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Social innovation during turbulent times: a systematic literature review and research agenda

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ABSTRACT

Contemporary societies are affected by profound and often disruptive changes leading to socio-economic turbulence. The COVID-19 pandemic has been one of such changes. Gaining a deeper understanding of how society-based responses – such as social innovation – work during turbulent times is of increased significance. This paper carries out a systematically conducted literature review on the forms of social innovation arisen during the first year of the pandemic. Based upon our findings, areas for middle range theorizing on how social innovation works under conditions of turbulence and a prospective research agenda are explored.

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KEYWORDS social innovation; turbulent time; systematic literature review

Introduction

The COVID-19 pandemic has triggered a disruptive change that goes beyond the health or economic realms and invests all the spheres of society, thus representing one of the defining policy challenges of our era. Several researchers concur in defining the nature of the pandemic as turbulent (Dobbs, Gravey, and Petetin 2021). Indeed, the COVID-19 crisis is characterized by high levels of complexity, volatility in context, and unpredictable developments (Ansell and Trondal 2018). Ansell, Sørensen, and Torfing (2020) highlight the paradigmatic turbulent nature of the Coronavirus crisis and call for agile and adaptive solutions, while Marmot and Allen (2020) discuss the necessity of recurring to complex interventions to deal with the societal transformations and widening inequalities caused by the pandemic. Among the manifold policy and societal responses to COVID-19, scholars have pointed out a burgeoning of social innovation initiatives as potentially apt to providing solutions to some of the societal needs elicited by the pandemic (Hansen et al. 2021; Steen and Brandsen 2020).

Social innovation has been traditionally acknowledged for its distinctive and effective role in responding to welfare crises (The Young Foundation 2012) and achieving

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transformative impact (Avelino et al. 2019). Understood as a novel way of working that promotes collaborations between citizens, third sector organizations and public actors, social innovation has been harnessed by policymakers around the globe (Pieri et al. 2021). However, due to the novelty of the concept and challenges associated with its evaluation, empirical research evidencing the effectiveness of social innovation in addressing societal needs is still scarce (Peter et al. 2018; Wittmayer et al. 2017). Moreover, there is a need for a deeper theorization of the dynamic interactions generated by social innovation initiatives (Pel et al. 2020) and in particular to explore how social innovation dynamics work in turbulent circumstances.

Our paper aims at addressing this gap by exploring the conditions that enable or hinder social innovation, the mechanisms underlying social innovation processes in turbulent circumstances, and their effects, by using the COVID-19 as a paradigmatic example of turbulence (Ansell, Sørensen, and Torfing 2023). To this purpose, we have carried out a systematically conducted literature review that examines social innovation processes during the first year of the pandemic. The lessons learnt through our review provide insights into how social innovation might be one solution to address extant and future situations characterized by turbulency. In particular, we found that features of a turbulent event promote collaborative advantage, recombination of resources, proactive dynamic, new means of communications and emotions-specific motivations ultimately leading to change in services quality (both improvement and deterioration), innovation and stakeholders' well-being.

This paper unfolds as follows. Firstly, we provide an overview of social innovation conceptualizations and empirical evidence. Secondly, a description of the methods employed for our research is provided. In our findings, we explore the mechanisms underlying social innovation initiatives, and their effect during the COVID-19 pandemic. We then conclude by advancing middle range theories on how social innovation works in turbulent times, compared with normal times and by delineating the contours of a prospective research agenda.

Background

Alongside its very nature as a health crisis, COVID-19 can be regarded as one of the defining policy challenges of our time, because it has rapidly exposed the fragile nature of governance institutions and the shortcomings of years of austerity policies (Dunlop, Ongaro, and Baker 2020; Ongaro and Kickert 2020). The COVID-19 pandemic has been defined in literature as a turbulent event (Ansell, Sørensen, and Torfing 2020; Dobbs, Gravey, and Petetin 2021). Turbulence can be described as *'situations where events, demands, and support interact and change in highly variable, inconsistent, unexpected or unpredictable ways'* (Ansell and Trondal 2018, 43) and turbulent events are a peculiar combination of volatile contexts and unpredictable developments (Ansell and Trondal 2018; Ansell, Sørensen, and Torfing 2023). We can establish the theoretical boundaries of turbulence by comparing its scope and purpose with the concept of crisis (Zhong, Qian, and Kapucu 2022). Turbulence does not represent necessarily a threat and could be considered either a dysfunction or a permanent condition that determines the reasons of existence of an organization or institution (Ansell, Trondal, and Øgård 2016). On the contrary, the conceptual definition of crisis is confined to a dysfunctional nature and represents a basic threat (institutional or situational) to the survival of an organization or institution (Hart and Lars 2019). This

means that strategies developed by organizations to deal with crises are not always suitable to deal with turbulence (Carstensen, Sørensen, and Torfing 2022; Scognamiglio et al., 2023; Hart and Lars 2019). Moreover while the strategies employed to deal with crises have often the goal of restoring the old equilibrium, in the case of turbulence they aim at achieving a new equilibrium and potentially transformative changes (Carstensen, Sørensen, and Torfing 2022).

The COVID-19 pandemic represents almost paradigmatically a dysfunctional turbulent event. The rapid spread and changing nature of the virus, the wide variety of policy choices to address the health emergency, and the extension of the health crisis to all other societal domains, are manifestations of the turbulence that the pandemic has brought to our communities (Horton 2020). Indeed, the COVID-19 pandemic has also generated new inequalities, such as accessibility to vaccines, employment opportunities or safety in workplaces, examples of the disruption in our society (Horton 2020). All these new inequalities will need solutions and answers. COVID-19 represents a pivotal occasion to understand possible responses to turbulence, including how to future-proof public governance and prepare for future disruptions such as climate emergencies, energy crises, or other pandemics. For this reason, it is important to develop initiatives that can respond to the fragility above described and tackle inequalities and the challenges deriving from profound societal changes (van Wijk et al. 2019).

