since it is associated with corporatized auto-data entry system. This also eliminates the scope of human error. The questionnaire link was also sent through Instagram, Facebook, LinkedIn and so on to

ensure better reachability. Questionnaire hyperlinks had also been sent to different individuals through emails with whom the authors have personal contact. In this way, it was possible to tap 805 prospective respondents. Regular reminders were given to them to ensure a better response rate. With this technique, it was possible to obtain responses of 361 respondents within a window of three months (May 2022 to July 2022). The response rate was 44.7 %. A non-response bias test has been conducted. Recommendations as envisaged in [Armstrong and Overton \(1977\)](#) have been duly followed. Chi-Square test and independent *t*-test have been conducted considering the feedback of first 100 respondents and the feedback of last 100 respondents. No appreciable deviation of results was noted. This confirms that the result does not suffer from the defect of non-response bias. On scrutiny of the 361 responses, 12 responses were found incomplete. Hence, those were not considered. These 12 responses were not considered because they pertain to 12 respondents who put tick marks in more than one option out of five options against each question. The analysis was conducted with 349 responses against 36 instruments which are within the permissible range ([Deb and David, 2014](#)). The responses have been quantified in 5-point Likert scale with strongly disagree (SD) marking as 1 to strongly agree (SA) marking as 5. The demographic information of 349 respondents is provided in [Table 2](#).

The participants were 65.6 % male, 46.1 % within age of 25–40 years and 40.9 % possess postgraduate qualification.

6. Findings

6.1. Measurement properties

To verify the content validity of each instrument, loading factor (LF) has duly been estimated. To examine the validity, reliability, and internal consistency of each construct, average variance extracted (AVE), composite reliability (CR), and Cronbach's alpha (α) have duly been estimated. All the estimated values are found to be within the allowable range. It appears from the results that all the values of LFs are greater than the lowest acceptable value of 0.7 ([Chin, 2010](#)). Moreover, the estimated values of AVEs are all found to be higher than the lowest permissible value of 0.5 ([Hair et al., 2017](#)). The results are provided in [Table 3](#).

6.2. Discriminant validity test

It has been observed that all the square roots of AVE are greater than the corresponding bifactor correlation coefficients satisfying Fornell and Larcker criteria ([Fornell & Larcker, 1981](#)). This confirms discriminant validity. The results are shown in [Table 4](#).

6.3. Moderator analysis (Multi group Analysis)

In this study, digital media usage (DMU) has been considered as a moderator impacting on the linkage BIP → BUB (H5). Effects of DMU on H5 have been considered taking Strong DMU and Weak DMU by dividing the effects of DMU in two groups. Here multi group analysis (MGA) technique has been used with consideration of bootstrapping system taking 5000 resamples. The results show that the *p*-value difference between the effects of High DMU and Low DMU on H5 is 0.03 (≤ 0.05). Hence the effects of DMU on H5 are significant ([Hair et al., 2017](#)).

6.4. Effect size f^2 test

The f^2 values have been estimated to verify if there is any contribution of exogenous latent variables on the corresponding endogenous variables. As opined by [Cohen \(1988\)](#), f^2 value indicates weak (0.020 to 0.150), it is called medium (0.150 to 0.350), it is considered as large (>0.350). The findings of this study show that effect size of CEN on IPC

Table 4

Discriminant validity test (Fornell and Larcker criteria).

| Constructs | CEN | DIY | EQT | CEX | COE | PER | IPC | IPF | BIP | BUB | AVE |
|------------|------|------|------|------|------|------|------|------|------|------|------|
| CEN | 0.93 | | | | | | | | | | 0.86 |
| DIY | 0.17 | 0.90 | | | | | | | | | 0.82 |
| EQT | 0.22 | 0.27 | 0.93 | | | | | | | | 0.86 |
| CEX | 0.24 | 0.22 | 0.35 | 0.91 | | | | | | | 0.83 |
| COE | 0.29 | 0.24 | 0.26 | 0.18 | 0.88 | | | | | | 0.78 |
| PER | 0.26 | 0.31 | 0.33 | 0.26 | 0.25 | 0.89 | | | | | 0.80 |
| IPC | 0.19 | 0.29 | 0.35 | 0.22 | 0.32 | 0.28 | 0.94 | | | | 0.88 |
| IPF | 0.32 | 0.27 | 0.39 | 0.23 | 0.34 | 0.32 | 0.25 | 0.89 | | | 0.80 |
| BIP | 0.30 | 0.33 | 0.19 | 0.25 | 0.19 | 0.17 | 0.27 | 0.33 | 0.89 | | 0.80 |
| BUB | 0.24 | 0.26 | 0.32 | 0.21 | 0.17 | 0.29 | 0.21 | 0.29 | 0.34 | 0.88 | 0.78 |

Table 5Effect size* f^2 .

| Construct | IPC | IPF | BIP | BUB |
|-----------|-----------|-----------|-----------|-----------|
| CEN | 0.168 (M) | | | |
| DIY | 0.112 (W) | | | |
| EQT | 0.276 (M) | | | |
| CEX | | 0.412 (L) | | |
| COE | | 0.117 (W) | | |
| PER | | 0.291 (M) | | |
| IPC | | | 0.411 (L) | |
| IPF | | | 0.399 (L) | |
| BIP | | | | 0.426 (L) |

* L: Large; M: Medium; W: Weak.

Table 6

Mediation analysis*.

| Mediation hypotheses | Indirect effect (IE) | p-value | LCL | UCL |
|-----------------------|----------------------|---------|------|------|
| Age → BIP → BUB | 0.11 | 0.01 | 0.04 | 0.19 |
| Gender → BIP → BUB | 0.14 | 0.02 | 0.07 | 0.26 |
| Education → BIP → BUB | 0.16 | 0.00 | 0.03 | 0.17 |

*LCL: Lower Confidence Level; UCL: Upper Confidence Level.

is 0.168 (M), of DIY on IPC is 0.112 (W), of EQT on IPC is 0.276 (M), of CEX on IPF is 0.412 (L), of COE on IPF is 0.117(W), of PER on IPF is 0.291 (M), of IPC on BIP is 0.411 (L), of IPF on BIP is 0.399 (L), of BIP on BUB is 0.426. The results are presented in Table 5.

6.5. Causality test

Causality is considered an important issue. This needed to be conducted before hypotheses testing (Guide and Ketokivi, 2015). In terms of suggestions of Kock (2015), non-linear bivariate causality direction ratio (NLBCDR) has been assessed. The acceptable value is ≥ 0.7 (Wamba et al., 2019). The results of NLBCDR of each path emerges as CEN → IPC (0.981); DIY → IPC (0.999); EQT → IPC (1.000); CEX → IPF (1.001); COE → IPF (1.003); PER → IPF (0.996); IPC → BIP (0.998); IPF → BIP (1.001); BIP → BUB (1.004). All these values are found to be >0.7 . The values highlight strong evidence that the causality is weak concerning the reversed hypothesized direction. In total, causality should not be considered as a major issue in this study.

6.6. Mediation analysis

Using Process tools, mediation analysis has been conducted (Mishra et al., 2018) considering mediating variable BIP between Age and BUB; between Gender and BUB, and between Education and BUB linkages (Hayes, 2013). The mediating role of BIP between these three control variables Age, Gender, and Education of the respondents and the Business Benefit (BUB) have been analyzed by examining indirect effects

(IEs) and bias correlated confidence interval (CI) with bootstrapping taking 90 % confidence level (Nitzl et al., 2016). The results are provided in Table 6.

The results demonstrate that BIP acts as an important mediating variable between BUB and its three control variables Age, Gender, and Education. Hence, BIP acts as a complementary vital mediator. The results highlight that confidence interval regarding bias correlated bootstrapping of BIP as mediator is different from zero for Age (0.04 to 0.019), for Gender (0.07 to 0.26), and for Education (0.03 to 0.17). The results highlight that the effects of the three control variables – i.e., age, gender, and education – on the behavioral intention of the prosumers for value-cocreation (BIP) are significant and it is also concluded that BIP acts as a significant mediator between the three aforementioned control variables and business benefit (BUB).

