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Crises and entrepreneurial opportunities: Digital social innovation in response to physical distancing

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ABSTRACT

As physical distancing is a core measure of containing the spread of COVID-19, this pandemic is a crisis that has uprooted social interaction. While current research mainly focuses on crises as a challenge for entrepreneurial ventures and potential regulatory response mechanisms, we complement this research by addressing the question of how crises in general—and COVID-19's physical distancing measures in particular—shape entrepreneurial opportunities for social innovation. Based on two rounds of data collection—desktop research mapping out 95 entrepreneurial activities in Germany and four focus groups—we find first that entrepreneurs are proactive agents in alleviating the negative consequences of the COVID-19 crisis. They do so by creating two types of digital social innovation: digital brokering and digitized services. Second, we note that negative societal consequences of crises can be buffered by shifts in entrepreneurs' strategic orientation through improvised venturing, rapid pivoting and pro-social product extension. Third, we note variance in the persistence of changes with consequences for entrepreneurial opportunities and social innovation: Whereas some social innovation are rather ephemeral, others might endure and promise long-term impacts. We offer key insights for the literature on crisis, social innovation and hybrid organizing as well as on the implications for entrepreneurship practice and policy.

1. Introduction

COVID-19 is a crisis with profound implications for society and the economy, including for its entrepreneurs (Brown and Rocha, 2020; Giones et al., 2020; Zahra, 2021). In response to this exogenous shock, drastic measures have been taken to mitigate the spread of COVID-19. The “lockdown” of large parts of social and economic life has put businesses—in particular small and new ones—under pressure (Kuckertz et al., 2020). Some policy measures have interrupted core start-up activities, exacerbated uncertainty (Brown and Rocha, 2020) and forced entrepreneurs to respond and adapt quickly for their ventures to survive (Björklund et al., 2020; Thorgren and Williams, 2020). Yet, in line with Bapuji et al. (2020), we suggest that entrepreneurs do not merely suffer from the crisis; rather, they are performing a critical role in coping with the societal consequences caused by COVID-19, as society and the economy face a “rise of new,

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urgent and overwhelming needs” (Bacq and Lumpkin, 2020, p. 3).

Many of these needs are caused by the policy measures of physical distancing, which almost overnight transformed our globally connected world into a stay-at-home economy (Nummela et al., 2020). These measures affect the core of human behavior and lead to individual isolation (Gibson, 2020), in particular of vulnerable groups (Templeton et al., 2020). Entrepreneurs, however, can play an important role in addressing these social challenges. Thus, this crisis also offers entrepreneurial opportunities (Shepherd, 2020), especially for social innovation that is oriented towards social needs and emerges in view of pressing social problems (Krlev et al., 2018; van Wijk et al., 2019). We aim to further nuance our understanding of the role of entrepreneurship in times of crisis and address the question: *How do crises shape entrepreneurial opportunities for social innovation?* More precisely, we focus on how COVID-19—and physical distancing in particular—have impacted entrepreneurial opportunities for social innovation. Empirically, we draw from desktop research of 95 ventures working on social innovation in response to physical distancing as well as focus group data from ten ventures.

Our findings reveal how physical distancing suddenly modifies social needs in a way that makes room for digital social innovation opportunities. First, we identify two specific types of digital social innovation to address physical distancing: digital brokering and digitized services. Second, we reveal that social innovation opportunities for digital brokering and digitized services were addressed through three entrepreneurial modes: improvised venturing, rapid pivoting and pro-social product extension. Third, we note variance in the persistence of changes with consequences for social innovation. Some digital social innovation opportunities are rather ephemeral, while others might endure.

2. Crisis, entrepreneurial opportunities and social innovation

Entrepreneurship and crises are interlinked: Crises affect entrepreneurial ventures by leading to resource constraints, business contraction or even closure. At the same time, entrepreneurial ventures engage with crises, for instance, by establishing stronger links to local communities. As Doern et al. (2019) highlight in their review, the vast majority of previous studies focused on how crises challenged entrepreneurship. Complementing that research focus, we examine how crises also offer opportunities for entrepreneurial activities.