Among these initiatives, social innovation responses might provide a path to an alternative future, leading potentially to transformative changes (Montgomery and Mazzei 2021). Over the last two decades, social innovation has been central to both practitioners and academic debates (Ayob, Teasdale, and Fagan 2016). At the policy level, social innovation was firstly formalized by the Organisation for Economic Cooperation and Development (OECD) through the launch of a Forum on social innovation, and by the Obama's administration, which established the Office for Social Innovation and Civic Participation in 2009 (Pieri et al. 2021). In 2010, social innovation also became a key element of the EU2020 strategy, through the Social innovation Initiative (Steiner et al. 2021). Social innovation has also attracted the interest of academics (Slee et al. 2021), who focused on its alleged conceptual ambiguity (Tracey and Stott 2017). One of the reasons given to explain the blurring of the concept of social innovation is its transdisciplinary nature (Moulaert et al. 2013), whereby different disciplines including business management, urban and regional studies, public administration, political science have branded their work in separate literature strands and through different epistemological stances (Slee et al. 2021). As a consequence, social innovation is often conflated with other similar concepts, such as co-production, co-creation, or collaborative innovation (Hartley, Sørensen, and Torfing 2013; Voorberg, Bekkers, and Tummers 2015).

The ambiguous conceptualization of social innovation also stems from the lack of neutrality of the concept, which rather occupies a 'contested conceptual space' (Bragaglia 2021). On the one hand, several governments have increasingly embraced social innovation as a universal solution to a wide variety of economic and social challenges (Montgomery 2016). Indeed, champions of public sector downsizing have found in the ambiguous social innovation concept a means to further their agenda (Sinclair and Baglioni 2014). On the other hand, social innovation has been conceptualized as a grassroots response to neoliberal government policies, aiming at fostering more inclusive communities (The Young Foundation 2012). While acknowledging the wealth of definitions of social innovation, in our research we take a pragmatic approach and consider social innovation as collaborative actions and participatory

processes that intend to satisfy social needs, aim to achieve common desires and aspirations and thereby aspire to help improve society (Steiner et al. 2021). More specifically, for our study we broadly define social innovation as a novel way of working that promotes collaboration processes among individuals, citizens and/or civil society organizations, including also private organizations and public sector organizations, for (re)designing and delivering services and products to address societal needs (Brandsen et al. 2016).

The transdisciplinary nature of social innovation research and the variety of uses for which it has been employed have hindered empirical research and the exploration of its effectiveness in real-life settings (Ayob, Teasdale, and Fagan 2016; Brandsen et al. 2016). There is a call to move beyond anecdotal and fragmented evidence and develop insights into the dynamics and agency of social innovation. For example, Pel et al. (2020) explore the extent to which, how and under what conditions social innovation contribute to transformative change. Mechanisms such as co-shaping of reflexive and experimental space, development of new interpersonal relations, increasing empowerment of people involved in the initiatives, network generation and institutionalization of interventions have been identified as potential dynamics for achieving long-term transformative changes (Pel et al. 2020). Additional mechanisms linked to the knowledge and resource brokerage role of social innovation initiatives are explored by Castro-Arce and Vanclay (2020), while van Wijk et al. (2019) describe micro mechanisms such as the development of individuals emotions as fundamental to generating collaborative dynamics. However, all of these mechanisms are primarily tied to the social and historical dimension of local or regional governance contexts, and thus remain disconnected from more complex macro level contexts (Moulaert and MacCallum 2019) and turbulent events. While Avelino et al. (2017) connect social innovation with context more at a macro level, focusing upon the concept of social innovation as a game-changer, they do not focus upon the dynamics of social innovation initiatives (and related underlying mechanisms) triggered by the contextual changes. Summing up, to our knowledge the connection between context, mechanisms and process results has not been explored through empirical studies.

This lack of empirical research becomes even more relevant in the context of a turbulent time such as COVID-19 when, for example, novel approaches to governance such as social innovation are likely to require further scrutiny and better theorizing if they are to be effective in responding to high-impact threats (Dunlop, Ongaro, and Baker 2020) or providing solutions to future turbulent problems (Ansell, Sørensen, and Torfing 2020). Our research aims to address this gap and advance research regarding social innovation by providing a better understanding about the mechanisms and effects generated by social innovation initiatives during turbulent times. To this purpose, a systematically conducted literature review has been undertaken to explore interactions between context, mechanisms, and results/effects. Our research may help inform how turbulence transforms the conditions for developing forms of social innovation (Reale 2021) and may yield insights into how social innovation might be used to govern future challenges.

Methods

In health care research, systematically conducted reviews are a useful vehicle for exploring the contribution of an intervention in terms of its effectiveness, exploring

the dynamics that lay at the heart of it and understanding how particular contextual factors trigger mechanism that lead to results (Donaldson, Mugford, and Vale 2002). These reviews are widely used to inform policy-makers, practitioners and civil society (Iain, Hedges, and Cooper 2002)

To ensure validity and comprehensiveness in our review, we developed a review protocol following best practices for systematic reviewing of scientific literature (Wong et al. 2013). For more information see the Supplementary material. The following databases were searched: ASSIA, International Bibliography of social sciences, Scopus, Sociological Abstracts, and Web of Science. For Web of Science, we launched our searches across the following categories: Business, Economics, Management, Political Science, Public Management. We included only academic literature and we did not conduct searches in grey literature. This could have affected our data sampling but, at the same time, relying on peer reviewed publications may have increased the quality of our findings. All the records retrieved ($n = 2356$) were stored in a shared database through Zotero reference management software. A two-stage screening process was conducted against the following inclusion criteria:

- records presenting primary or secondary data about social innovation processes as defined in this paper.
- papers published between March 2020 and February 2021 (i.e. one year from the COVID-19 outbreak) to focus our attention on how social innovation reacted to COVID-19 in the first place;
- papers addressing social innovation processes as responses to challenges and issues connected to and/or emerged during COVID-19; papers with data collected before the pandemic were excluded;
- English written records.

Duplicates were removed and records were firstly screened by title and abstract. Studies that met our inclusion criteria ($n = 148$) were read in full and further screened for relevance. Fifty-nine ($n = 59$) studies were considered eligible for full analysis. Any disagreements about including or excluding specific papers were discussed resolved through meetings with the research team. [Figure 1](#) outlines the entire review process.

We mined the content of all eligible papers according to the title, authors, theoretical lens, methodology, context, mechanisms, and results/effects.