6.7. Common method variance (CMV)

In the case of survey-based data, there is potential for CMV because the respondents replied with their perception associated with implicit social desirability that might cause certain amount of CMV. To minimize CMV, some steps have been taken as a procedural remedy. As a pre-emptive measure, the respondents were assured that their anonymity and confidentiality will be strictly preserved during the survey. Also, during pretest, the wordings of the questionnaire along with some formats of the items were rectified to make them simple and understandable by the respondents. These procedural steps are taken with an expectation that the respondents will respond without any bias. However, in addition, two statistical tests have been conducted for assessing the severity of CMV. Harman's Single Factor Test (SFT) was performed. The first factor emerged as 27.24 %, which is <50 % as recommended by Podsakoff et al. (2003). Also, CMV was examined with correlation marker technique (Lindell and Whitney, 2001) since some scholars opined that Harman's SFT does not provide a robust test (Ketokivi and Schroeder, 2004). In such a scenario, use of marker variables is recommended as one of the most important tests, especially in the marketing operational management area (Wamba et al., 2019). The marker variable technique yielded a result that the difference between the original and CMV based correlations was appreciably small (≤ 0.06) (Mishra et al., 2018). Hence, CMV is deemed to have not severely affected the prediction and the results of this study.

6.8. Hypotheses testing with structural equation modelling approach

Using SmartPLS and with the help of bootstrapping process considering 5000 resamples, hypotheses have been tested by the blindfolding process (Mishra et al., 2018). The procedure has been recommended by Henseler et al. (2014). This process is also recommended as convenient when PLS-SEM approach is taken (Hair et al., 2011). With consideration of omission separation 5, the cross-validated redundancy has been measured by estimating Stone-Geisser Q^2 values which came out to be 0.062 (Stone, 1974; Geisser, 1975). This confirms that the model has

Table 7Path coefficients, R² values, p-values, and remarks.

| Linkages | Hypotheses | Path coefficients/ R ² values | p-values | Remarks |
|-------------------|------------|---|-----------------|---------------|
| Effects on IPC | | R ² = 0.31 | | |
| By CEN | H1a | 0.21 | p < 0.001 (***) | Supported |
| By DIY | H1b | 0.33 | p < 0.05 (*) | Supported |
| By EQT | H1c | 0.02 | p > 0.05 (ns) | Not Supported |
| Effects on IPF | | R ² = 0.37 | | |
| By CEX | H2a | 0.22 | p < 0.01 (**) | Supported |
| By COE | H2b | 0.03 | p > 0.05 (ns) | Not Supported |
| By PER | H2c | 0.34 | p < 0.05 (*) | Supported |
| Effects on BIP | | R ² = 0.41 | | |
| By IPC | H3 | 0.38 | p < 0.01 (**) | Supported |
| By IPF | H4 | 0.43 | p < 0.001 (***) | Supported |
| Effects on BUB | | R ² = 0.67 | | |
| By BIP | H5 | 0.49 | p < 0.001 (***) | Supported |
| (BIP → BUB) × DMU | H6 | 0.19 | p < 0.05 (*) | Supported |

predictive relevance. To verify the model-fit, Standardized Root Mean Square Residual Error (SRMR) has been considered as a standard index. Its values have been estimated and it has been found that the SRMR values came out to be 0.062 for PLS and 0.034 for PLSc, both being less than the recommended highest value of 0.08 (Hu and Bentler, 1998). The results confirm that the model is in order. This procedure helped to compute path coefficients, R² values, and p-values for the different linkages. The results are shown in Table 7.

With all these inputs, the validated model is shown in Fig. 2.

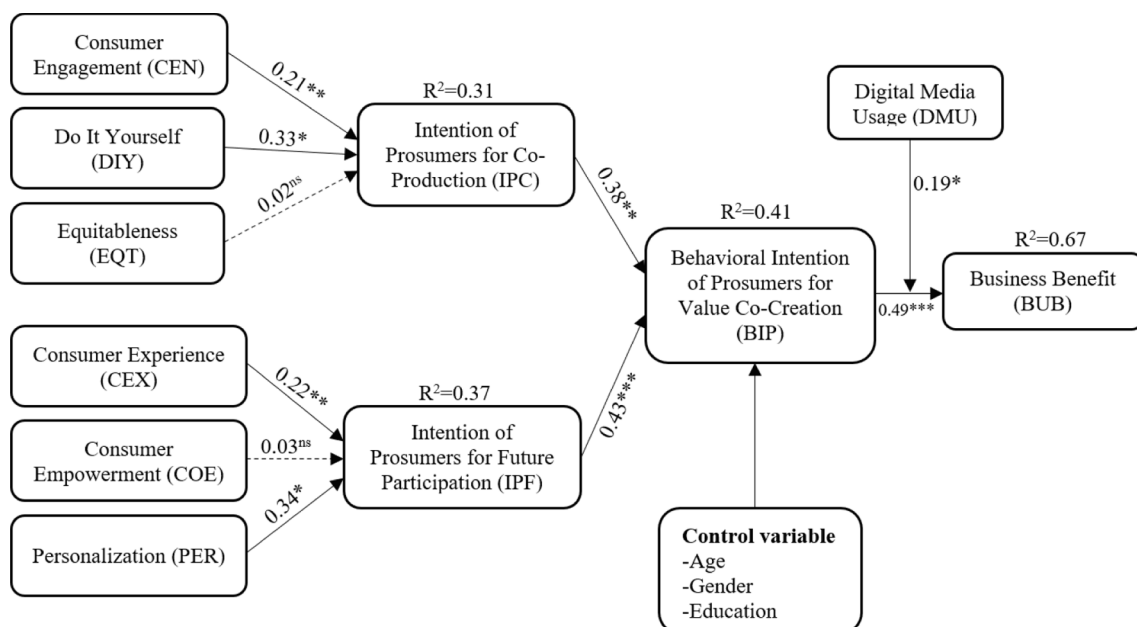
6.9. Summary of results

In this study 10 hypotheses have been formulated. Out of these 10 hypotheses, one hypothesis (H6) is concerned with moderating effects of

DMU on the linkage BIP → BUB (H5). The results highlight that CEN and DIY positively and significantly impact IPC (H1a and H1b) since the concerned path coefficients are 0.21 and 0.33 respectively with levels of significance as p < 0.01(**) and p < 0.05(*), respectively. It is also seen from the results that CEX and PER positively and significantly impact on IPF (H2a and H2c) since the path coefficients concerned are 0.22 and 0.34, respectively with levels of significance as p < 0.01(**) and p < 0.05(*), respectively. This study also shows that EQT and COE impact on IPC and on IPF (H1c and H2b) respectively insignificantly since the concerned path coefficients are 0.02 and 0.03, respectively with each having non-significance level p > 0.05 (ns). IPC and IPF both impact on BIP positively and significantly since the concerned path coefficients are 0.38 and 0.43, respectively with levels of significance as p < 0.01(**) and p < 0.001(***), respectively. The results also highlight that BIP impacts BUB (H5) significantly and positively since the concerned path coefficient is 0.49 with level of significance as p < 0.001(***). The effects of the moderator DMU on the linkage BIP → BUB (H5) is significant and positive as the concerned path coefficient is 0.19 with level of significance p < 0.05(*). So far as coefficients of determinant (R²) are concerned, the results demonstrate that CEN, DIY, and EQT could explain IPC to the tune of 31 % (R² = 0.31), whereas CEX, COE, and PER could explain IPF to the extent of 37 % (R² = 0.37). The results also highlight that IPC and IPF could jointly explain BIP to the tune of 41 % (R² = 0.41). The results also transpired that BUB could be explained by BIP to the extent of 67 % (R² = 0.67) which is the predictive power of the proposed theoretical model.