2.1. Entrepreneurship in times of crisis

Crises like war, civil unrest, acts of terrorism, natural disasters or COVID-19 are commonly treated as exogenous shocks that disrupt routine business practices and processes (DesJardine et al., 2019; Kwong et al., 2019). They increase uncertainty and reduce available resources (Brown and Rocha, 2020), making it less favorable for entrepreneurs to start and grow their ventures. On the other hand, unemployment and other forms of hardship in consequence of crisis might be drivers of “necessity entrepreneurship” (Mason and Hruskova, 2021).

In line with these findings, colleagues found that the COVID-19 pandemic severely impacted entrepreneurial activities (Patel and Rietveld, 2020): For instance, on the institutional level, it increased the need for improved support infrastructure (Muñoz et al., 2020). On the organizational level, entrepreneurs had to abruptly adjust their supply chains (Kuckertz et al., 2020) and experiment with their business models (Björklund et al., 2020). To ensure survival of their businesses, entrepreneurs deferred investments and reduced their expenses (Thorgren and Williams, 2020). Yet, a major gap persists about how entrepreneurial ventures contribute to mitigating the consequences of crises in general and COVID-19 in particular.

2.2. Entrepreneurial opportunities for social value creation in times of crises

Recent studies have started to call for a stronger focus on the potential contributions entrepreneurs make to alleviate societal consequences of a crisis (Bapuji et al., 2020; Barki et al., 2020). These contributions can in fact go beyond their (potential) contributions to economic recovery, as typically addressed in the literature (Bishop, 2019; Williams and Vorley, 2015). For example, entrepreneurial ventures can help addressing resource voids and thus enable immediate supply with food, electricity or the like (Linneluecke and McKnight, 2017). A crisis, such as COVID-19, may thus open up new entrepreneurial opportunities that existing market or state activities are unable to address (Farhoud et al., 2020; Gümüşay and Harrison, 2020).

Many of the opportunities brought about by COVID-19—especially due to the physical distancing it provoked (Gibson, 2020)—offer potential for social innovation as it relates to central human needs that are inadequately addressed (Tracey and Stott, 2017; van Wijk et al., 2019). Thus, they are not only “lucrative opportunities” (Shane and Venkataraman, 2000, p. 218) but can be construed as opportunities from a variety of evaluative criteria (Gümüşay, 2018; Wry and Haugh, 2018), offering room for innovation that benefits society (Anheier et al., 2019; Nicholls and Murdock, 2012). However, we lack a profound understanding of the nexus between the social conditions provoked by the crisis and the entrepreneurial opportunities for social innovation these conditions result in—and how entrepreneurs engage with this nexus.

3. Methodology

To investigate how physical distancing has shaped entrepreneurial opportunities in the crisis, we chose a qualitative approach investigating such entrepreneurial activities in Germany.

3.1. Setting

Since early 2020, countries around the world have implemented infection control measures to mitigate the spread of COVID-19. As the first country in Europe to do so, Italy declared a national lockdown on March 8th. Over the following days, several European countries closed their borders, e.g. Czech Republic, Denmark, Poland. On March 15th, Germany closed many of its own borders. One day later, schools and kindergartens were closed. Contact restrictions were set in place on March 22nd to enforce physical distancing. Where possible, people were asked to work from home and only leave the house for essential errands and selective recreational activities. Restaurants and bars, hotels, shops and malls were all closed. These measures taken to ensure and support physical distancing affected people's lives enormously. Many entrepreneurs became active to tackle the consequences of this crisis. One of the most prominent and visible examples enabling entrepreneurial activity in Germany was the #WirVersusVirus (#WeVersusVirus) hackathon initiated by civil society organizations with support from the government (Gegenhuber, 2020). It sparked entrepreneurial activity and was one of many pathways to harness opportunities in response to physical distancing.

3.2. Data collection and analysis

Our data collection and analysis proceeded in two phases, as Fig. 1 illustrates. First, we conducted a comprehensive web search to map out entrepreneurial activities in Germany addressing the consequences of physical distancing. The identified entrepreneurial activities were collected in a table, comprising 95 cases (please contact the authors for an overview). We followed an inductive approach (Gioia et al., 2013; Linneberg and Korsgaard, 2019), because we were interested in the reactions to the unique empirical incidence of COVID-19 and aimed to develop categories from the data (Suddaby, 2006). As Fig. 2 shows, we identified (1) crisis constraints suddenly modifying social needs, (2) social innovation through digital brokerage and digitized services, and (3) the specificity to physical distancing as characteristics of entrepreneurial opportunities and social innovation.