In the social innovation literature, actors and contexts co-develop a response to problems (Avelino et al. 2017) and through the interaction of contexts and mechanisms potentially constitute new contexts (Nielsen, Lemire, and Tangsig 2022). Knowledge gained about how turbulent contexts and social innovation mechanisms interact, and the role of context in enabling and hindering those processes can then be used to understand how interventions might work to address similar turbulent conditions in the future (Greenhalgh and Manzano 2021). In our paper, context is operationalized as the general circumstances characterizing a turbulent event, the traits of the organizations involved in social innovation processes and attributes of people participating in the initiatives.

The term ‘mechanism’ is used by social scientist to underline a specific conception of causation which involves the generation of theoretical propositions – in the form of middle range theories (Capano et al. 2019; Hedström and Ylikoski 2010; Ongaro et al. 2019). Mechanism can be defined as opening up the black box and showing the cogs

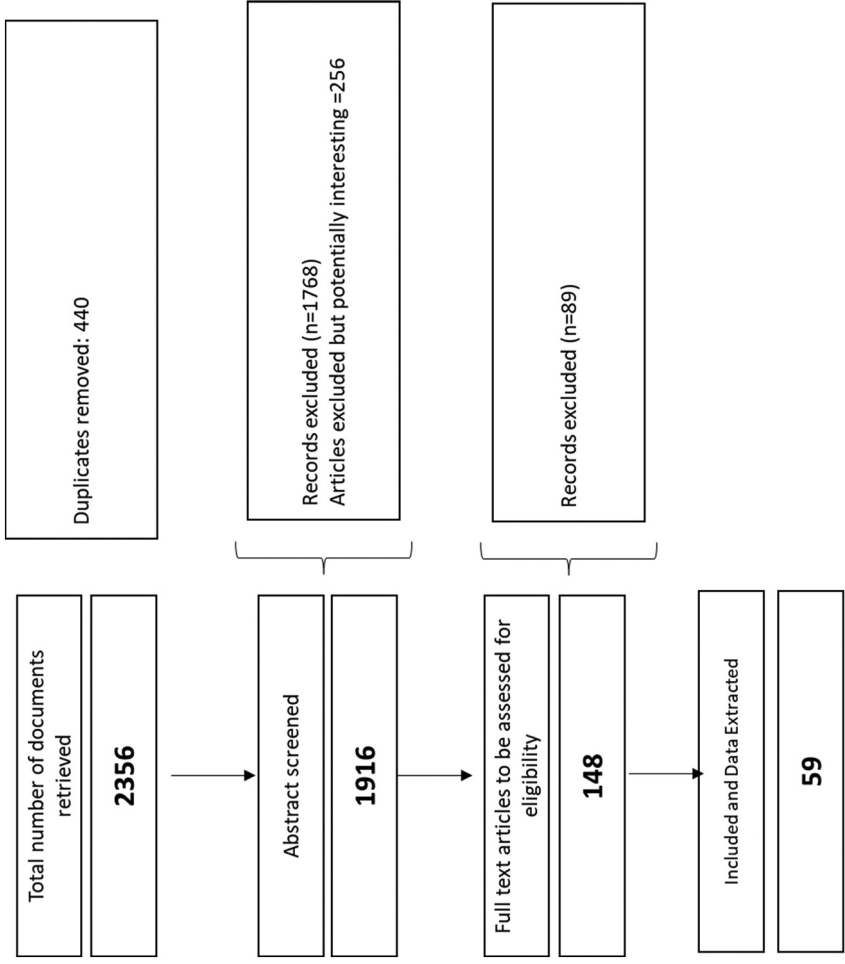


Figure 1. Review Flow.

and wheels of the internal machinery (Elster 1989), which might help to understand dynamics in complex adaptive systems. When applied to social innovation interventions, mechanisms involve organizational, emotional, or cognitive responses of social innovation participants, which can be identified as dynamics leading to positive or negative results.

Papers were initially coded separately in terms of statements related to context, mechanisms and results deriving from the process, following a typical thematic analysis process (Barnett-Page and Thomas 2009). Discussion in the research team was then undertaken to refine the themes identified, enabling the identification of key topics concerning context, mechanisms, and results. In a second round of coding, we employed linked coding (Jackson and Kolla 2012), to explore the relationships between common themes and to establish how contexts triggered and interacted with mechanisms which led to specific results. Data extraction and analyses were conducted by authors one and two and iteratively discussed with authors three and four through regular meetings. Explanations for the findings were generated in an abductive fashion (Peirce 1932; Timmermans and Tavory 2012) by moving backward and forward among data, research literature and the emergent configurations and middle range theories (Hedström and Ylikoski 2010).

29 papers were published in health journals, 15 in management journals, nine in social work journals, while the remaining in policy journals, humanities journals or education journals. In the supportive material (Table A), a summary of the social innovation initiatives explored in the included papers is provided. The initiatives ranged from collaboration between different stakeholders to design and develop new products to novel ways of working and providing existing services.

Table A, in the supportive material, also shows that 14 studies were conducted in the US; four in the UK; three in Canada, China, Italy, and South Korea; two in France, Spain, and Ireland; one each in Hong Kong, Hungary, India, Netherlands, Singapore, South Africa, Syria, Turkey. Some of the papers were based in a wide variety of countries in a comparative fashion. Most of the papers (32 out of 59) were published during the second wave of Covid infections (September 2020 – February 2021); however, they do not provide details of the Covid wave or the exact month of data collection. Most papers (48 out of 59) did not present a theoretical framework while the remaining use frameworks from innovation, ecosystem perspective and asset-based community. Almost all the papers were qualitative in nature, mainly case studies, which included personal reflections on social innovation practices in which authors were involved.

Our findings section explores the mechanisms behind social innovation initiatives, their relationship with contextual enabling and hindering factors and the resulting positive and negative consequences.

Findings

COVID-19 disruption triggered five mechanisms which included reinforcing new and existing partnerships, the generation of proactivity, resource combination and recombination, the establishment of new means of communication and eliciting emotions-specific motivations. These mechanisms were triggered by specific contextual circumstances and led to either positive or negative results.