7. Discussion and conclusion

The present study has analyzed that CEN, DIY, and EQT impact IPC whereas the other three exogenous factors CEX, COE, and PER impact IPF. In the present research study, it has been demonstrated that IPC and IPF simultaneously impact BIP. From this study it appears that out of impacts of CEN, DIY, and EQT, the effects of DIY on IPC are the maximum (H1d) since among the three, the impact of DIY on IPC is the highest ($\beta = 0.33$). This validated hypothesis also received support from another study (Watson and Shove, 2008) wherein the authors examined the recursive relation amongst projects, products, and practices with the concept of DIY and showed that it derives better coproduction effects if the consumers are creatively as well as actively involved integrating and

**Fig. 2.** Validated model (SEM).

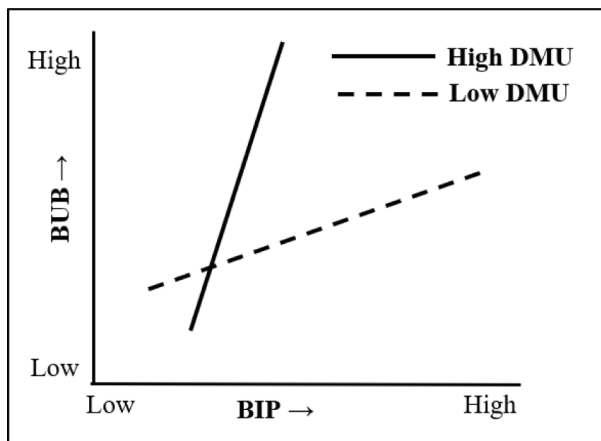


Fig. 3. Effects of DMU on H5.

transforming complex arrays of material goods. Also, the present study reveals that CEN positively and significantly impacts IPC (H1a). This signifies that more engagements with the firms' activities improve the relationship between the prosumers and the firms helping for better coproduction. This idea has received support from another study (Prahalad and Ramaswamy, 2004a) wherein that study indicated that relationship acts as a primary interface impacting better coproduction activities. It has also been observed that EQT has an insignificant impact on IPC (H1c) and as such this hypothesis was not supported. This result appears to have contradicted another study (Karpen et al., 2012). Such contradiction is presumably because still the firms possess some conservativeness to share more control in favor of consumers who contribute their active role in coproduction activities which is conceptualized as the sense of equitableness (EQT). This research study shows that CEX and PER positively and significantly impact IPF (H2a and H2c) which received support from other studies (Neuhofer et al., 2015; Wuenderlich et al., 2015). These two studies highlight that experience as well as personalization have effective impacts on future participation. However, the present study has shown that COE has an insignificant impact on IPF (H2b) contradicting the concept of earlier study (Zhang et al., 2018). This is because possibly the consumer empowerment (COE) attribute could not create a congenial and supportive environment to motivate the consumers to participate in these activities. The authors also argue that there might be another reason for not supporting these two hypotheses (H1c and H2b). Analysis of the feedback of the respondents helped to arrive at such results. In selecting the respondents, the attempts did not cover all the corners of India which might have contributed such results. Had it been possible to touch all the corners, the results might have been otherwise. The present study has shown that IPC and IPF significantly and positively impact BIP (H3 and H4) which received support from earlier studies (McColl-Kennedy et al., 2012; Zhang et al., 2018). These two hypotheses provided two significant outcomes that cocreation by prosumers are favorably affected not only by coproduction activities but also by the active participation of the prosumers. This study has also hypothesized that behavioral intention of the prosumers for cocreation brings in business benefits (H5) of a firm and such benefits are increased if supported by DMU (H6). Both these validated hypotheses have received support from earlier studies (Silver, 2009; Kostakis, 2019). The effects of High DMU and Low DMU on H5 have been interpreted here graphically as shown in Fig. 3. Here Fig. 3 highlights the moderating effects of DMU on the linkage BIP → BUB (H5).

In Fig. 3, continuous and dotted lines represent the effects of High DMU and Low DMU on the linkage H5 respectively. With the increase of BIP, the rate of increase of BUB is more for the effects of High DMU compared to the effects of Low DMU on H5 since the gradient of the continuous line is more than the gradient of the dotted line. The gradient

of a straight line is interpreted as the trigonometrical tangent of the angle which the straight line makes with the positive direction of horizontal axis.

7.1. Theoretical contributions

The present study has provided several theoretical contributions. First, this research study is an early attempt to identify the salient factors which could impact prosumers' intention to be involved in coproduction activities as well as intention of the prosumers' participation in business activities. This study has found what prosumers contribute to the products or services available in the markets. This work has demonstrated that prosumers function as creative actors designing their own service experience by doing things by themselves (DIY) and do not act as passive responders responding to the pre-existing offers from the firms. This study has projected that the role of the prosumers is critical in production activities as well as in service-related activities justifying the opinion and vision: "instead of seeing the business as a flow of material to which value is continuously added and ending with the customers, we now see business starting from the customer and following to the company" (Normann, 2001, p.21). Second, this study has tried to provide a dramatic change in the idea that marketing scenario should not be construed to be confined on the target to profit by only improving product quality with reduction of cost of production. However, this study has suggested that active participation of the prosumers in businesses and coproduction activities will effectively cocreate value of products and services prompting business benefit of the firms. Third, this study may be considered as one of the first attempts for significantly exploring the substantial contribution of the control variables associated with several individual-centric behavioral attributes mainly of the consumers to realize the concept of presumption through value cocreation activities in the prosumer-oriented business landscape. Fourth, when viewed through theoretical lenses, it is necessary to note that the present research study has lent inputs from different theories and did not blindly follow one theory to develop the theoretical model. Not only that, by considering the moderating effects of digital media usage, the theoretical model has taken an attractive shape achieving such a respectful explanative power. This is construed to be a unique theoretical contribution of this study. Fifth, from the presumption perspective, this research has shown that prosumers' coproduction intention impacts positively and significantly on cocreation activities. This is claimed to have opened options for more studies on the dependence of coproduction activities to improve cocreation prompting improvement of business value. Projecting that cocreation impacts business value in the prosumer-related business activities, the present work has provided much food for reflection to the future researchers a new mechanism for achieving better profitability of a firm. Sixth, a study of Halassi et al. (2018) has demonstrated how the salient factors of the UTAUT2 model (Venkatesh et al., 2012) along with Do-it-Yourself (DIY) business models could impact behavioral intention of the prosumers to bring a supply chain revolution in 3D printing. The idea of that study has been extended in this work to analyze how, apart from DIY, other factors like consumers' experience, equitableness, involvement, empowerment, and personalization could impact prosumers' intention to coproduce, as well as future participation. The latter could influence the behavioral intention of prosumers for value cocreation translating into improved business benefits for the firm supported by digital media usage. This idea adds value to the literature that analyzed the intention of the prosumers to be involved in business activities under different perspectives.

7.2. Implications for practice

This research work provides practical implications for marketing managers to achieve enhanced business benefit by improving cocreation activities. First, this study has pointed out that marketing management process has undergone a paradigm shift by diverting its focus from

product-related activities to prosumer-oriented activities by the help of importing a novel concept of cocreation (Prahalad and Ramaswamy, 2004a, 2004b). Second, marketing managers need to think that days have come when consumers should not be conceptualized as merely passive receivers of several marketing messages regarding different information of the products and services. The marketing managers should arrange for increasing coproduction activities with the consumers to improve value cocreation. Third, policy makers are required to arrange for getting the consumers more involved in different business activities of the firms by providing the consumers ample opportunities so that they may not feel any impediment in sharing their expertise, ideas, and other congenial inputs to the firms. By such contributions of the consumers to the firms, there will be enhancements of cocreation activities helping the firms to achieve better business benefit. Fourth, managers must focus on the prosumers' activities in the business process and practices of the firms through exchange of their knowledge ensuring better value cocreation that would ensure an increase of profitability of the firms. In addition, managers should focus on the business activities of the firms by arranging improved relationship between the prosumers and the firms for enhancing coproduction activities. Managers must ensure active participation of the prosumers in the firms' business activities for improving value cocreation. For this, the managers must keep in close contact with the prosumers so that any unwanted interruption in the interference of the prosumers in the firms' activities is forthwith removed. It will be the duties of the employees of the firms to educate the consumers to take active role as prosumers by appraising them that their effective inputs to the firms will derive benefits both to the firms and the consumers through enhancing value cocreation. The present research work has demonstrated that equitableness has an insignificant impact on coproduction activities. Equitableness prescribes firms' willingness to allow the consumers to have power of controlling the business process and practices of the firms that would help eventually to cocreate values. In this context, it will be part of the managers' duties to create a congenial, conducive, and supportive cordial atmosphere in the firms by expressing explicit willingness of the firms to share control with the prosumers. This will help prosumers to realize that they are an important part of the firms' business ecosystem and then the coproduction activities will be improved affecting value cocreation which, in turn, improves business value of the firms.

