

Prosumers in times of crisis: definition, archetypes and implications

Bodo Lang (Department of Marketing, The University of Auckland, Auckland, New Zealand)

Rebecca Dolan (Department of Marketing, The University of Adelaide, Adelaide, Australia)

Joya Kemper (Department of Marketing, The University of Auckland, Auckland, New Zealand)

Gavin Northey (Department of Marketing, Griffith University, Queensland, Australia)

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Abstract

Purpose

This paper defines prosumers in light of the COVID-19 crisis and other contexts. It addresses how prosumers helped overcome challenges caused by COVID-19 and is the first paper to develop a taxonomy of prosumers, their differentiating characteristics and the degree to which they are useful in overcoming the challenges of COVID-19.

Design/methodology/approach

We conducted a literature search of the prosumer literature using the Web of Science and Scopus databases.

Findings

This study solves a definitional dilemma of prosumers and develops six prosumer archetypes displaying the nuances of prosumers. The study shows that the six prosumer archetypes vary in their usefulness in addressing challenges caused by COVID-19. The findings demonstrate the micro (individual), meso (organizational) and macro (societal) benefits offered by prosumers in times of crises.

Research limitations/implications

This study has some clear implications for the prosumer literature, the services literature and the crisis literature by clarifying the role of prosumers in times of crisis.

Practical implications

This paper offers several implications at the micro (individual), meso (organizational), and macro (societal) levels that are offered by prosumers in times of crises. The benefits of prosumers afford individuals, service practitioners and other organizations ways to remain resilient and strong in the face of significant crises such as COVID-19.

Originality/value

This paper makes three specific contributions. First, it contributes to the service literature by highlighting the role and value of prosumers in crises, an area currently under-researched. Secondly, it developed six prosumer archetypes displaying the nuances of prosumers, contributing to the prosumer literature by sharpening the focus of this versatile phenomenon and demonstrating the differential value of each type of prosumer in times of crises. Lastly, the study advances the prosumer literature by resolving the definitional dilemma of prosumers and by providing a broad, yet specific definition of prosumers that captures the different perspectives evident in the prosumer literature.

How prosumers have helped to address COVID-19 challenges

The COVID-19 pandemic has significantly impacted global economies. According to the World Trade Organization (WTO), the economic consequences are severe, with predictions global trade could fall by more than a third over 2020 (Blenkinsop, 2020). Some of the most affected sectors are services including tourism, transport, hospitality and distribution (WTO, 2020). Many businesses in these sectors (e.g. airlines, hotels, restaurants) have suffered from being completely, or partially locked down as a result of COVID-19 restrictions (Lock, 2020a). This has resulted in substantial challenges for businesses in these sectors (Lock, 2020b). While many businesses have adopted various approaches to survive during this unprecedented time (Barton and Morey, 2020; Heinonen and Strandvik, in press), other stakeholder groups have demonstrated that they can also be part of the solution. One such group are “prosumers” who occupy a unique position in the market space, as they are both providers and consumers (Chandler and Chen, 2015; Eckhardt *et al.*, 2019; Kotler, 1986; Ritzer and Jurgenson, 2010; Toffler, 1980).

The concept of prosumers was an early marker of value co-creation (Chandler and Chen, 2015; Prahalad and Ramaswamy, 2004) and has continued as a separate literature until today (Eckhardt *et al.*, 2019; Lang *et al.*, 2020; Martindale and McKinney, 2020; Perera *et al.*, 2020). While there are some similarities, the two concepts are different because prosumers do not necessarily require a second party to co-create value (Toffler, 1980) and the prosumer literature is not focused on value co-creation *per se* (Barbu *et al.*, 2019; Fox, 2018; Halassi *et al.*, 2019; Martindale and McKinney, 2020; Zhang, 2017). Despite significant prosumer literature (Eckhardt *et al.*, 2019; Ritzer and Jurgenson, 2010; Toffler, 1980), the role of prosumers in a crisis remains completely unexplored. This is surprising considering the multitude of beneficial prosumer behaviors that took place during the COVID-19 crisis (Cuevas *et al.*, 2020; Gee, 2020; The Jakarta Post, 2020). For example, since the onset of the pandemic, prosumers in the sharing economy mobilized to provide continuous service delivery during COVID-19. For instance, Uber prosumers provided free rides and food deliveries to frontline healthcare workers around the world (Uber, 2020) and 300,000 prosumers have joined Instacart since April 2020 to meet surging demand for grocery deliveries (O'Brien, 2020). In India, prosumers working for Zomato, one of the nation's top take away food delivery services, started grocery delivery to meet the increased need for people to remain in isolation at home (Reuters, 2020). Additionally, prosumers working for Uber Eats have helped to deliver groceries, medication from pharmacies and anything from chocolate to nappies (Business_Insider, 2020), thus keeping businesses afloat and increasing consumer safety during COVID-19. In short, during this crisis, the world's sharing economy prosumers have stepped up and helped to lessen the impact of COVID-19.