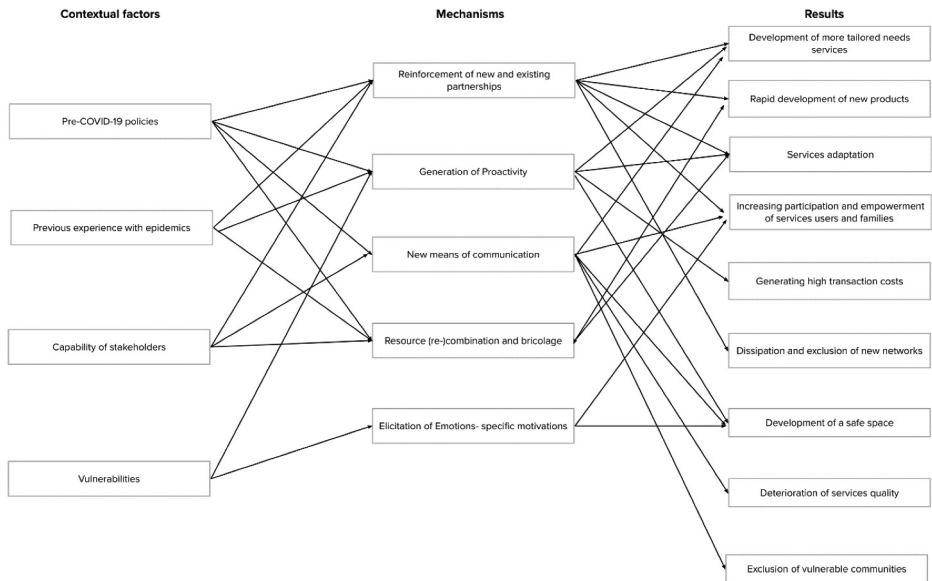


Figure 2. Interactions among contexts, mechanisms, and outcomes patterns.

Figure 2 summarizes the interactions among contexts and mechanisms developed from our linked coding analysis. Each mechanism, its interaction with contextual factors and the results deriving from that mechanism are discussed in turn.

Reinforcement of new and existing partnerships

Twenty-six papers acknowledged the enabling role that the COVID-19 disruption and related policies had on social innovation mechanisms in terms of reinforcement of new and existing partnerships. For example, turbulence and enacted policies favoured the reinforcement of partnerships among stakeholders in health care settings (e.g. Brodie et al. 2021; Guan et al. 2021), and specifically between policy makers and policy providers (Brodie et al. 2021), private and public sector organizations (e.DiGuseppi et al. 2021; Racher and Brodie 2020), staff in organizations (e.g. Khor et al. 2020), and between service providers and service users (e.g. Guan et al. 2021).

In response to the contextual changes, several actors acted as brokers among different organizations (Sarkar 2021), generating boundary spanning that blurred the boundaries among the actors involved (Racher and Brodie 2020). Pre-existing multi-level systems collaborations enabled the establishment of this mechanism in different contexts, such as health settings (Khor et al. 2020; Lai et al. 2020), community health settings (Guan et al. 2021) and social care settings (Driscoll et al. 2020) iteratively reinforcing forms of collaboration. Existing partnerships were boosted, and collaborative processes among different actors – such as public sector, non-profit organizations and private stakeholders – were established (You 2020). However, the pre-existence of partnerships was not always enabling social innovation. Imai and Yao (2021), for

example, found a lack of coordination between pre-existing partners and new ones during COVID-19, leading to duplication of efforts and dissipation of social capital.

Alongside reinforcing long-standing partnerships, COVID-19 triggered new bottom-up collaborations, thus unleashing actions by stakeholders, usually at the margins of social innovation processes and leading to opportunities to overcome resource constraints (Park, Lee, and Mo Ahn 2021; Samina 2020). For example, researchers, entrepreneurs and designers collaborated to develop medical equipment (e.g. ventilators or masks) and disseminate science and information about the pandemic (Corsini, Dammicco, and Moultrie 2021; Guardo et al. 2021; Richterich 2020; Pacini, Belmonte, and Bagnoli 2020). Social workers and engineers worked together to initiate cross-sector collaborations to address the health and sanitation needs of families living on a low income (Chui and Albert 2021), while Michelin-starred chefs worked with non-profit organizations to support the food needs of poor households (Batat 2021).

Pre-Covid policies had a role in affecting the existence of partnership processes. Ming and Sidel (2020) showed that the weak response of the Chinese civil society to the pandemic was a direct consequence of public policies limiting the establishment and growth of civil society organizations and movements. The cognitive legacy of previous experience of epidemics was also identified as favouring the reinforcement of collaborations in three papers. The learning path acquired was crucial in shaping existing and new partnerships. For example, the effective health-crisis management collaborative system that the Korean government deployed resulted from the capacity to learn from previous epidemics experiences (Kim 2020), while You (2020) underlined that knowledge of previous epidemics helped increase trust in government decisions and promoted effective collaboration. Knowledge of previous health emergencies was also found relevant by Sarkar (2021), who identified the cognitive legacy as enabling the facilitation role of the public actor inside an already established multi-actor collaboration. Capabilities and assets of the stakeholders involved in the partnerships, such as leadership and international networks, were another enabling contextual factor that reinforced collaboration among partners. For example, Batat (2021) analysed how Michelin-starred chefs, who have historically held a position of opinion leaders in France, favoured the establishment of philanthropic activities in the hospitality sector aiming at addressing food insecurity during COVID-19. Some papers identified that the reinforcement of new and existing partnerships was important to find ways to adapt services delivery to new normality (Driscoll et al. 2020) or to transform ideas rapidly in activities and products ((Guardo et al. 2021; Richterich 2020). Others instead suggested that they were helpful in better tailoring services to the need of service users or communities ((DiGuseppi et al. 2021; Lai et al. 2020; Samina 2020; Simula et al. 2021). DiGuseppi et al. (2021), for example, identified that the existing collaboration between universities and the non-profit sector supported the rapid development of handwashing stations tailored to the needs of homeless people, improving the services provided. Service users such as patients, families or students were actively involved in health and education services, leading to increased trust, a sense of ownership and empowerment (Csoba and Diebel 2020; Yang and Huang 2021; Chui and Albert 2021; Moreno-Serna et al. 2020; Sarkar 2021). While this was true in most of the papers included, this process has resulted in some cases in a lack of collaborative engagement between old and existing networks and, consequently, in a decrease in the effectiveness of collaborations (Imai and Yao 2021). Finally, a general ecosystem improvement was also identified in some of the literature included. Brodie et al. (2021) discussed an

improved state of well-being due to superior outputs of the overall health service ecosystem deriving from collaboration and communication. Moreno-Serna et al. (2020) showed that a trustful relationship among stakeholders that were already working together was reinforced, leading to better addressing sustainable development goals.