7.3. Limitations of study and future research scope

This study has arrived at a finding depending on cross-sectional data. This gives rise to causality defects in the relation between the constructs. It creates problems of endogeneity. It is suggested that to remove these defects, future researchers may conduct longitudinal survey with econometric analysis to avoid the defects of endogeneity. This study is based on the finding having inputs of 349 usable respondents. This should not be considered as a representative sample. Future researchers may conduct surveys considering inputs of larger samples to portray more holistically the results. This study depends on the inputs of the respondents from India making this study country specific. The work therefore lacks universal applicability. Future researchers may consider inputs of respondents dispersed across the globe to put the results in a generalized form. More specifically, the study might control for cultural differences using for instance the Hofstede model (Hofstede and Bond, 1984). The cocreation activities and the concept of prosumers are still in the rudimentary stage in India. Hence, the inputs have been obtained in this study from the non-adopters. When the results will be applied to the adopters, proper precautions may be taken by including or excluding (as the case may be) several boundary conditions. This is left for future researchers to nurture. Future research might also control for the device deployed when using digital media, as devices and online channels have been found to play a differentiated role (Kim, Lee, & Mariani, 2021). The explanative power of the model is 67 %. Future researchers may consider if by inclusion of more boundary conditions and other

Table A1
Summary of Questionnaire.

| Items | Source | Statements | Response [SD][D][N] [A][SA] |
|-------|---|--|-----------------------------------|
| CEN1 | Sawhney et al., 2005; Nambison, 2009; Brodie et al., 2011 | Involvement of customers is necessary for developing better products. | [1][2][3] [4][5] |
| CEN2 | Tyler, 1978; Patterson et al., 2006; Hollebeck et al., 2014 | Better association with the customers helps with customization of the products. | [1][2][3] [4][5] |
| CEN3 | Morreale, 2014; Andrews and Ritzer, 2018 | The coproduction process helps in developing more customer centric products. | [1][2][3] [4][5] |
| DIY1 | Wolf and McQuitty, 2011 | Customers are encouraged to design and develop their own products. | [1][2][3] [4][5] |
| DIY2 | Triggs, 2006; Pitt et al., 2006 | Incorporation of customers' inputs while developing the products make the products more superior. | [1][2][3] [4][5] |
| DIY3 | Kotler, 1986 | It is more efficient if customers are given options to customize their own products. | [1][2][3] [4][5] |
| EQT1 | Hoyer et al., 2010; Fisher and Smith, 2011 | Equal opportunity is to be given to customers and firms to develop products. | [1][2][3] [4][5] |
| EQT2 | Prahalad and Ramaswamy, 2002 | Customers should be entitled to get equal opportunity to cocreate products. | [1][2][3] [4][5] |
| EQT3 | Heiko et al., 2010 | Equitable opportunity to the customers for cocreation helps in coproduction process. | [1][2][3] [4][5] |
| EQT4 | Mele, 2011; Karpen et al., 2012 | Customers should be incentivized for cocreating products along with the firms. | [1][2][3] [4][5] |
| CEX1 | Ballantyne and Varey, 2008; DesAutels, 2011 | Customer experience is an important aspect when developing any new products. | [1][2][3] [4][5] |
| CEX2 | Edvardsson et al., 2011; Heinonen, and Strandvik, 2015 | Better customer experience will motivate prosumers for future participation in cocreating activities. | [1][2][3] [4][5] |
| CEX3 | Pantano and Timmermans, 2014; Homburg et al., 2017 | Cocreation activities help in realizing better customer experience. | [1][2][3] [4][5] |
| COE1 | Neghina et al., 2017 | Participation of customers during product development provides better empowerment to the customers. | [1][2][3] [4][5] |
| COE2 | Wigfield and Eccles, 2000 | Because of the creation process, customers' opinion can be considered during product development activities. | [1][2][3] [4][5] |
| COE3 | Busser and Shulga, 2019 | The creation process helps customers involving in decision making process during product development activities. | [1][2][3] [4][5] |
| COE4 | Hoyer et al., 2010 | If customers are more empowered in decision making process while developing the products, they will be more encouraged in developing products in future. | [1][2][3] [4][5] |
| PER1 | Fox, 2018 | Cocreation helps in personalization of the product. | [1][2][3] [4][5] |
| PER2 | Cova and Salle, 2008; DesAutels, 2011 | Personalization process encourages the customers for future participation in product development. | [1][2][3] [4][5] |
| PER3 | Sandström et al., 2008; Ritzer, 2014 | Product personalization helps better realization of product value. | [1][2][3] [4][5] |
| PER4 | Kotler, 1986; Piller et al., 2004 | Customized products are preferred by the customers. | [1][2][3] [4][5] |

(continued on next page)

Table A1 (continued)

| Items | Source | Statements | Response [SD][D][N] [A][SA] |
|-------|--|---|-----------------------------------|
| IPC1 | Achrol and Kotler, 2012 | Coproduction process helps in better product acceptability to the prosumers. | [1][2][3] [4][5] |
| IPC2 | Hoyer et al., 2010; Prahalad and Ramaswamy, 2004b | Prosumer involvement in the production process helps in the product designing process. | [1][2][3] [4][5] |
| IPC3 | Ballantyne and Varey, 2008 | Coproduction activities encourage customers to cocreate products for the firms. | [1][2][3] [4][5] |
| IPC4 | Zhang et al., 2018 | Profit sharing with customers will encourage customers to participate in coproduction activities. | [1][2][3] [4][5] |
| IPF1 | Dey et al., 2016 | Participation of customers is essential when developing any product or services. | [1][2][3] [4][5] |
| IPF2 | Prahalad and Ramaswamy, 2004a; Vargo and Lusch, 2016 | Participation in co-creation activities provides options for prosumers to personalize the product. | [1][2][3] [4][5] |
| IPF3 | Tu et al., 2018 | Customer opinion is important when developing any future product or services. | [1][2][3] [4][5] |
| IPF4 | offler, 1980; France et al, 2018 | Customer participation while product development helps in value co-creation process. | [1][2][3] [4][5] |
| BIP1 | Jayashankar et al., 2019 | Cocreation activities help in the promotional process. | [1][2][3] [4][5] |
| BIP2 | Prahalad and Ramaswamy, 2004b | Cocreation activities add value to the product development process. | [1][2][3] [4][5] |
| BIP3 | D'Andrea et al., 2019 | Cocreation activities help to develop a good impression on all the potential customers. | [1][2][3] [4][5] |
| BIP4 | Yu et al., 2020 | Prosumers' cocreation activities help the product to become more acceptable to the other customers. | [1][2][3] [4][5] |
| BUB1 | Saha et al., 2020; Silver, 2009 | Involvement of prosumers helps the firm to earn better business profit. | [1][2][3] [4][5] |
| BUB2 | Coulton, 2011; Arvidsson and Colleoni, 2012 | Prosumers help the firm to become more competitive. | [1][2][3] [4][5] |
| BUB3 | Metz, 2011; Singh and Sonnenburg, 2012 | Usage of digital media in cocreation activities makes the firm become more innovative. | [1][2][3] [4][5] |

SD = Strongly Disagree; D = Disagree; N = Neither agree nor disagree; A = Agree; SA = Strongly Agree.

constructs, the explanatory power of the model may be improved.

CRedit authorship contribution statement

Sheshadri Chatterjee: Validation, Software, Methodology, Formal analysis, Data curation, Conceptualization, Investigation, Writing – original draft, Writing – review & editing. **Marcello Mariani:** Supervision, Resources, Methodology, Conceptualization, Writing – original draft, Writing – review & editing. **Samuel Fosso Wamba:** Validation, Writing – original draft, Writing – review & editing.

Declaration of Competing Interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

Acknowledgement

None

Appendix

See Table A1.