As mentioned earlier, despite a substantial prosumer literature (Eckhardt *et al.*, 2019; Ritzer and Jurgenson, 2010; Toffler, 1980) and a plethora of prosumer activity during COVID-19, the role of prosumers in crisis remains unexplored. This leads to five important research questions:

1. How can prosumers be defined in a way that applies to COVID-19 and other contexts?
2. Were sharing economy prosumers the only prosumers who helped overcome business challenges caused by COVID-19?

3. Are there other types of prosumers, and how do they differ from each other?
4. Are all types of prosumers equally useful in overcoming challenges posed by COVID-19?
5. What are the implications of prosumers in times of crisis, and who stands to benefit from their activity?

The purpose of this paper is to answer these important questions.

Outline of literature search

To answer the above questions, we conducted a literature search (Hossain, 2020) using the Web of Science and Scopus databases. As a result, we considered 61 prosumer articles but we do not refer to all articles because some report similar findings, or are not central to the purpose of this study (Hossain, 2020). We then synthesized insights from these articles to develop an understanding of prosumers and combined it with examples of prosumer behavior and how this has helped to address challenges caused by COVID-19.

Structure of the paper

In the first section of the paper, based on the 61 articles evaluated, we answer the first research question by developing a definition that captures the complexities of the prosumer phenomenon, and apply it to a crisis, and non-crisis context. Clear definitions are a critical foundation of research because they ensure coherence of a field (Kaplan and Haenlein, 2006). The second section answers research questions two to four, by developing a prosumer taxonomy which consists of six prosumer archetypes. We illustrate how these archetypes vary in how they helped address challenges caused by COVID-19. Such conceptual work is important because it elucidates boundaries that allow us to distinguish or cluster phenomena (Delmestri *et al.*, 2016) and it provides the “theoretical glue” (Whetten, 1989) necessary for advancing academic knowledge, and rendering such knowledge useful for practitioners. The third section answers the last research question and the final section concludes the paper.

Defining prosumers for COVID-19 and other contexts

Academics have embraced various conceptualizations of prosumers (Cova and Cova, 2012; Kotler, 1986; Setiffi *et al.*, 2018; Toffler, 1980) but there is a surprising absence of clear definitions of prosumers (Perera *et al.*, 2020). Our proposed definition is versatile as it applies to crises and non-crises contexts. Further, it is unique as it captures the literature's various conceptualizations of prosumers, yet it remains precise and concise, both desirable attributes in academic work (Barwise, 1995). We define prosumers as *individuals who consume and produce value, either for self-consumption or consumption by others, and can receive implicit or explicit incentives from organizations involved in the exchange.*

In the COVID-19 crisis, examples of implicit incentives include the social capital and goodwill created by prosumers who assisted businesses or members of their community. These incentives could apply to prosumers who assisted businesses through their customer citizenship behavior and helped businesses to adjust to “the new normal” (The Jakarta Post, 2020), or by helping vulnerable members of society, through grocery shopping or by completing other chores (Bonnett, 2020). Conversely, an example of explicit incentives

during COVID-19 is the incentives that prosumers received from businesses for becoming temporary members of the supply chain, by, for example, helping to stack shelves in overrun supermarkets, or delivering essential items in an over-worked logistics sector (McConnell, 2020). Alongside the incentives for prosumers, organizations often capture some of the value that prosumers create (Arvidsson and Colleoni, 2012; Maguire, 2010; Morreale, 2014). During COVID-19, this could simply be a firm's ability to remain in business because of actions taken by prosumers (The Jakarta Post, 2020).