Building on these insights, in the second phase, we identified typical cases for each type of digital social innovation (Strauss and Corbin, 1990) and formed four focus groups (Kamberelis and Dimitriadis, 2013; Morgan, 1996). Focus groups enabled us to center the discussion around specific types of entrepreneurial activities and, at the same time, capture diverse perspectives on them, giving the participants room to relate to one another's viewpoints or articulate opposing perspectives. Altogether, twelve entrepreneurs from ten

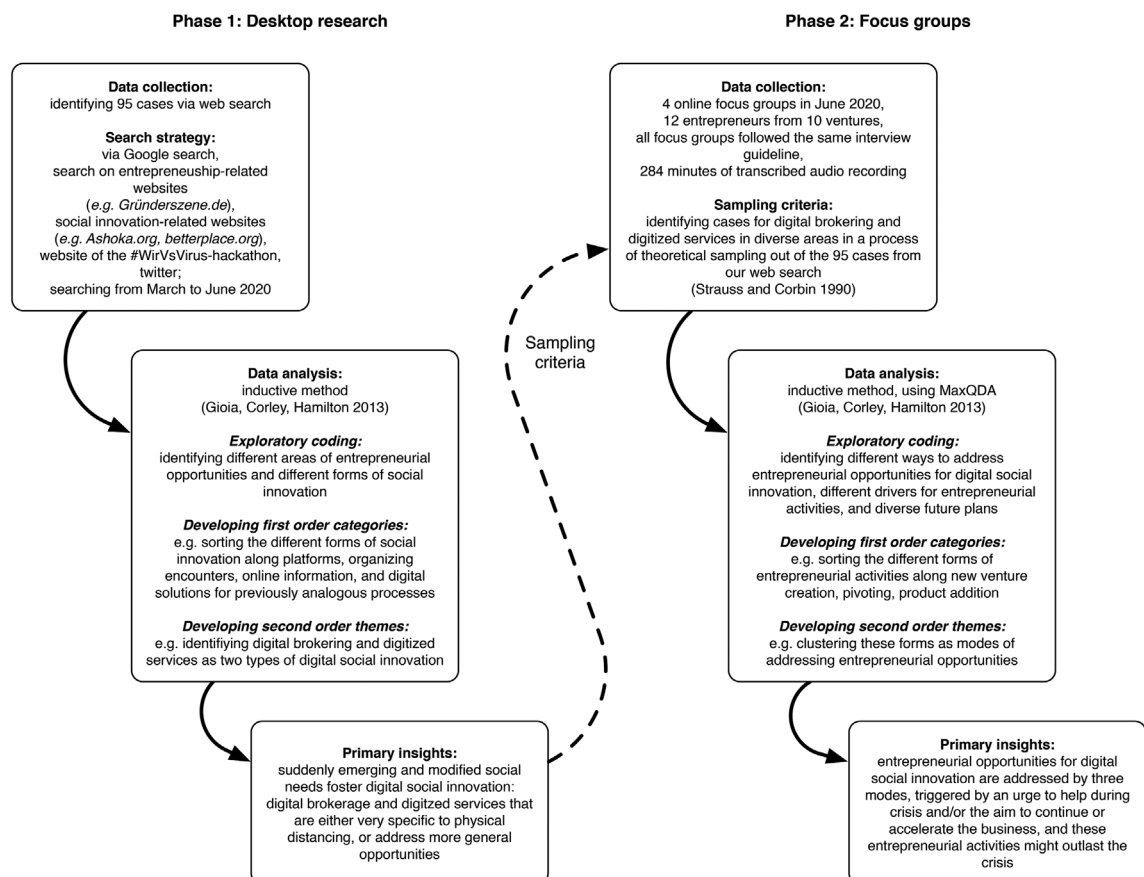


Fig. 1. Methodological approach.