References

- Achrol, R., & Kotler, P. (2012). Frontiers of the marketing paradigm in the third millennium. *Journal of the Academy of Marketing Science*, 40(1), 35–52.
- Andrews, D. L., & Ritzer, G. (2018). Sport and prosumption. *Journal of Consumer Culture*, 18(2), 356–373.
- Armstrong, J. S., & Overton, T. S. (1977). Estimating nonresponse bias in mail surveys. *Journal of Marketing Research*, 14(3), 396–402.
- Arvidsson, A., & Colleoni, E. (2012). Value in informational capitalism and on the internet. *Information Society*, 28(3), 135–150.
- Ballantyne, D., & Varey, R. J. (2008). The service-dominant logic and the future of marketing. *Journal of the Academy of Marketing Science*, 36(1), 11–14.
- Basile, G., Chaudhuri, R., & Vrontis, D. (2021). Digital transformation and entrepreneurship process in SMEs of India: A moderating role of adoption of AI-CRM capability and strategic planning. *Journal of Strategy and Management*, 15(3), 416–433.
- Bazi, S., Filieri, R., & Gorton, M. (2020). Customers' motivation to engage with luxury brands on social media. *Journal of Business Research*, 112, 223–235.
- Bhattacharjee, K. K., Tsai, C. W., & Agrawal, A. K. (2021). Impact of peer influence and government support for successful adoption of technology for vocational education: A quantitative study using PLS-SEM technique. *Journal of Quality and Quantity*, 55(1), 2041–2064.
- Brodie, R., Linda, H., Ana, I., & Biljana, J. (2011). Customer Engagement: Conceptual Domain, Fundamental Propositions & Implications for Research in Service Marketing. *Journal of Service Research*, 14(3), 252–271.
- Busser, J., & Shulga, L. (2019). Role of commercial friendship, initiation and co-creation types. *Journal of Service Theory and Practice*, 29(4), 488–512.
- Chan, H., Zeng, K. J., & Yang, M. X. (2022). Review platforms as prosumer communities: Theory, practices and implications. *European Journal of Marketing*, 56(10), 2698–2720.
- Chandler, J., & Chen, S. (2015). Prosumer motivations in service experiences. *Journal of Service Theory and Practice*, 25(2), 220–239.
- Chatterjee, S. (2019). Impact of AI regulation on intention to use robots: From citizens and government perspective. *International Journal of Intelligent Unmanned Systems*, 8(2), 97–114.
- Chatterjee, S., Rana, N., & Dwivedi, Y.K. (2021). How does business analytics contribute to organizational performance and business value? A resource-based view. *Information Technology & People*. In Press. <https://doi.org/10.1108/ITP-08-2020-0603>.
- Chatterjee, S., Rana, N. P., & Dwivedi, Y. K. (2021). Assessing Consumers' Co-production and Future Participation On Value Co-creation and Business Benefit: An F-P-C-B Model Perspective. *Information Systems Frontiers*, 24, 945–964.
- Chaudhuri, R. (2022). Supply chain sustainability during turbulent environment: Examining the role of firm capabilities and government regulation. *Operations Management Research*, 15(1), 1081–1095.
- Chaudhuri, R., & Vrontis, D. (2021). Knowledge sharing in international markets for product and process innovation: Moderating role of firm's absorptive capacity. *International Marketing Review*, 39(3), 706–733.
- Chepurna, M., & Rialp Criado, J. (2018). Identification of barriers to co-create on-line: The perspectives of customers and companies. *Journal of Research in Interactive Marketing*, 12(4), 452–471.
- Chin, W. W. (2010). *How to write up and report PLS analyses*. In Editor: Wynne W. Chin Handbook of partial least squares (pp. 655–690). Springer.
- Cohen, J. (1988). *Statistical power analysis for the behavioral sciences*, 2nd. NJ, Erlbaum, USA: Hillsdale.
- Coulton, M. (2011). *Consumer word of mouth and the virtual community*. *Proceedings of the Online Conference on Networks and Communities*. Accessed on 6 August 2022 from <http://networkconference.netstudies.org/2011/04/consumer-word-of-mouth-and-the-virtualcommunity/>.
- Cova, B., & Salle, R. (2008). Marketing solutions in accordance with the SD logic: Co-creating value with customer network actors. *Industrial Marketing Management*, 37(3), 270–277.
- D'Ambra, J., Akter, S., & Mariani, M. (2022). Digital transformation of higher education in Australia: Understanding affordance dynamics in E-Textbook engagement and use. *Journal of Business Research*, 149, 283–295.
- D'Andrea, F., Rigon, F., Almeida, A., Filomena, B., & Slongo, L. (2019). Co-creation: A B2C and B2B comparative analysis. *Marketing Intelligence & Planning*, 37(6), 674–688.
- Deb, M., & David, E. L. (2014). An empirical examination of customers' adoption of m-banking in India. *Journal of Marketing Intelligence & Planning*, 32(4), 475–494.
- DesAutels, P. (2011). UGIS: understanding the nature of user-generated information systems. *Business Horizons*, 54(3), 185–192.
- Dey, B. L., Pandit, A., Saren, M., Bhowmick, S., & Woodruff-Burton, H. (2016). Co-creation of value at the bottom of the pyramid: analysing Bangladeshi farmers' use of mobile telephony. *Journal of Retailing and Consumer Service*, 29, 40–48.
- Dwivedi, Y. K., Kapoor, K. K., & Chen, H. (2015). Social media marketing and advertising. *The Marketing Review*, 15(3), 289–309.
- Dwivedi, Y. K., Rana, N. P., Slade, E. L., Singh, N., & Kizgin, H. (2020). Editorial introduction: Advances in theory and practice of digital marketing. *Journal of Retailing and Consumer Services*, 53, Article 101909.