A taxonomy of prosumers and how six prosumer archetypes have helped address COVID-19 challenges

This section answers research questions two to four. In order to overcome the variations and inconsistencies in previous literature concerning the conceptualization of prosumers (Cova and Cova, 2012; Kotler, 1986; Setiffi *et al.*, 2018; Toffler, 1980) this paper develops a taxonomy of prosumers. Our taxonomy consists of six prosumer archetypes that synthesize previous conceptualizations of prosumers. Further, this section provides examples of how these archetypes have helped to address challenges caused by COVID-19. Through this analysis, we demonstrate that some prosumer archetypes were more useful than others during COVID-19.

The proposed prosumer taxonomy (Table 1) is both operational and valuable. It is operational because it clearly distinguishes between the range of prosumer activities in the literature as all archetypes have clear boundaries (e.g. Table 1, defining features). Such precision is important in academic work (Barwise, 1995) but has been lacking in the prosumer literature thus far (Kotler, 1986; Perera *et al.*, 2020; Ritzer, 2014). Therefore, our prosumer taxonomy answers the call that “the multitude of prosumer roles and diversity of prosumer experiences need to be understood beyond their current abridged categories” (Darmody *et al.*, 2017, p. 1097). Our taxonomy is valuable for five reasons. First, although the literature has not considered the role of prosumers in crises, we found considerable evidence to support the prosumer archetypes during COVID-19. Second, our prosumer taxonomy has the desirable attribute of scope (Barwise, 1995) because it is context-free and thus can be applied to COVID-19, other crises, or everyday contexts. Third, the archetypes differ in how commonly they are performed and how helpful they were in addressing various COVID-19 challenges (see Table 1, “Estimated proportion” and “Likely impact”). Fourth, the prosumer taxonomy reflects the evolution of prosumers since earlier attempts to categorize them (Kotler, 1986). Fifth, our taxonomy is the first to capture the richness and diversity of the prosumer literature and makes it explicit that prosumers are multi-dimensional, rather than existing along a continuum (Ritzer, 2014) or in a two-dimensional space (Darmody *et al.*, 2017). Table 1 summarizes the prosumer taxonomy and how the six archetypes relate to the COVID-19 crisis.

We label the first prosumer archetype “DIY prosumers”. They choose to complete some services themselves, rather than paying someone else to perform them (Toffler, 1980). “They hunt or grow their own food, make their own clothing, and create their own amusements.” (Kotler, 1986, p. 510). DIY prosumers helped businesses and consumers during COVID-19 in several ways, such as baking their own bread, knitting their own garments (NZ Herald, 2020) or growing their own produce (Howard, 2020). DIY prosumer's lower service and product purchase rates helped by deescalating spiraling waiting times in shopping areas and reducing crowding, thus reducing the probability of transmitting COVID-19 (Henry, 2020).

The lower purchase rates also helped lessen the pressure on a supply chain that was already struggling to cope and resulted in many product shortages (Jack, 2020; Mollenkopf *et al.*, in press).

The second prosumer archetypes are “self-service prosumers”. Particularly following the introduction of new service designs, self-service prosumers can either wholly (e.g. self-test pregnancy kits) or partly (e.g. self-service fuel pumps) perform the service themselves (Toffler, 1980). Thus the term prosumer was an early marker of value co-creation (Chandler and Chen, 2015; Prahalad and Ramaswamy, 2004) which, during crises, may take place in “Safe Value Co-Creation Spheres” (Finsterwalder and Kuppelwieser, in press), which can be signaled in a number of ways (Bove and Benoit, in press). During COVID-19, many self-service prosumers performed parts of the service process that businesses could no longer perform due to COVID-19 restrictions. For example, self-service prosumers assisted supermarkets by packing their own groceries outside supermarkets to reduce congestion in shops, thus lowering the COVID-19 transmission rate (Henry, 2020). Self-service prosumers also performed a variety of other tasks that could not be performed by professional service providers during the height of COVID-19 (McDaid, 2020).

We have labeled the third prosumer archetype “customizing prosumers”. These prosumers choose to personalize and customize their own products and services, such as entertainment, travel or clothing (Fox, 2018; Ritzer, 2014). This type of prosumption has been criticized – arguing that they are not truly prosumers (Seran and Izvercian, 2014). Because of their focus on themselves, customizing prosumers are unlikely to have been a major factor in addressing challenges caused by COVID-19.