Generation of proactivity

The policies enacted during COVID-19, and, in particular, the need to avoid physical contact among individuals while ensuring the provision of services, created an environment conducive to a proactive rethinking of service delivery and overcoming acquired forms of organizational resistance. Nineteen studies suggested that proactivity was important in designing, providing, and adapting services to the lockdown policies. Governmental organizations and communities were compelled to proactively rethink health and social care services (Albert, William, and Webster 2020). Services were modified to be more tailored to users' needs in different settings such as education (Mackenzie et al. 2021), health (Cox et al., 2021) and social care (Baginsky and Manthorpe 2020; Echeverria et al. 2020).

Some papers suggested that pre-existing technological knowledge and infrastructures helped the rapid adaptation of services. For example, Echeverria et al. (2020) analysed how the readaptation of an existing app developed to support vulnerable patients before COVID-19 helped manage the pandemic in care centres. Similarly, Dhala et al. (2020) analysed the rapid adaptation of a previous virtual telehealth programme to support the care of severely symptomatic patients in a safer environment and promote high-quality relationships between patients and their families. Existing infrastructures and capacities were referred to as important to adapt and respond to community needs during the lack of reliable information (Shi et al. 2020)

Vulnerabilities of stakeholders were also identified as an enabling factor in triggering this mechanism. Guan et al. (2021) found that the digital divide among patients mobilized a local community in collecting technological hardware to support patients' access to health services. Finally, Narla, Surmeli, and Kivlehan (2020) explained that resilience triggered by vulnerability supported the adaptation capabilities of beneficiaries that led to an overall improvement of the services when beneficiaries were involved.

Adaptation capabilities and resilience were key characteristics that supported proactivity and, consequently, the development of new health technologies (Narla, Surmeli, and Kivlehan 2020), redeployment of existing technologies (Dhala et al. 2020), new business strategies (Heinonen and Strandvik 2020), tailoring existing service delivery to new circumstances (Driscoll et al. 2020; Singh et al. 2020) and creative community responses (Simula et al. 2021), leading to improved care in some of the cases (Dhala et al. 2020; Echeverria et al. 2020; Sarkar 2021). Rao et al. (2020) pointed out that policies addressing the health emergency allowed organizations to implement unprecedented remote working protocols, overcoming staff resistance, while Lindsay et al. (2021) explored how policies to fight the spread of the COVID-19 virus enacted telehealth services. Furthermore, Cox et al. (2021) suggested that the staff involved in restructuring the delivery of nursing services acted proactively to develop conditions to reconcile their working experiences with an acceptable level of health risk. However, de la Cruz et al. (2020) highlighted that proactivity brought higher transaction costs for

both organizations and communities involved, leading to the loss of autonomy in some cases (Albert, William, and Webster 2020)

Development of new means of communication

The turbulence created by COVID-19 forced national governments to develop exceptional policy measures. The need to avoid physical contact among individuals while ensuring the provision of services created an environment conducive to a proactive implementation of digital technologies. Eighteen studies found that the policies enacted to contain the pandemic triggered a shift in how social innovation actors exchanged communications. Social innovation initiatives often organized in physical spaces were forced to adopt online instruments to ensure a safe space for all stakeholders involved (Archer-Kuhn et al. 2020). These instruments became very important not only in the communication between staff members (Brey et al. 2020) but also in the communication with service users and care givers (e.g. Collica-Cox and Molina 2020; de Jonge, Kloppenburg, and Hendriks 2020).

The development and adaption to new means of communication were influenced by whether pre-COVID-19 policies promoted investment in health services. The literature included in this review suggests that lack of investment, particularly in health technologies, influenced the effective establishment and roll out of telehealth services. For example, Fisk, Livingstone, and Winona Pit (2020) found that more significant investments in telehealth before COVID-19 favoured a more straightforward establishment of these initiatives after the virus outbreaks, whereas poorer investments determined implementation barriers. An important enabling factor was identified in the stakeholders' capabilities and existing assets. Some of the literature suggested that existing technological knowledge and infrastructures helped the rapid adaptation of the services. For example, Echeverria et al. (2020) analysed how the readaptation of an existing app developed to support vulnerable patients before COVID-19 helped manage the pandemic in care centres. Similarly, Dhala et al. (2020) analysed the rapid adaptation of a previous virtual telehealth programme to support the care of severely symptomatic patients in a safer environment and promote high-quality relationships between patients and their families. Moreover, the pre-existence of partnerships across health systems facilitated the effective communication shift, moving more quickly from physical spaces to online ones (Brey et al. 2020; Lin et al. 2020).

Some of the papers showed that the change in the communication means led to increased openness and collaboration between organizations and service users (Liu and Tong 2020), more effective and rapid coordination between stakeholders and reduced waiting time (Feeley et al. 2020; Lin et al. 2020), less psychological pressure in comparison with face-to-face meetings (Driscoll et al. 2020), and better involvement of families and patients in the service delivery (Driscoll et al. 2020). In some instances, through the development of new means of communication, families shifted from being caregivers to become more involved in designing care services (Lightfoot and Moone 2020). Other papers found a more active involvement of the patients with self-monitoring and self-management practices, which led to more tailored services (Paterson et al. 2020). New means of communication also affected modes of access to services. Specific categories of beneficiaries, such as prisoners, were able to attend a wide variety of services such as court dates, attorney appointments, academic courses

and non profit programmes (Collica-Cox and Molina 2020); students benefited from extra curricula experiences and experts living in wide variety of countries (Wang et al. 2020); staff gained the skills of delivering online education (Yang and Huang (2021). Other papers also discussed how shifts in communication acted as equalizers when accompanied by the support of digital capabilities of patients and families (Paterson et al. 2020), representing a promising pathway to increased access to care (Loubet et al. 2020).

However, some papers also suggested that the change in communications deeply affected the quality of some of the services delivered. For example, de Jonge, Kloppenburg, and Hendriks (2020) described the difficulties of moving social work services (and education) online due to the challenges of implementing effective services for some beneficiaries. Some studies identified that the new ways of communicating negatively impacted the effectiveness of services for which assessing verbal behaviour and in-depth conversations became impossible, leading to a deterioration of the services delivery quality (de Jonge, Kloppenburg and Hendricks 2020; Hintze et al. 2021). In some cases, the digital transformation crowded out people struggling with access to technology or the most vulnerable communities (de la Cruz et al. 2020), with the consequent risks of exclusion and health deterioration (Albert, William, and Webster 2020).