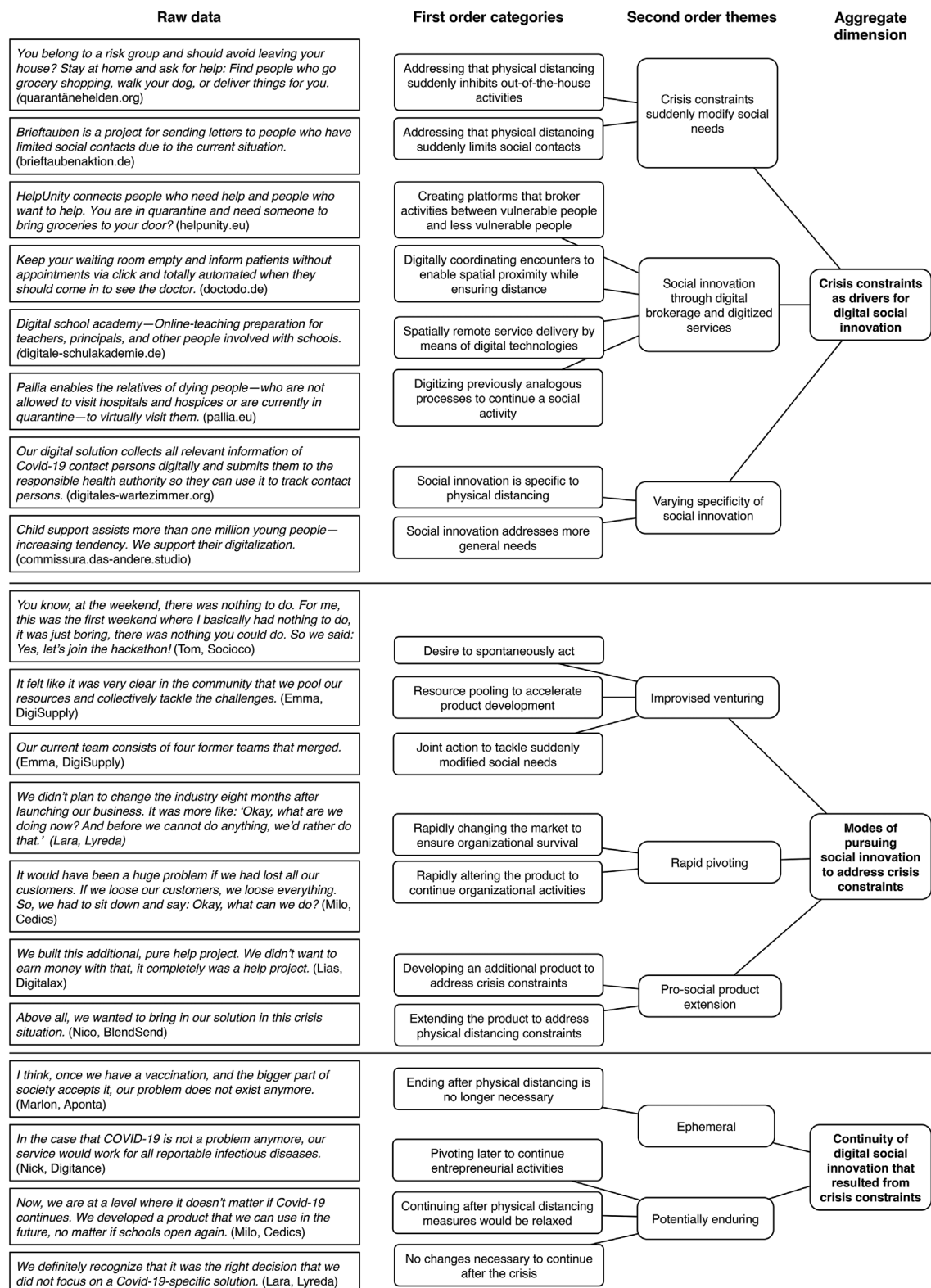


Fig. 2. Coding tree.

ventures participated (see [appendix](#)). As [Figs. 1 and 2](#) illustrate, once more, we followed the [Gioia et al. \(2013\)](#) approach.