Typically prosumers have been thought of as providing value for others, particularly through technology (Andrews and Ritzer, 2018; Darmody *et al.*, 2017; Perera *et al.*, 2020). Therefore, we label the fourth prosumer archetype “collaborative prosumers”. They either passively (Yamaguchi, 1990) or actively provide for their own needs and the needs of others without a commercial entity profiting, as is the case with open-source software Linux (Pitt *et al.*, 2006). During COVID-19, collaborative prosumers were of significant help to many businesses, and individuals, particularly vulnerable members of society, such as the elderly (Andrew, 2020). Evidence abounds of friends, neighbors and often even strangers, facilitating the value transfer between businesses and vulnerable consumers who were best served by staying in isolation (Karpen and Conduit, in press; Lewis, 2020). Examples of such behavior include helping supermarkets by delivering groceries to vulnerable people (NZ Herald, 2020), distributing COVID-19 personal protective equipment (Cuevas *et al.*, 2020) or taking over other tasks that could not be performed by commercial service providers such as mowing the lawns (Cuevas *et al.*, 2020). In many ways, COVID-19 has shown that collaborative prosumers are the “purest type of prosumer”, because they create value for others without being exploited, which is an issue raised by critical voices in the prosumer literature (Andrews and Ritzer, 2018; Arvidsson and Colleoni, 2012; Bonsu *et al.*, 2010; Morreale, 2014; Ritzer and Jurgenson, 2010).

The fifth prosumer archetype is “monetized prosumers”. Their defining feature is that a commercial entity taps into the social and economic value of their activities without formally rewarding them for their activity. The value of monetized prosumers activities can be implicit, such as their activity on social media platforms and their resulting value to platform operators (Morreale, 2014). Alternately, the value can be explicit, in the context of reality television or market intermediaries such as influencers (Maguire, 2010), where a prosumer is

seen as someone who “produces by consuming” (Bonsu *et al.*, 2010, p. 92). During COVID-19, monetized prosumers played a major part in assisting business and consumers. Examples include becoming a COVID-19 crisis counselor and posting videos and tips on social media on how to deal with COVID-19 challenges (Cuevas *et al.*, 2020). Other COVID-19 examples include free online concerts by musicians via social media channels (Newton, 2020) or monetized prosumers endorsing the products of local businesses for free (The Jakarta Post, 2020).

Types of prosumers	DIY prosumers	Self-service prosumers	Customizing prosumers	Collaborative prosumers	Monetized prosumers	Economic prosumers
Description	Prosumers who perform entire tasks for their own use and consumption	Prosumers who perform partial self-service tasks, often through technology	Prosumers who personalize and customize their own products and services	Prosumers who create value that is accessible to others through a non-commercial third party	Prosumers who create value that is accessible to others through a commercial third party	Prosumers who receive formal incentives from a commercial third party when creating value for others
Example studies	Toffler (1980)	Toffler (1980), Kotler (1986)	Ritzer (2014), Fox (2018)	Pitt <i>et al.</i> (2006), DesAutels (2011)	Morreale (2014), Andrews and Ritzer (2018)	José Planells (2017), Eckhardt <i>et al.</i> (2019)
COVID-19 examples	Baking and growing fruit which reduces pressure on the supply chain, thus reducing waiting times in shops	Packing groceries outside supermarkets to reduce congestion in the retail environment	Making new clothes from old clothes during lockdown	Helping supermarkets, restaurants and cafes to deliver products to vulnerable consumers	Uber prosumers providing free rides and food deliveries to frontline healthcare workers	Advertising outstanding local businesses that were closed during the COVID-19 lockdown or making and selling homemade masks
Estimated proportion of prosumers who would have performed this role during COVID-19	Many	Many	Few	Some	Few	Few
Likely impact of these prosumers during COVID-19	High	Very high	Low	Very high	Moderate	High
Non-crisis examples	A woman baking her own cakes	A man fixing his computer	A girl designing her own personalized smartphone case	A boy writing a Wikipedia entry about his favorite band	A woman sharing her creative user-generated content on a social media platform	A man earning money by driving others in his car