Resource (re-)combination and bricolage

Twelve studies highlighted that COVID-19 disruption and related policies favoured the implementation of bricolage processes, consisting of combining and recombining physical, human, and financial resources. This mechanism was very connected and related to the reinforcement of new and existing partnerships. Different stakeholders and communities brought knowledge, expertise, and networks that were skilfully combined to co-create new services (Racher and Brodie 2020; Arslan et al. 2021), develop new products (Corsini, Dammicco, and Moultrie 2021) and rethink the delivery of existing services (Guan et al. 2021; Hasler et al. 2020).

Some of the papers identified that pre-covid policies, capabilities of stakeholders and knowledge about previous epidemics favoured the implementation of bricolage processes. Lack of state capacity and institutional constraints deriving by austerity policies triggered bricolage processes as the only way to address the scarcity of institutional responses (Arslan et al. 2021). Aluisio et al. (2020) and Chui and Albert (2021) described leadership, vision, network and expertise of different organizations as conducive to sharing and pooling resources (Aluisio et al. 2020; Chui and Albert 2021; DiGuseppi et al. 2021), while experiences of previous epidemics were identified as supporting recombination of resources based on existing systems (Ekzayez et al. 2020)

Bricolage processes were identified as leading to innovation in service delivery (Arslan et al. 2021; Baginsky and Manthorpe 2020; Brodie et al. 2021) and in the medical equipment production (Corsini, Dammicco, and Moultrie 2021). For example, Kinsey et al. (2020) analysed in depth how the combination of experiences of schools and communities was fundamental in providing innovation for delivering meal services during school closure. Corsini, Dammicco, and Moultrie (2021) used the lens of frugal innovation, which is highly interrelated with bricolage, to explore the pool of unexpected resources in developing new medical equipment.

Elicitation of emotions- specific motivations

Nine studies suggested that COVID-19 disruption and policies enacted elicited emotional responses and communal ethos and motivation. The elicitation of emotions was highly interconnected with the activation of new partners and the related bricolage processes. Some studies identified that different stakeholders, in particular individuals and organizations that are not usually involved in social innovation, felt the need to use their expertise and generosity to address the surge of needs (Batat 2021; Heinonen and Strandvik 2020). For example, Guardo et al. (2021) found that a humanitarian spirit encouraged researchers' motivation to commit to building new ventilators, while Wang et al. (2020) observed an increased sense of solidarity between students in addressing changes in the university system. Similarly, Doolittle et al. (2020) and Khor et al. (2020) suggested that the stakeholders appeared to work together through a *corps d'esprit* and a culture of action leading to a sense of higher purpose and meaningful engagement. The elicitations of emotions described by Garcia-Huidobro et al. (2020) were determined by the sense of urgency and the fear of becoming sick, while Ming and Sidel (2020) identified in the lack of institutionalized non profit response, the activation of solidarity movements.

Discussion and conclusion

In this paper, we explored whether and how social innovation initiatives worked, for whom and under what circumstances during turbulent times. We did this by conducting a systematic literature review that has analysed social innovation dynamics that occurred during the first year of the pandemic, taking COVID-19 as an instance of turbulence where *'events, demands and support interact in highly variable, inconsistent, unexpected and unpredictable ways'* (Ansell, Trondal, and Øgård 2016, 78). Our work builds upon the social innovation literature, which is still mostly fragmented and anecdotal (Pel et al. 2020), and the public administration literature that calls for exploration and evidence of collaborative governance dynamics to address high level threats and turbulent problems (Ansell, Sørensen, and Torfing 2020; Dunlop, Ongaro, and Baker 2020). Before exploring our findings, we do acknowledge that our study suffers from limitations, partly due to methodological choices. First, we chose to employ only peer-reviewed sources to build our set of records; although grey literature could have provided additional information, we preferred to rely on scientific production which undertook a peer review process as an assurance of higher reliability. In addition to that, we recognize the limitation about the time span of our search, limited only to publications available during the first year of the pandemic: that was, however, the moment in which the event could have been considered as a paradigmatic case of turbulence. Interestingly, the acceleration of academic papers publication during the pandemic allowed to screen and include a high range of papers ($n = 59$ papers in one year) compared to systematic review undertaken on social innovation (see for example Adro and Fernandes 2022 that for example included 331 publications in almost 50 years of research (on average six publication per year). Third, we are aware that due to the very choice of method used, only results (observable or not) reported in the papers have been included in our analysis and longitudinal examination of collaborations can't be reported. Finally, systematic reviews are probably best suited to analyse relatively homogenous forms of public policy intervention, ideally with clearly defined outcome measurements. As highlighted in the introductory

sections of this paper, social innovation is a fluid concept capturing a wide range of collaborations. We attempted to address this to some extent through imposing specific social innovation definitions for studies to be included.

Table 1 summarizes our findings by detailing how social innovation works in the ‘base case’ - normal times – according to the extant literature (first column), to then outline how it worked under conditions of a turbulent event, according to the analysis of the papers included in our review (second column). **Table 1** also proposes tentative high-level statements – in a middle-range theorizing fashion – that may suggest how social innovation might work in future turbulent events (third column), to then sketch elements for a possible future research agenda (fourth column) for each main area of findings.

The contours of five possible areas for middle range theorizing have emerged from the findings of our research. Each of them is detailed in turn, interpreting the findings reported in Column 2 (conditions of COVID pandemic-induced turbulent times) by comparing them with the widely held ‘common wisdom’ (based on the literature) about what happens in normal times (Column 1), on one hand, and with speculative propositions about what might happen under conditions of other turbulent times, i.e. driven by other factors than a COVID-like pandemic (Column 3). We also detail some policy and practice implications for each of the five areas and we then conclude by discussing the profile of a possible research agenda (Column 4).