4. Empirical insights

4.1. Physical distancing driving digital brokering and digitized services

Physical distancing under COVID-19 resulted in abrupt, comprehensive constraints and thus suddenly modified social needs. In so doing, it also opened up room to develop digital social innovation. Our desktop data reveals that two types of digital social innovation were seized upon: digital brokering and digitized services. *Digital brokering* enables a certain immediacy while respecting physical distancing through the usage of digital tools. Foremost, it addresses suddenly modified social needs by connecting actors that did previously not interact with each other. We identified 46 ventures that developed solutions for digital brokering for the work and private spheres. In the work sphere, some industries suffered a dearth of employment (e.g., hospitality and entertainment), while others were in desperate need of labor (e.g., agriculture). In our sample, ventures developed platforms to connect these two groups, for example, farmers with workers. In the private sphere, eleven ventures in our sample connect at-risk persons with less vulnerable people to go grocery shopping for them.

Digitized services designate spatially remote ways of service delivery, thereby avoiding physical proximity altogether. Digitized services replace in-person services. We identified 49 ventures that developed digitized services for the work and the private spheres. In the work sphere, modified social needs fostered, for example, opportunities for online recruiting or online mentoring. In the private sphere, entrepreneurial opportunities arose to digitize social interactions. For instance, one venture digitized congregational life, e.g. information and interaction among members of religious communities. For many of the digitized services in the private sphere, there was previously no or little intent to digitize, because personal interaction was perceived as fundamental for the delivery of the service: “We only used to offer in-person workshops. Prompting personal encounters was a core part of our concept” (Stella, Webonza). In some cases like virtual family visits to elderly homes or hospitals, digitizing the service is a compromise to continue a social activity that would otherwise be discontinued for the time of crisis.

Although the entrepreneurial opportunities in focus here were triggered by physical distancing, we observed a varying degree of specificity of the digital social innovation to physical distancing. Interestingly, 75 of our 95 cases pursued digital social innovation that are *specific to physical distancing*, while 20 cases pursued digital social innovation of a *more general* nature. The latter thereby benefit from physical distancing indirectly because of the increased awareness and adaption of digital solutions. As our interviewees stated, this “forced digitization” (Daniel, Oritero) caused the “general awareness for digital processes to skyrocket [...] because especially in major firms people realized that digitization isn’t as scary as they thought” (Lias, Digitalax).

4.2. Modes for pursuing digital social innovation in the face of crisis

Our focus group data reveals that social innovation opportunities for digital brokering and digitized services were addressed through three modes: improvised venturing, rapid pivoting, and pro-social product extension. In our data, five out of ten focus group cases spontaneously created a new venture to address suddenly modified social needs. *Improvised venturing* is characterized by the impromptu creation of a new venture, the combination of resources in new and unprecedented ways, and an acceleration of the development process through community engagement. The #WirVersusVirus hackathon set an important frame for improvised venturing since it enabled teams who address similar opportunities to pool their resources for joint action. As entrepreneur Emma explains, it “felt like it was very clear in the community that we pool our resources and collectively tackle the challenges” (Emma, DigiSupply). Improvised venturing was often driven by altruistic motives such as “idealism” (Nick, Digitance) and to “do something good” (Tom, Socioco). Others started with the desire to spontaneously build something, while their social concern emerged later in the process. For example, Brian co-founded a venture to digitally coordinate the interactions of young people and social workers, and describes: “I was first motivated by the feeling of ‘finally some action’ [...] but after a while I felt ‘wow, I’m making something that helps other people’” (Brian, Oritero).

For three ventures in our focus groups that existed prior to the crisis, physical distancing suddenly disrupted their existing product-market fit. Immediate (re)action was necessary—leading to *rapid pivoting*. Urgent as the physical distancing measures were, the need for some ventures to act was all the more so: Not reacting “would have ruined us financially” (Stella, Webonza) and thus the response needed to be swift: “On March, 15th [two days before schools closed] we sat together and knew: ‘Okay, we have to develop something’” (Milo, Cedics). One of the cases, Lyreda, had originally developed a reservation service, but they changed their product to coordinating patients and doctors’ appointments: “We didn’t plan to change the industry eight months after launching our business. It was more like: ‘Okay, what are we doing now? And before we cannot do anything, we’d rather do that.’ And, in the end, it really did save us, because we got a lot of positive press coverage” (Lara, Lyreda). While improvised venturing was predominantly motivated by an urge to help during the crisis, the rapidly pivoting ventures’ primary aim was to stabilize their business activities. Meeting suddenly modified social needs was initially a side benefit, a means of remaining relevant.