(continued)

Types of prosumers	DIY prosumers	Self-service prosumers	Customizing prosumers	Collaborative prosumers	Monetized prosumers	Economic prosumers
<i>Key boundaries</i>						
Performs tasks voluntarily that could be performed by someone else	<i>Defining feature</i>	Yes	Yes	Yes	Yes	Yes
Performs tasks, possibly involuntarily, because of industries increasing use of “self-service” technology	No	<i>Defining feature</i>	Possibly	Possibly	Possibly	Possibly
Customizes products and services for self	No	No	<i>Defining feature</i>	Possibly	Possibly	Possibly
Produces for self and for others	No	No	No	<i>Defining feature</i>	Possibly	Possibly
Third party taps into social and economic value	No	No	No	No	<i>Defining feature</i>	Possibly
Prosumer receives formal incentive	No	No	No	No	No	<i>Defining feature</i>
Note(s): * = The estimated positive impact of each type of prosumer during COVID-19. Impact can occur at multiple levels, such as individuals, firms, society or COVID-19 (e.g. its spread)						

The sixth and final prosumer archetype takes into account the formal incentives prosumers may receive for the value they create (Chandler and Chen, 2015; Eckhardt *et al.*, 2019; Hellwig *et al.*, 2015). Examples of this are prosumers in the sharing economy, such as those who act as Airbnb hosts and guests (Lang *et al.*, 2020) and prosumers that produce and consume energy (Kästel and Gilroy-Scott, 2015). Economic prosumer activity during COVID-19 includes offering online fitness programs suitable to be performed at home with household items (Geary, 2020; Gee, 2020) and promoting outstanding local businesses that were closed during the COVID-19 lockdown (stuff, 2020). Even the making and selling of homemade protective equipment was undertaken by some economic prosumers (Salk, 2020).

This section has answered research questions two to four. Specifically, this section developed six prosumer archetypes with precise boundaries between each archetype and identified that sharing economy prosumers are only one of these six archetypes. This section also showed that the six types of prosumers played different roles during COVID-19. While some types, such as self-service prosumers and collaborative prosumers are likely to have had a higher impact than others, customizing prosumers are likely to have had a lower impact during COVID-19. This assessment indicates how useful the six prosumer types may be for future crises. The following section answers research question five.

What are the implications of prosumers in times of crisis and who stands to benefit from their activity?

Prosumers offer multi-level benefits for individuals, firms and society during times of crisis (Batat, in press). Consequently there are numerous implications for prosumers in general and the prosumer archetypes in particular, in times of crises.

At the micro-level, our review indicates individuals can, despite crises, still benefit from being prosumers, enhancing various capitals such as financial, intellectual and social. Individuals who are diversified as prosumers (e.g. hold multiple roles) have an enhanced ability to withstand shocks to their employment, social networks and well-being, quickly switching to different forms of prosumption when necessary (Darmody *et al.*, 2017). Firstly, individuals may be more likely to transition from being a “collaborative prosumer” to a “monetized” or “economic prosumer” (Table 1) to reap financial capital and thus remain resilient in a time of crisis. For example, with between 25 and 63% of consumers globally expecting their household income to decrease during the COVID-19 crisis (McKinsey and Company, 2020), the ability to increase financial capital through various means is essential. Secondly, intellectual capital is also enhanced through collaborative and monetized prosumers by sharing and exchange of knowledge, such as through the spreading of news, stories, domain knowledge and expertise. Lastly, social capital (relationships) can also be built on prosumption, especially among DIY, self-service, customizing and collaborative prosumers. As evidenced by COVID-19, social relationships and community relations are simultaneously in short supply and increasingly sought. As these social relationships change, either through increased loneliness (Odekerken-Schröder *et al.*, in press), social isolation, individualism or geographical dispersion, prosumers are driven to create and maintain social capital in service experiences (Chandler and Chen, 2015). For example, prosumer activities of crafting, scrapbooking, knitting and cooking have increased in COVID-19 self-isolation, and they are sharing the process and final “products” on social platforms such as Instagram and TikTok (with hashtags such as #quarantinecrafts, #covidcrafts, #coronaviruscraftchallenge) (Fairley, 2020).