As a first area of findings, it is observed that in normal times collaborations among different actors are recognized in the literature as complex, slow to produce outcomes and by no means guaranteed to deliver synergies and advantages (see Vangen 2017). Our review suggests that challenges related to COVID-19 disruption and policy responses seem to solve certain paradoxes of collaborative contexts (Vangen 2017), identified also in crisis situations (Hart and Lars 2019), by reconciling actors’ interests towards a common strategy and effort, being these adapting/creating services or designing and producing medical equipment. Existing partnerships were reinforced, and new actors were involved in social innovation initiatives. Findings from the papers included in our review showed that this dynamic was particularly relevant in contexts in which actors had a cognitive legacy of previous experiences of pandemics or where partnerships had already been in place. This is line with some of the crisis management literature, which highlights that crisis might develop a window of learning and opportunities for policy reform (Hart and Lars 2019).

Thus, we can tentatively theorize that in *turbulent times, competing interests are solved or at least overcome and collaborative advantage is achieved by existing and new actors involved in social innovation, leading to developing more tailored-to-needs services, generate new products, adopt new services, and increase participation of service users and families. Second, the individual and organizational learning, acquired in facing turbulent events, reinforce the capability of stakeholders to address, through collaboration, future crises.* However, one paper also showed that this mechanism can also lead to exclusion of new networks and dissipation of social capital. Policy makers should then support change in the configuration of the systems where social innovation actors are located to favour the establishment of long-standing partnerships. For example, new commissioning processes and new co-creation dynamics should be established to favour collaboration instead of competition. Processes to support the access to collaboration of new actors should also be promoted. Stakeholders involved in the social innovation initiatives during turbulent times should reflect upon the learning achieved during the pandemic to explore how to use it in future crises as well as in normal times.

Table 1. Summaries of findings.

Normal Times	COVID Pandemic-Induced Turbulent Times	Speculative Propositions about Future Turbulent Times	Research Agenda
<p>Collaborations among partners are very complex and there are often competing interests that hinder the achievement of collaborative advantage (Vangen 2017; Huxham and Vangen, 2004)</p>	<p>There is a reconciliation of actors' interests towards a common strategy, such as adaptation of services, designing new products, with the recognition (and achievement) of a collaborative advantage.</p> <p>This is especially developed in contexts where there was a cognitive legacy of previous turbulence.</p>	<p>In turbulent times, competing interests are solved or overcome and collaborative advantage is achieved by actors involved in social innovation leading to developing more tailored-to-needs services, generate new products, adopt new services, and increase participation of service users and families.</p> <p>The individual and organizational learning, acquired in facing turbulent events, reinforce the capability of stakeholders to address, through collaboration, future crises.</p>	<p>Further research could explore whether the collaborative advantage achieved during turbulent time will be sustained in the long-term, or whether achievements obtained in the initial response will be reversed when turbulence becomes normalized.</p> <p>Further research could investigate whether learning that occurred during turbulent times continues to shape organizational behaviour when relapsing into normal times, thus sustaining their capability of achieving collaborative advantage and effective collaborations.</p>
<p>Proactivity is one of the factors of entrepreneurial orientation and it is used by non-profit organizations to improve their own performance through perseverance, adaptability, and tolerance in the face of possible failures (Do Adro et al., 2020; Turpin and Shier, 2021)</p>	<p>Proactivity becomes a mechanism connected to resilience, adaptation and resistance leading to innovation in services process and/or products.</p> <p>Organisations had to go out of their comfort zone to address turbulence</p>	<p>In turbulent times, actors involved in social innovation may react to the challenges with a proactive dynamic, characterized by resilience, adaptation, and resistance, leading to the development of more tailored need services, the adaptation of existing services and the creation of safe space for stakeholders. At the same time, it also generated high transaction costs.</p>	<p>Further research could consider the characteristics of organizations and individuals that are initiators and drivers of proactivity (e.g. entrepreneurial orientation).</p> <p>Further research could explore if organizations that went out of their comfort zone during turbulent times improved their entrepreneurial orientation when back to normal times.</p> <p>Further research could understand how resilience, adaptation and resistance are combined to activate a proactive dynamic in turbulent time.</p>

(Continued)

Table 1. (Continued).

Normal Times	COVID Pandemic-Induced Turbulent Times	Speculative Propositions about Future Turbulent Times	Research Agenda
Social innovation often uses reflexive and experimental physical spaces to implement initiatives (Pel et al. 2020)	During the pandemic, it was impossible or very hard to use physical spaces, thus social innovation actors changed their means of communication, shifting to online spaces, leading to both positive and negative outcomes in service quality.	In turbulent times, online spaces may have the potential to act as an equalizer in social innovation accessibility and engagement of different actors, leading to positive results, but only when all the stakeholders involved have digital and technological skills and capabilities and online mediation doesn't interact negatively with the need of beneficiaries and patients.	Further research could investigate how and under what circumstances using new ways of communication leads changes in services quality and stakeholders' engagement Further research could explore if the new means of communication will stay in the long-term as reflexive and experimental opportunity, and how they will interact with physical spaces.
Social innovations typically involve the recombination of pre-existing and new ideas, concepts, or technologies to form something novel (Castro-Arce and Vanclay 2020).	A mechanism of both knowledge and resource brokerage provided both a forum for knowledge sharing as well as an arena for negotiation and decision-making at both local and macro level, leading to innovation,	During turbulent times, a bricolage mechanism happens, including in particular actors that are not usually involved in social innovation initiatives, leading to rapid development of new products and services adaptation.	Further research could explore the outcomes deriving by bricolages processes to understand if the combination of scarce resources among actors leads to changes in services quality.
Emotions can stir individuals to devote time, effort, and resources to social innovation, and in particular to the causes that individuals feel committed to (van Wijk et al. 2019)	In turbulent times, people emotions and common ethos towards addressing a communal threat were triggered, helping to embed people in shared projects and initiatives. Vulnerable people developed a sense of resilience and communal ethos that made them even more committed to specific causes.	In turbulent times, people, even the ones that usually are not involved in social innovation, feel more motivated to devote their time, effort and resources and become embedded in projects and initiatives.	Further research could investigate if people will continue to be embedded in projects and initiatives during normal times (long-term sustaining of emotions and common ethos) Further research could explore If being involved in common ethos-building dynamics during turbulent times will reinforce back emotions and common ethos and improve indirectly the life of the individuals involved.