- Dwivedi, Y. K., Hughes, L., Baabdullah, A. M., Ribeiro-Navarrete, S., Giannakis, M., Al-Debei, M. M., & Wamba, S. F. (2022). Metaverse beyond the hype: Multidisciplinary perspectives on emerging challenges, opportunities, and agenda for research, practice and policy. *International Journal of Information Management*, 66(1), Article 102542.
- Dwivedi, Y. K., Kshetri, N., Hughes, L., Slade, E. L., Jeyaraj, A., Kar, A. K., ... Wright, R. (2023). So what if ChatGPT wrote it? Multidisciplinary perspectives on opportunities, challenges and implications of generative conversational AI for research, practice and policy. *International Journal of Information Management*, 71, 102642.
- Eckhardt, G. M., Houston, M. B., Jiang, B. J., Lamberton, C., Rindfleisch, A., & Zervas, G. (2019). Marketing in the sharing economy. *Journal of Marketing*, 83(5), 5–27.
- Edvardsson, B., Ng, G., Min, C. Z., Firth, R., & Yi, D. (2011). Does service-dominant design result in a better service system? *Journal of Service Management*, 22(4), 540–556.
- Ek Styvén, M., & Mariani, M. M. (2020). Understanding the intention to buy secondhand clothing on sharing economy platforms: The influence of sustainability, distance from the consumption system, and economic motivations. *Psychology & Marketing*, 37(5), 724–739.
- Filieri, R. (2013). Consumer co-creation and new product development: A case study in the food industry. *Marketing Intelligence & Planning*, 31(1), 40–53.
- Filieri, R., McLeay, F., Tsui, B., & Lin, Z. (2018). Consumer perceptions of information helpfulness and determinants of purchase intention in online consumer reviews of services. *Information & Management*, 55(8), 956–970.
- Fisher, D., & Smith, S. (2011). Cocreation is chaotic: What it means for marketing when no one has control. *Marketing Theory*, 11(3), 325–350.
- Fornell, C., & Larcker, D. F. (1981). Evaluating structural equation models with unobservable variables and measurement error. *Journal of Marketing Research*, 18(1), 39–50.
- Fox, S. (2018). Domesticating artificial intelligence: Expanding human self-expression through applications of artificial intelligence in prosumption. *Journal of Consumer Culture*, 18(1), 169–183.
- France, C., Grace, D., Merrilees, B., & Miller, D. (2018). Customer brand co-creation behavior: Conceptualization and empirical validation. *Marketing Intelligence & Planning*, 36(3), 334–348.
- Galvagno, M., & Dalli, D. (2014). Theory of Value Co-creation. A Systematic Literature Review. *Managing Service Quality*, 24(6), 643–683.
- Geisser, S. (1975). The predictive sample reuse method with applications. *Journal of the American Statistical Association*, 70(350), 320–328.
- Grönroos, C. (2008). Service logic revisited: Who creates value? and who co-creates? *European Business Review*, 20(4), 298–314.
- Grönroos, C., & Voima, P. (2013). Critical service logic: making sense of value creation and co-creation. *Journal of the Academy of Marketing Science*, 41(2), 133–150.
- Guide Jr, V. D. R., & Ketokivi, M. (2015). Notes from the Editors: Redefining some methodological criteria for the journal. *Journal of Operations Management*, 37(1), 5–8.
- Hair, J. F., Ringle, C. M., & Sarstedt, M. (2011). PLS-SEM: Indeed, a silver bullet. *Journal of Marketing Theory and Practice*, 19(2), 139–152.
- Hair, J. F., Hollingsworth, C. L., Randolph, A. B., & Chong, A. Y. L. (2017). An updated and expanded assessment of PLS-SEM in information systems research. *Industrial Management & Data Systems*, 117(3), 442–458.
- Halassi, S., Semeijn, J., & Kiratli, N. (2019). From consumer to prosumer: A supply chain revolution in 3D printing. *International Journal of Physical Distribution and Logistics Management*, 49(2), 200–216.
- Hayes, A. F. (2013). *Introduction to mediation, moderation, and conditional process analysis: A regression-based approach*. New York, NY: Guilford Press.
- Heiko, G., Mikael, J., & Bo, E. (2010). Value co-creation as a determinant of success in public transport services: A study of the Swiss federal railway operator (SBB). *Managing Service Quality*, 20(6), 511–530.
- Heinonen, K., & Strandvik, T. (2015). Customer-dominant logic: Foundations and implications. *Journal of Services Marketing*, 29(6/7), 472–484.
- Henseler, J., Dijkstra, T. K., Sarstedt, M., Ringle, C. M., Diamantopoulos, A., Straub, D. W., & Calantone, R. J. (2014). Common beliefs and reality about PLS: Comments on Rönkkö and Evermann. *Organizational Research Methods*, 17(2), 182–209.
- Hofstede, G., & Bond, M. H. (1984). Hofstede's culture dimensions: An independent validation using Rokeach's value survey. *Journal of cross-cultural psychology*, 15(4), 417–433.
- Hollebeek, L. D., Glynn, M. S., & Brodie, R. J. (2014). Consumer Brand Engagement in Social Media: Conceptualization, Scale Development and Validation. *Journal of Interactive Marketing*, 28(2), 149–165.
- Homburg, C., Jozic, D., & Kuehn, C. (2017). Customer experience management: Toward implementing an evolving marketing concept. *Journal of the Academy of Marketing Science*, 45(3), 377–401.
- Hoyer, W. D., Chandy, R., Dorotic, M., Krafft, M., & Singh, S. S. (2010). Consumer cocreation in new product development. *Journal of Service Research*, 13(3), 283–296.
- Hu, L. T., & Bentler, P. M. (1998). Cutoff criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives. *Structural Equation Modeling: A Multidisciplinary Journal*, 6(1), 1–55.
- Humphreys, A., & Grayson, K. (2008). The Intersecting Roles of Consumer and Producer: A Critical Perspective on Co-Production. *Co-creation and Prosumption. Sociology Compass*, 2(3), 963–980.
- Jansen, S., & Pieters, M. (2017). *The 7 Principles of Complete Co-creation*. Amsterdam: BIS Publishers. ISBN 978-90-6369-473-9.
- Jayashankar, P., Johnston, W., Nilakanta, S., & Burres, R. (2019). Co-creation of value-in-use through big data technology- a B2B agricultural perspective. *Journal of Business & Industrial Marketing*, 35(3), 508–623.
- Jenkins, H., Clinton, K., Puroshotma, R., Robinson, A., & Weigel, M. (2006). *Confronting the challenges of participatory culture: Media education for the 21st century*. The MacArthur Foundation.
- Jose Planells, A. (2017). Video games and the crowdfunding ideology: From the gamer-buyer to the prosumer-investor. *Journal of Consumer Culture*, 17(3), 620–628.
- Karpen, I. O., Bove, L. L., & Lukas, B. A. (2012). Linking service dominant logic and strategic business practice: A conceptual model of a service-dominant orientation. *Journal of Service Research*, 15(1), 21–38.
- Ketokivi, M. A., & Schroeder, R. G. (2004). Perceptual measures of performance: Fact or fiction? *Journal of Operations Management*, 22(3), 247–264.
- Kim, J. M., Lee, E., & Mariani, M. M. (2021). The influence of launching mobile channels on online customer reviews. *Journal of Business Research*, 137, 366–378.
- Kim, J. M., Park, K. K. C., & Mariani, M. M. (2023). Do online review readers react differently when exposed to credible versus fake online reviews? *Journal of Business Research*, 154, 113377.
- Kock, N. (2015). *WarpPLS 5.0 User Manual*. Laredo, TX: ScriptWarp Systems.
- Kostakis, V. (2019). How to Reap the Benefits of the “Digital Revolution”? Modularity and the Commons. *The Estonian Journal of Administrative Culture and Digital Governance*, 20(1), 4–19.
- Kotler, P. (1986). The prosumer movement - a new challenge for marketers. *Advances in Consumer Research*, 13, 510–513.
- Lang, B., Dolan, R., Kemper, J., & Northey, G. (2021). Prosumers in times of crisis: Definition, archetypes and implications. *Journal of Service Management*, 32(2), 176–189.
- Lehrer, M., Ordanini, A., De Fillippi, R., & Miozzo, M. (2012). Challenging the orthodoxy of value co-creation theory: A contingent view of co-production in design-intensive business services. *European Management Journal*, 30(6), 499–509.
- Lin, Z., Chen, Y., & Filieri, R. (2017). Resident-tourist value co-creation: The role of residents' perceived tourism impacts and life satisfaction. *Tourism Management*, 61, 436–442.
- Lindell, M. K., & Whitney, D. J. (2001). Accounting for common method variance in cross-sectional research designs. *Journal of Applied Psychology*, 86(1), 114–121.
- Lowry, P. B., & Gaskin, J. (2014). Partial least squares (PLS) structural equation modeling (SEM) for building and testing behavioral causal theory: When to choose it and how to use it. *IEEE Transactions on Professional Communication*, 57(2), 123–146.
- Mariani, M. M., & Borghi, M. (2020). Online review helpfulness and firms' financial performance: An empirical study in a service industry. *International Journal of Electronic Commerce*, 24(4), 421–449.
- Mariani, M., & Borghi, M. (2021). Environmental discourse in hotel online reviews: a big data analysis. *Journal of Sustainable Tourism*, 29(5), 829–848.
- Mariani, M. M., & Nambisan, S. (2021). Innovation analytics and digital innovation experimentation: the rise of research-driven online review platforms. *Technological Forecasting and Social Change*, 172, 121009.
- Mariani, M., & Predvoditeleva, M. (2019). How do online reviewers' cultural traits and perceived experience influence hotel online ratings? An empirical analysis of the Muscovite hotel sector. *International Journal of Contemporary Hospitality Management*, 31(12), 4543–4573.
- Mariani, M. M., & Wamba, S. F. (2020). Exploring how consumer goods companies innovate in the digital age: The role of big data analytics companies. *Journal of Business Research*, 121, 338–352.
- Mariani, M. M., Mura, M., & Di Felice, M. (2018). The determinants of Facebook social engagement for national tourism organizations' Facebook pages: A quantitative approach. *Journal of destination marketing & management*, 8, 312–325.
- Mariani, M. M., Styven, M. E., & Natarajan, R. (2021). Social comparison orientation and frequency: A study on international travel bloggers. *Journal of Business Research*, 123, 232–240.
- Mariani, M. M., Hashemi, N., & Wirtz, J. (2023). Artificial intelligence empowered conversational agents: A systematic literature review and research agenda. *Journal of Business Research*, 161, 113838.
- Mariani, M. M., Machado, I., Magrelli, V., & Dwivedi, Y. K. (2023). Artificial intelligence in innovation research: A systematic review, conceptual framework, and future research directions. *Technovation*, 122, 102623.
- Martindale, A., & McKinney, E. (2020). Why do they sew? Women's motivations to sew clothing for themselves. *Clothing and Textiles Research Journal*, 38(1), 32–48.
- McColl-Kennedy, J. R., Vargo, S. L., Dagger, T. S., Sweeney, J. C., & van Kasteren, Y. (2012). Health care customer value cocreation practice styles. *Journal of Service Research*, 15(4), 370–389.
- Mele, C. (2011). Conflicts and value co-creation in project networks. *Industrial Marketing Management*, 40(8), 1377–1385.
- Metz, A. (2011). *The social customer: How brands can use social CRM to acquire, monetize, and retain fans, friends, and followers*. New York: NY, McGraw Hill Publication.
- Mishra, A., Maheswarappa, S. S., Maity, M., & Samu, S. (2018). Adolescent's eWOM intentions: An investigation into the roles of peers, the Internet and gender. *Journal of Business Research*, 86(5), 394–405.
- Morreale, J. (2014). From homemade to store bought: Annoying orange and the professionalization of YouTube. *Journal of Consumer Culture*, 14(1), 113–128.
- Nambisan, S., & Robert, A. B. (2009). Virtual Customer Environment: Testing a Model of Voluntary Participation in Value Co-Creation Activities. *Journal of Production Management*, 26(4), 388–406.
- Neghina, C., Bloemer, J., van Birgelen, M., & Caniëls, M. C. (2017). Consumer motives and willingness to co-create in professional and generic services. *Journal of Service Management*, 28(1), 157–181.