At a meso level, in times of crisis, the presence of prosumers can also increase resilience and innovation in service firms (Zwick *et al.*, 2008), particularly those in hard-hit industries such as tourism, hospitality, transport and distribution (WTO, 2020). Firstly, firms can utilize prosumers, especially monetized prosumers, to co-create value and help with multiple business functions such as marketing (e.g. Wrappli – prosumers are rewarded for wrapping their car in an advertisement), innovation and design (e.g. Freelancer, DesignCrowd) and delivery and logistics (e.g. Zoom2U, Freight Match, Menulog) (Frehe *et al.*, 2017). Secondly, investment in material and human capital is reduced when utilizing a prosumer business model. To illustrate, companies like Airbnb and Uber can continue to grow despite financial crises, as they do not need to rely on investing in infrastructure. Rather, they can encourage greater uptake of economic prosumption and thus sharing of prosumer resources such as cars (Uber, Lyft), properties/rooms (Airbnb), storage space (e.g. Spacer) and fashion (The Volte); sharing material capital and lessening the burden on natural capital. In the aftermath of COVID-19, as travel restrictions are loosened, the tourism/hotel sector may be slower to return to the market as they grapple with hiring and training an entire workforce (Barton and Morey, 2020). Meanwhile, prosumers working in sharing economies (e.g. Airbnb) will be ready to operate (re-list their properties) with the click of a button, rather than going through lengthy organizational re-start processes. Lastly, shifting consumer needs (i.e. free/leisure time, creativity demands) and shopping methods and decreased consumer income as well as spending may result in companies needing to prioritize different consumer goods and target different prosumer types. Companies may shift or increase their offerings for those involved in DIY (i.e. home improvements, knitting, crafting) and customizing prosumption. As many more people were exposed to online shopping during the COVID-19 crisis more consumers are becoming comfortable customizing products (Freudmann, 2020). Companies will also need to prioritize self-service prosumption (i.e. online tutorials, online self-help guides) to decrease the burden on customer service team staff, for example, most companies are experiencing greater than average demand at call centers resulting in long customer delays (Braue, 2020).

Finally, at the macro level, we can see a positive influence of prosumers on the wider society in times of crisis. If more prosumers operate as “economic prosumers” for the reasons outlined above and thus can increase or recover some of their household income, we should see a gradual flow-on effect to financial capital with increased expenditure and consumption. Encouraging and harnessing prosumers' value co-creation in sharing businesses can generate a wider socioeconomic impact, as the sharing economy is inherently tied to meeting essential needs in people's daily lives, such as mobility, accommodation and food (Lan *et al.*, 2017). DIY, customizing and collaborative prosumers are also involved in inherently social domains and activities which can result in increased social capital (Ellison *et al.*, 2007), increasing resilience (Aldrich and Meyer, 2015) and wellbeing in times of crises (Hampshire and Matthijsse, 2010).

Conclusion

This paper offers an overview of prosumers in times of crises and makes three specific contributions. Firstly, the paper contributes to the service literature by highlighting the role and value of prosumers in crises, an area currently under-researched. Specifically, we demonstrate the micro (individual), meso (organizational) and macro (societal) benefits offered by prosumers in times of crises. Secondly, the research developed six prosumer archetypes displaying the nuances of prosumers, contributing to the prosumer literature by sharpening the focus of this versatile phenomenon and demonstrating the differential value of

each type of prosumer in times of crises. Although prosumers have played important roles in crises historically (e.g. Second World War), the current technologically advanced environment has seen a shift in the many roles that prosumers can perform, illustrated in our prosumer archetypes. For example, collaborative, monetized and economic prosumerism is more readily achievable due to online platforms such as Airbnb. Lastly, the study advances the prosumer literature by resolving the definitional dilemma of prosumers and by providing a broad, yet specific definition of prosumers that captures the different perspectives evident in the prosumer literature.

Prosumers offer several means by which the service sector can remain resilient and strong in the face of significant crises such as COVID-19. Prosumers are flexible, adaptable, fluid, light and fast, which is said to have a positive effect on consumer welfare (Bardhi and Eckhardt, 2017). Such characteristics are highly valued in crises and future crises are certain to occur (Avent, 2018; Kikwete *et al.*, 2016; Roubini, 2019). Thus, prosumers appear well-positioned to help address the impact of COVID-19 and future crises.

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