Third, in normal times, proactivity is described in the literature as a way by which organizations overcome their structural barriers, take effective decisions and improve their performance (see for example do Adro et al. 2021; Aaron and Shier 2020). The studies included in this review showed that during COVID-19 proactivity became a mechanism related to adaptation, resistance, and resilience towards the challenges posed by the turbulent event, leading to the development of more tailored need services, the adaptation of existing services and the creation of a safe space for stakeholders. While the crisis management literature also identifies resistance and resilience as part of managing the unexpected (Weick et al. 2015), the connection with proactivity and the avoidance of ‘bouncing back’ were specifically related to addressing turbulent events (Lund and Andersen 2022). Organizations should adapt dynamically and be transformed to attain organizational goals in the face of the challenge and stress presented by turbulent events (Lund and Andersen 2022). We found that organizations stepped out of their comfort zone. However, some articles have also shown that pre-COVID-19 policies, such as austerity, negatively influenced the presence of infrastructure and stakeholders’ capabilities that led to reducing the extent of change that proactivity was able to achieve. Moreover, the transactions costs that proactivity generated on the stakeholders involved might affect their long-term sustainability. Thus, we can theorize that *in turbulent times actors involved in social innovation may react to the challenges with a proactive dynamic, characterized by resilience, adaptation, and resistance, leading to the development of more tailored need services, the adaptation of existing services and the creation of safe space for stakeholders. At the same time, it also generated high transaction costs.* Policy makers should then support this mechanism by increasing investments in the care sector such as health, education, and social care, to unleash the potentiality of changes enacted by proactivity and reduce the transactions costs that stakeholders might face. Stakeholders should reflect upon the proactive dynamic established during turbulence and replicate similar dynamics in developing and managing social innovation during normal times.

Fourth, social innovation in normal times often uses experimental physical spaces to implement initiatives (Pel et al. 2020). Our findings show that during COVID-19 there was the need to shift towards online spaces, with a change of communication means that led to both positive and negative results. The studies included in this review suggest that while this shift fostered the engagement of specific actors, including for example young people or patients with specific characteristics, the development of a safe space for staff and the creation of more tailored needs services in cases of high digital divide negatively affected the relationship with patients and beneficiaries, the quality of services rapidly deteriorated and the most vulnerable communities became excluded. Thus, we can theorize that *in turbulent times, online spaces may have the potential to act as an equalizer in social innovation accessibility and engagement of different actors, leading to positive results, but only when all the stakeholders involved have digital and technological skills and capabilities and online mediation doesn’t interact negatively with the need of students, beneficiaries, and patients.* Policy makers and actors involved in social innovation initiatives should support all stakeholders to acquire the digital skills that can help use effectively online communication as a new experimental space in which actors can collaborate and promote their health and well-being. In addition to that, the change in communications means should always be backed up and supported by physical spaces, to avoid, as some of our findings show, the exclusion and deterioration of services for some beneficiaries.

Fifth, according to the literature, in normal times social innovation involves a bricolage mechanism, which consists of the recombination of pre-existing and new ideas, concepts or technologies to form something novel (Castro-Arce and Vanclay 2020; Olsson et al. 2017; Witell et al. 2017). The same mechanism has been identified in our review, showing a knowledge and resource brokerage dynamic. In addition to that, during the turbulent time, resource recombination involved not only existing partners but also new actors, such as countries with previous experience of pandemic, private organizations, and individual citizens. We can then theorize that in turbulent times, *a bricolage mechanism happens, including in particular actors that are not usually involved in social innovation initiatives, leading to rapid development of new products and services adaptation*. Policy makers and stakeholders should enable the involvement of new actors in social innovation processes, favouring their inclusion in supporting policy and services design, through the development of processes that are more open to the integration of ideas and resources from a wide range of civil society actors.

Sixth, individuals' emotions in normal times are at the heart of the motivation to devote time, effort and resources to the causes they feel committed to (van Wijk et al. 2019). The studies included in our review suggest that during COVID-19 there was a shared ethos and motivation towards addressing a common threat. This helped people become more engaged in shared initiatives that supported the development of safe spaces and individuals' well-being. Some of the papers in our review showed, for example, that vulnerable people developed a sense of resilience that made them more committed to specific causes. Thus, we can theorize that in turbulent times, *people, even the ones who usually are not involved in social innovation, feel more included and motivated to devote their time, efforts, resources and become involved in projects and initiatives leading to innovation and individuals' well-being*. Policy makers and stakeholders involved in social innovation should make use of these emotional responses by engaging individuals in sharing their time, effort, and resources in solving societal issues.

Future studies might explore our claims wrought out in middle-range theorizing fashion by collecting primary data. The middle range theories developed can be tested to better disentangle the mechanisms and their relationship with context (both at macro, meso, micro level), through collection of primary data. A potential theoretical framework to use might be the Coleman's Boat model (Cowen et al. 2022) to explore if the mechanism identified in our research are situational, action-formation or transformational and how through their interaction macro level changes can be sustained in the long-term. Studies could analyse whether collaborative advantage gained during turbulent times is sustained over the longer-term, leading to transformative change, or whether social innovation actors will return to struggle to collaborate once turbulent events become the norm. Also, future studies could explore how the macro contextual variables such as the socio-economic and welfare characteristics of the countries where those collaborative advantages have been gained influence the sustainability (or lack thereof) of social innovation. Future research could also look at how the learning acquired leads to transformative changes by impacting on the capabilities of organizations to collaborate, their entrepreneurial orientations and the use of new means of communication as reflexive and experimental spaces. Proactivity can be examined by focusing upon the characteristics of organizations and individuals that are initiators and drivers of the mechanism or by exploring how resilience, adaption and resistance are combined and are interrelated as a bundle of mechanisms. Further research should also explore the circumstances under which using new ways of communication can

lead to transformative changes in services quality and the kinds of results bricolage processes involving new actors can achieve and sustain during the successive waves of the pandemic. Finally, future research could also focus on understanding how being involved in social innovation during a turbulent time can influence individuals' engagement in initiatives and the impact on their health and well-being.

To conclude, our findings confirm that social innovation initiatives might be one of the processes to favour during turbulent times. Policy makers and practitioners should invest before, during and after turbulent events in policies and strategies that reinforce partnerships (new and existent), increase proactivity of people and organizations, facilitate a smooth change in communication, favour the combination of different resources and increase technological and leadership capabilities of people involved in social innovation. Creating a favourable environment for social innovation initiatives alongside channelling people emotions and leveraging the cognitive legacies acquired during the COVID pandemic may enable more effective ways to address the challenges of the future.

Disclosure statement

No potential conflict of interest was reported by the authors.

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