- Neuhofer, B., Buhalis, D., & Ladkin, A. (2015). Smart technologies for personalized experiences: A case study in the hospitality domain. *Electronic Market*, 25(3), 243–254.
- Nguyen, B. (2021). Value co-creation and social media at bottom of pyramid (BOP). *The Bottom Line*, 34(2), 101–123.
- Nitzl, C., Roldan, J. L., & Cepeda, G. (2016). Mediation analysis in partial least squares path modeling: Helping researchers discuss more sophisticated models. *Industrial Management and Data Systems*, 116(9), 1849–1864.
- Niu, N., Wang, C. L., Yin, Y., & Niu, Y. (2016). How do destination management organization-led postings facilitate word-of-mouth communications in online tourist communities? A content analysis of China's 5A-class tourist resort websites. *Journal of Travel & Tourism Marketing*, 33(7), 929–948.
- Normann, R. (2001). *Reframing Business: When the Map Changes the Landscape*. West Sussex, UK: John Wiley & Sons Ltd.
- Oertzen, A., Odekerken-Schröder, G., Brax, S., & Mager, B. (2018). Co-creating services—conceptual clarification, forms and outcomes. *Journal of Service Management*, 29(4), 641–679.
- Ostrom, A. L., Bitner, M. J., Brown, S. W., Burkhard, K. A., Goul, M., Smith-Daniels, V., & Rabinovich, E. (2010). Moving forward and making a difference: Research priorities for the science of service. *Journal of Service Research*, 13(1), 4–36.
- Pantano, E., & Timmermans, H. (2014). What is smart for retailing? *Procedia Environmental Sciences*, 22(1), 101–107.
- Parker, G. G., Van Alstyne, M. W., & Choudary, S. P. (2016). *Platform revolution: How networked are transforming the economy—And how to make them work for you*. New York: W.W. Norton & Co., Publication.
- Patterson, Paul G., Ting Yu, & Ko De Ruyter (2006). Understanding Customer Engagement in Services. in *ANZMAC 2006: Advancing Theory, Maintaining Relevance, Proceedings*, 4-6 December 2006, Brisbane, Australia.
- Piller, F. T., Moeslein, K., & Stotko, C. M. (2004). Does mass customization pay? An economic approach to evaluate customer integration. *Production Planning & Control*, 15(4), 435–444.
- Pitt, L. F., Watson, R. T., Berthon, P., Wynn, D., & Zinkhan, G. (2006). The penguin's window: Corporate brands from an open-source perspective. *Journal of the Academy of Marketing Science*, 34(2), 115–127.
- Podsakoff, P. M., MacKenzie, S. B., Lee, J. Y., & Podsakoff, N. P. (2003). Common method biases in behavioral research: A critical review of the literature and recommended remedies. *Journal of Applied Psychology*, 88(5), 879–903.
- Porter, C. E., & Donthu, N. (2006). Using the technology acceptance model to explain how attitudes determine internet usage: The role of perceived access barriers and demographics. *Journal of Business Research*, 59(9), 999–1007.
- Prahalad, C. K., & Ramaswamy, V. (2002). *The co-creation connection*. *Strategy and Business*, 27(1), 50–61.
- Prahalad, C. K., & Ramaswamy, V. (2004a). Co-creating unique value with customers. *Strategy & Leadership*, 32(3), 4–9.
- Prahalad, C. K., & Ramaswamy, V. (2004b). Co-creation experiences: The next practice in value creation. *Journal of Interactive Marketing*, 18(3), 5–14.
- Ranjan, K. R., & Read, S. (2016). Value co-creation: Concept and measurement. *Journal of the Academy of Marketing Science*, 44(3), 290–315.
- Rigdon, E. E., Sarstedt, M., & Ringle, M. (2017). On comparing results from CB-SEM and PLS-SEM: Five perspectives and five recommendations. *Marketing ZFP*, 39(3), 4–16.
- Ritzer, G. (2014). Prosumption: Evolution, revolution, or eternal return of the same? *Journal of Consumer Culture*, 14(1), 3–24.
- Saarijarvi, H., Kannan, P. K., & Kuusela, H. (2013). Value co-creation: Theoretical approaches and practical implications. *European Business Review*, 25(1), 6–19.
- Saha, V., Mani, V., & Goyal, P. (2020). Emerging trends in the literature of value co-creation: A bibliometric analysis. *Benchmarking: An International Journal*, 27(3), 981–1002.
- Sandström, S., Edvardsson, B., Kristensson, P., & Magnusson, P. (2008). Value in use through service experience. *Managing Service Quality*, 18(2), 112–126.
- Sarstedt, M., Ringle, C. M., & Hair, J. F. (2017). Partial least squares structural equation modeling. In C. Homburg, M. Klarmann, & A. Vomberg (Eds.), *Handbook of Market Research* (pp. 1–40). Springer International Publishing.
- Sawhney, M., Gianmario, V., & Prandelli, E. (2005). Collaborating to Create: The Internet as a Platform for Customer Engagement in Product Innovation. *Journal of Interactive Marketing*, 19(4), 4–17.
- Sharma, A., Rana, N.P., Khorana, S., & Mikalef, P. (2021). Assessing Organizational Users' Intentions and Behavior to AI Integrated CRM Systems: a Meta-UTAUT Approach. *Information Systems Frontiers*. In Press. <https://doi.org/10.1007/s10796-021-10181-1>.
- Sharma, A., Dwivedi, R., Mariani, M. M., & Islam, T. (2022). Investigating the effect of advertising irritation on digital advertising effectiveness: A moderated mediation model. *Technological Forecasting and Social Change*, 180, 121731.
- Shen, L., Zhu, Y., Li, C., & Shah, S. H. H. (2021). How users' perceived prosumption activities influence co-creation experiences and co-creation intentions? *Kybernetes*, In Press. <https://doi.org/10.1108/K-07-2021-0556>
- Sheshadri, C. (2019). Influence of IoT policy on Quality of Life: From Government and Citizens' perspective. *International Journal of Electronic Government Research*, 15(2), 19–38.
- Sheshadri, C. (2020). Antecedents of phubbing: From technological and psychological perspectives. *Journal of Systems and Information Technology*, 22(2), 161–178.
- Silver, D. (2009). *The social networking business plan*. Hoboken, N.J: John Wiley and Sons.
- Singh, S., & Sonnenburg, S. (2012). Brand performances in social media. *Journal of Interactive Marketing*, 26(4), 189–197.
- Stone, M. (1974). Cross validity choice and assessment of statistical predictions. *Journal of the Royal Statistical Society*, 36(2), 111–147.
- Styvén, M. E., Mariani, M. M., & Strandberg, C. (2020). This is my hometown! The role of place attachment, congruity, and self-expressiveness on residents' intention to share a place brand message online. *Journal of Advertising*, 49(5), 540–556.
- Toffler, A. (1980). *The Third Wave*. New York, NY, USA: Bantam books.
- Triggs, T. (2006). Scissors and glue: Punk fanzines and the creation of a DIY aesthetic. *Journal of Design History*, 19(1), 69–83.
- Tu, Y., Neuhofer, B., & Viglia, G. (2018). When co-creation pays: Stimulating engagement to increase revenues. *International Journal of Contemporary Hospitality Management*, 30(4), 2093–2111.
- Tyler, L. E. (1978). *Individuality: Human Possibilities and Personal Choice in the Psychological Development of Men and Women*. San Francisco: Jossey-Bass, USA.
- Vargo, S. L., & Lusch, R. F. (2004). Evolving to a New Dominant Logic for Marketing. *Journal of Marketing*, 68(1), 1–17.
- Vargo, S. L., & Lusch, R. L. (2008). Service-dominant logic: continuing the evolution. *Journal of the Academy of Marketing Science*, 36(1), 1–12.
- Vargo, S. L., & Lusch, R. F. (2016). Institutions and axioms: An extension and update of service-dominant logic. *Journal of the Academy of Marketing Science*, 44(1), 5–23.
- Venkatesh, V., Thong, J. Y., & Xu, X. (2012). Consumer acceptance and use of information technology: Extending the unified theory of acceptance and use of technology. *MIS Quarterly*, 36(1), 157–178.
- Vrontis, D., Chatterjee, S., & Chaudhuri, R. (2021). Does remote work flexibility enhance organization performance? Moderating role of organization policy and top management support. *Journal of Business Research*, 139, 1501–1512.
- Wamba, S. F., Gunasekaran, A., Akter, S., & Dubey, R. (2019). The performance effects of big data analytics and supply chain ambidexterity: The moderating effect of environmental dynamism. *International Journal of Production Economics*, 222(4), Article 107498.
- Wang, C.L. (2020). *Contemporary perspectives on research: An introduction*, in Wang, C. L. (edition), *Handbook of research on the impact of fandom in society and consumerism*, Hershey, PA: IGI Global Inc., USA.
- Wang, C. L., Sarkar, A., & Sarkar, J. G. (2018). Building the holy brand: Towards a theoretical model of brand religiosity. *International Journal of Consumer Studies*, 42 (6), 736–743.
- Wang, C. L., Sarkar, J. G., & Sarkar, A. (2019). Hallowed be thy brand: Measuring perceived brand sacredness. *European Journal of Marketing*, 53(4), 733–757.
- Watson, M., & Shove, E. (2008). Product, competence, project and practice: DIY and the dynamics of craft consumption. *Journal of Consumer Culture*, 8(1), 69–89.
- Wigfield, A., & Eccles, J. S. (2000). Expectancy-value theory of achievement motivation. *Contemporary Educational Psychology*, 25(1), 68–81.
- Willaby, H. W., Costa, D. S. J., Burns, B. D., MacCann, C., & Roberts, R. D. (2015). Testing complex models with small sample sizes: A historical overview and empirical demonstration of what partial least squares (PLS) can offer differential psychology. *Personality and Individual Differences*, 84, 73–78.
- Wolf, M., & McQuitty, S. (2011). Understanding the Do-It-Yourself Consumer: DIY Motivation and Outcomes. *Academy of Marketing Science Review*, 1(3), 154–170.
- Wuenderlich, N. V., Heinonen, K., Ostrom, A. L., Patricio, L., Sousa, R., Voss, C., & Lemmink, J. G. (2015). Futurizing smart service: Implications for service researchers and managers. *Journal of Service Marketing*, 29(6/7), 442–447.
- Xiao, M., Ma, Q., & Li, M. (2020). The impact of customer resources on customer value in co-creation: The multiple mediating effects. *Journal of Contemporary Marketing Science*, 3(1), 33–56.
- Yadav, M. S., & Varadarajan, R. (2005). Interactivity in the electronic marketplace: An exposition of the concept and implications for research. *Journal of the Academy of Marketing Science*, 33(4), 585–603.
- Yang, Y., Asaad, Y., & Dwivedi, Y. (2017). Examining the impact of gamification on intention of engagement and brand attitude in the marketing context. *Computers in Human Behavior*, 73, 459–469.
- Yen, D., & Dey, B. (2019). Acculturation in the Social Media: Myth or reality? Analysing social-media-led integration and polarization. *Technological Forecasting and Social Change*, 145, 426–427.
- Yu, C.-H., Tsai, C.-C., Wang, Y., Lai, K.-K., & Tajvidi, M. (2020). Towards building a value co-creation circle in social commerce. *Computers in Human Behavior*, 108(7), Article 105476.
- Zaman, M., Vo-Thanh, T., Nguyen, C. T., Hasan, R., Akter, S., Mariani, M., & Hikkerova, L. (2023). Motives for posting fake reviews: Evidence from a cross-cultural comparison. *Journal of Business Research*, 154, 113359.
- Zhang, L. (2017). Fashioning the feminine self in 'prosumer capitalism': Women's work and the transnational reselling of western luxury online. *Journal of Consumer Culture*, 17(2), 184–204.
- Zhang, T., Lu, C., Torres, E., & Chen, P. (2018). Engaging customers in value co-creation or co-distraction online. *Journal of Services Marketing*, 32(1), 57–69.
- Zollo, L., Filieri, R., Rialti, R., & Yoon, S. (2020). Unpacking the relationship between social media marketing and brand equity: The mediating role of consumers' benefits and experience. *Journal of Business research*, 117, 256–267.