For two pre-existing ventures in our focus groups, physical distancing opened up adjacent entrepreneurial opportunities that they addressed through *pro-social product extension*. They felt an obligation to extend their current offerings to tackle suddenly modified social needs: “Above all, we wanted to bring our solution in this crisis situation” (Nico, Blendsend). This was fostered through contributions of in-kind donations like a “voluntary development team” (Lias, Digitalax) and existing competencies or solutions suitable to address crisis constraints. For example, Digitalax had developed digital solutions for farmers before physical distancing. They saw the potential of their domain knowledge and technological expertise to address suddenly modified social needs through digital brokering, namely matching harvesters and farmers: “We saw that there was a huge problem, and we knew what we could do to solve it with our concept.

Somebody had to do something! [...]. But at the same time, we also saw it as an opportunity for our start-up” (Lias, Digitalax). While pro-social product extension was predominantly driven by the motivation to help, these ventures stabilized their economic foundation or even accelerated venture growth—“doing well while doing good”.

4.3. Digital social innovation: ephemeral or enduring

As we outlined above, although all entrepreneurial activities in focus here were triggered by physical distancing, their engagement with and dependence on physical distancing varies. Accordingly, some of them might be *ephemeral*, while others may *endure*. Especially the more general opportunities, e.g. digitizing congregational life or online education, are prone to outlast physical distancing to some extent. One of the founders of Oritero explains: “I think it was good that we came into that area via COVID-19, and that this was the initial hook. But no solution with a single focus on COVID-19 will survive in the long term” (Brian, Oritero).

Interestingly, eight out of ten focus group cases planned on continuing their operations after social distancing measures are eventually relaxed, stating: “This cannot just be a COVID-19 solution!” (Adam, Socioco); although, five of them were addressing an opportunity specific to physical distancing. Two of the improvised ventures developed a product very specific to physical distancing but reported plans to make it more enduring (DigiSupply and Digitance). They were well aware that their digital brokerage and digitized services cannot outlast physical distancing and planned to pivot later: “In the case that COVID-19 is not a problem anymore, our service would work for all reportable infectious diseases” (Nick, Digitance). In these cases, physical distancing triggered an entrepreneurial activity that may be expanded into a broader digital social innovation. Furthermore, six ventures planned on keeping the new or altered product. Some of the improvised ventures strategically designed their offerings in a way that will also be relevant once physical distancing measures have been relaxed (Oritero, Socioco). Physical distancing was perceived as “a good trigger” (Tom, Socioco) as “the issue we address was promoted by COVID-19, but it will definitely continue to be important afterwards” (Tom, Socioco). Also entrepreneurial ventures that had developed an additional or altered product in the process of rapid pivoting or pro-social product extension intended on keeping them (Lyreda, Webonza, Cedics, BlendSend): “We do not just see that as a simple crisis solution. Instead, this is a good thing long-term, definitely, to support local businesses and social initiatives beyond the crisis” (Nico, BlendSend).

Only two out of ten focus group cases planned to terminate their entrepreneurial activities addressing the consequences of physical distancing (Aponta, Digitalax). As entrepreneur Marlon explains: “I hope that we will have widespread vaccination in one year and then Aponta will not be needed anymore” (Marlon, Aponta). These cases had specifically designed their offering in a way that they can easily be discontinued. Thus their digital social innovation is ephemeral.

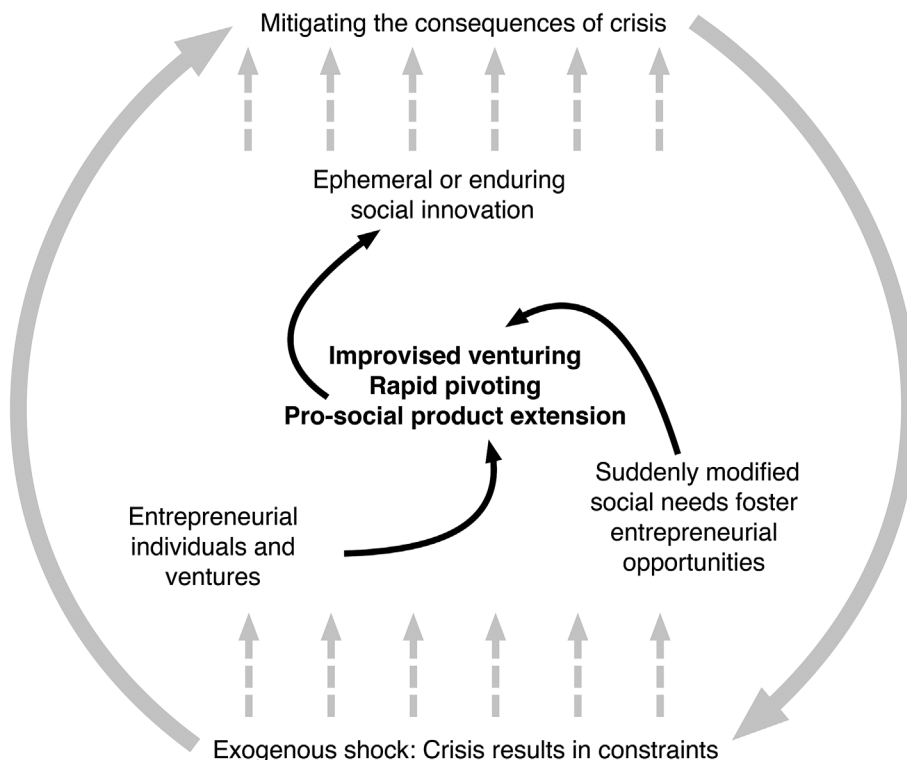


Fig. 3. Framework—The interplay of crisis constraints, entrepreneurial activities and social innovation.

5. Implications and research outlook

We have illustrated how a specific crisis constraint—physical distancing—creates new opportunities for entrepreneurial ventures to pursue social innovation. Our findings thus contribute to entrepreneurship and crisis research and relate to concerns around social innovation and technology, as summarized in our framework presented in Fig. 3. In the following, we briefly outline implications of our findings as well as directions for future research.

5.1. Technology and social innovation in crisis

Our article contributes to research on entrepreneurship and crisis by showing how entrepreneurs become proactive agents in alleviating the negative consequences of crises (Bacq and Lumpkin, 2020; Doern et al., 2019). In particular, we note how entrepreneurs innovate socially by means of digital technologies. Entrepreneurs may address physical distancing by creating a form of digital closeness. Social innovation requires the mobilization and channeling of existing resources in society in unusual ways (Mair et al., 2016; Mair and Marti, 2006; Young et al., 2019). Technology that enables digital brokering and digitized services is a key tool for advancing such social innovation. While social and technological innovation have mostly been treated as separate spheres (Krlev et al., 2020), our findings indicate how technologies—and digital means in particular—can support social innovation and thereby create social value.

While our observations are linked to the COVID-19 context, future investigation is required to reveal how different types of crises affect entrepreneurial opportunities. COVID-19 also opens up other avenues for comparative research. Unlike certain crises examined by colleagues, including natural disasters (Muñoz et al., 2019) or wars (Kwong et al., 2019), which are restricted to certain regions, COVID-19 has affected the whole world. Yet, research suggests COVID-19 may trigger different entrepreneurial responses in developing countries (Barki et al., 2020). Therefore, this crisis offers particular opportunities to investigate how (social) entrepreneurial responses—and the use of digital technologies—differ across institutional contexts.

5.2. Motives and modes of venturing

We find that negative consequences of crises may be buffered by shifts in entrepreneurs' strategic orientation. While pivoting involves a rather evolutionary change of entrepreneurial motivations in normal times (Grimes, 2018), crises may forcefully provoke such change. In contrast to previous conceptions of crisis-induced pivoting to ensure businesses survival (Björklund et al., 2020; Kuckertz et al., 2020; Tracey, 2020), crises may also initiate a shift in organizational purpose towards an explicit focus on tackling societal challenges. Social entrepreneurship is commonly thought to rest on pro-social motivation (Miller et al., 2012; Siebold et al., 2019), but our findings also indicate that entrepreneurs who started with predominantly commercial motives may engage in social innovation in the face of external pressures, such as COVID-19 (Bacq and Lumpkin, 2020).