Sheshadri Chatterjee, PhD, is a post-doctoral research scholar at Indian Institute of Technology Kharagpur, India. He has completed PhD from Indian Institute of Technology Delhi, India. He is having work experience in different multinational organizations such as Microsoft Corporation, Hewlett Packard Company, IBM and so on. Sheshadri has published research articles in several reputed journals such as Government Information Quarterly, Information Technology & People, Journal of Digital Policy, Regulation and Governance and so on. Sheshadri is also a certified project management professional, PMP from Project Management Institute (PMI), USA and completed PRINCE2, OGC, UK and ITIL v3 UK.

Marcello Mariani, PhD, is a Professor of Management at the University of Reading (UK) and University of Bologna (Italy), member of the Academy of Management and the European Institute for Advanced Studies in Management. His current research interests include the drivers and consequences of the adoption of digital technologies (e.g., big data and analytics, Artificial Intelligence, robots, AVR, IoT) by firms and consumers, as well as a wide range of topics and issues in the strategic management, innovation management, entrepreneurship and marketing fields. His researches have been published in *Journal of Business Research*, *Harvard Business Review*, *Industrial Marketing Management*, *Journal of Advertising*, *Psychology & Marketing*, *MIT Sloan Management Review*, *Industrial and Corporate Change*, *Long Range Planning*, *Technological Forecasting and Social Change*, *IEEE-TEM*, *IEEE Access*, *International Journal of Electronic Commerce*, *Tourism Management*, *Annals of Tourism Research*, *Journal of Travel Research*, *International Journal of Contemporary Hospitality Management*, *International Journal of Hospitality Management*, *European Management*

Journal, *European Accounting Review*, *International Studies in Management and Organizations*, *Journal of Destination Management and Marketing*, and more.

Samuel Fosso Wamba, PhD, is Associate Dean for Research at TBS Education, France, and a Distinguished Visiting Professor at The University of Johannesburg, South Africa. He earned his Ph.D. in industrial engineering at the Polytechnic School of Montreal, Canada. His current research focuses on the business value of information technology, blockchain, artificial intelligence for business, business analytics, and big data. He is among the 2% of the most influential scholars globally based on the Mendeley database that includes 100,000 top scientists for 2020, 2021 and 2022. He ranks in Clarivate Analytics' Highly Cited Researchers List, which consists of the top 1% of the "world's most impactful scientific researchers," for 2020, 2021 and 2022, and in CDO Magazine's Leading Academic Data Leaders 2021. ORCID: 0000-0002-1073-058X