As these organizations may thus become hybrids, this shift also has key implications in terms of antecedent processes of hybrid organizations (Battilana and Lee, 2014). Hence, we see a link between research on entrepreneurship and crisis and research on hybrid organizations. In case of pro-social product extension, we highlighted strategic mission shifts in terms of organizational purpose to ensure survival rather than mere adaptations of operational strategies (Tracey, 2020). In this way, crises may add to a hybridization of ventures (Battilana and Lee, 2014; Jäger and Schröer, 2014). This observation entails a number of questions for further research: Do such hybrids differ from hybrids that did not emerge from a crisis? Do they face a greater risk of drifting back to a purely commercial mission when the crisis subsides? Do commercial organizations tend to become more "social" in times of crisis?

5.3. Crisis-born, yet crisis-outlasting social innovation

We also contribute to the issue of time and urgency in addressing crisis constraints through social innovation. While most of the social innovation opportunities pursued in our data were specific to COVID-19, many founders plan for long-term entrepreneurial engagement. This implies that crisis entrepreneurship entails a high degree of tensions between immediate action and long-term goals, which requires further unpacking (Friederici et al., 2020). While some social innovation may be restricted in relevance to the crisis situation and thus ephemeral, others may create social value in the long run, and thus have enduring impact. Given the potential for social innovation that addresses societal challenges even post-crisis, this is also a prompt for closer policy engagement, which goes further than more ordinary and narrowly crisis-focused support measures (Muñoz et al., 2020).

While crisis-specific social innovation address pressing social needs, most research tends to focus on the steady evolution of social innovation (Anheier et al., 2019; van Wijk et al., 2019), less on immediate reactions to urgent context conditions. This creates a number of future research topics: When and how do immediate social innovation transform into lasting solutions to (wider) social problems? By what means do social innovation endure? What support infrastructures are needed to transform crisis-related social innovation into permanent ones?

6. Conclusion

Crises like COVID-19 cause change in social behavior and needs, which result in new entrepreneurial opportunities and social innovation—with important implications for entrepreneurial ventures. We are hopeful that our work offers insights that further advance understanding of the key issues at the intersection of entrepreneurship, crisis, technology and social innovation—and inspires scholars to delve more deeply into crisis research from an entrepreneurial opportunity and social innovation perspective.

Author statement

Katharina Scheidgen: Investigation, Methodology, Writing-Original draft, Visualization, Conceptualization. Ali Aslan Gümüşay: Conceptualization, Methodology, Writing-Original draft, Resources. Franziska Günzel-Jensen: Writing-Original draft, Visualization, Conceptualization, Methodology, Investigation. Gorgi Krlev: Writing-Original draft, Conceptualization. Miriam Wolf: Writing-Original draft, Methodology.

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.

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APPENDIX. Focus group participants

Opportunity	Focus group	Venture	Entrepreneur	Mode of addressing	Product/service
Digital brokering	FG 1	Aponta	Marlon (E-1)	Improvised venturing	Matching people who are immune to COVID-19 with support organizations
		DigiSupply	Emma (E-2)	Improvised venturing	Matching people who cannot work due to physical distancing and organizations who need additional workers
		BlendSend	Nico (E-3)	Pro-social product extension	Matching local businesses with customers
	FG 2	Oritero	Brian (E-4)	Improvised venturing	Digitally coordinating the interactions of young people and their social workers
		Lyreda	Daniel (E-5)	Rapid pivoting	Digitally coordinating patients and doctors' appointments
		Digitalax	Lias (E-7)	Pro-social product extension	Matching harvest helper and farmers
Digitized services	FG 3	Socioco	Adam (E-8)	Improvised venturing	Digitalizing congregational life
		Digitance	Tom (E-9)		
	FG 4	Cedics	Nick (E-10)	Improvised venturing	Digitalizing information processing at health authorities
		Webonza	Milo (E-11)	Rapid pivoting	Remote private tutoring for pupils
			Stella (E-12)	Rapid pivoting	Digital workshops for adult education

*All names of entrepreneurs and ventures from the focus groups are anonymized.

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