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RESEARCH ARTICLE

Crisis as a catalyst: how the pre-existing values of entrepreneurs shape strategic crisis responses

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Abstract This study contributes to theorizing efforts on how social and environmental considerations integrate into crisis preparedness, crisis response, and resilience. Specifically, we explore how the strategic crisis response of small and medium-sized enterprises (SMEs) is shaped by the pre-existing values of entrepreneurs. We interviewed the leaders of 29 SMEs operating in the construction, manufacturing, and high-technology industries in the UK. We employed a multi-stage pattern matching approach to increase the transparency of the steps taken during the qualitative data analysis. We identified four higher order patterns with distinct variations in how SMEs respond to crisis, as well as in the entrepreneurial drivers and values associated with the decisions made. These are the following: (1) business continuity through economic prioritization, (2) profit-driven crisis response with opportunistic sustainability considerations, (3) crisis response anchored in established sustainability values, and (4) evolving through established sustainability values. We draw on the business-responsibility matrix that provides a structured way to analyze and compare firm responses to crises, making visible the link between actions, entrepreneurial values, and sustainability orientation.

Plain English Summary Values shape how small businesses respond to crises. This study explores how the personal values of small- and medium-sized business (SME) leaders influence their response to crises, especially when it comes to social and environmental concerns. Based on interviews with 29 business leaders in the UK across construction, manufacturing, and tech, the research identifies four distinct patterns of crisis response. Some businesses focused only on staying afloat and protecting profits. Others added in sustainability efforts when it seemed profitable. A third group responded based on long-standing sustainability values, while a fourth used the crisis as a chance to deepen their commitment to those values. The study uses a framework called the

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businessresponsibility matrix to show how leaders' values influence both their crisis decisions and their approach to sustainability. In sum, sustainability can be a powerful strategy for long-term resilience, but putting it into practice is not always easy. Challenges like financial limitations or pressure from partners can create gaps between intention and action. SMEs are encouraged to embed sustainability into their long-term planning and to lead with empathy and compassion, which helps maintain trust and resilience. These insights also re-enforce the role policy makers can play in supporting SMEs through regulations and creating economic opportunities, such as sustainable public procurement.

Keywords Complex crisis · Sustainability orientation · Deeply responsible business · Business-responsibility matrix · Environmental value · Social value · Pattern matching

JEL Classification L26 · M14 · Q56 · Z13

1 Introduction

This paper uses the crisis response and business continuity literature as an entry point into the conversation on sustainability-oriented entrepreneurial values (e.gAudretsch et al., 2023; DiVito & Ingen-Housz, 2021). Although crises may drive entrepreneurs and other ecosystem actors to acknowledge the importance of sustainability, small and medium-sized enterprises (SMEs) are vulnerable because of their size and innate resource constraints (cf. Etemad, 2020; Spigel, 2022). These inherent disadvantages, coupled with the pressure for rapid response, exacerbate the challenge to survive (Eggers, 2020; Koppel & Tšernikova, 2022). Therefore, it is not surprising that the predominant focus of studies investigating the crisis responses of SMEs focus on economic survival.

The literature prior to the onset of the COVID-19 pandemic in 2020 largely suggests that SMEs adapt and leverage their firm strategies, resources, and capabilities to navigate resource limitations and capitalize on immediate crisis-driven opportunities. Frequently adopted crisis response strategies include down-scaling and cost-reduction, or innovation and revenue generation (cf. Battisti et al., 2013; Nogueira et al., 2018; Tambunan, 2019). The strategic approaches identified by research conducted after the initial shock of the pandemic similarly focused on economic aspects and operational continuity (Klyver & Nielsen, 2021). For example, Clauss et al. (2022) find that short-term changes to the business model to meet the demands of a new situation allowed firms to survive. Puthusserry et al. (2022) identify four strategies aligned with SMEs' organizational lifecycle, design, and context. Xie et al. (2022) highlight the positive role of digital platforms in fostering business model innovation and the capability reconfiguration of SMEs.

Despite the significant value of these insights, the question of how social and environmental considerations integrate into crisis preparedness, crisis response, and ultimately resilience needs further investigation (Etemad, 2020). The growing social and environmental challenges that add complexity to the business operating environment reinforce the importance of this question (Sinkovics & Archie-Acheampong, 2020). Therefore, the inter-linkages between political, economic, and social–ecological crises need to be acknowledged in investigations (cf. Sinkovics et al., 2022a, 2022b; Van Tulder & van Mil, 2023). Furthermore, a closer examination of the role of business responsibility-related values in how entrepreneurs respond to crises is required. In complex crises, heightened uncertainty arises, where linear thinking and rules derived from pre-crisis experiences may have limited relevance (cf. Bansal et al., 2021; Etemad, 2020; Grewatsch et al., 2021). Under such circumstances, entrepreneurs and top management teams are likely to turn to their intrinsic value system as a source of guidance (Jones, 2023; Van Tulder & van Mil, 2023). However, organizations that solely focus on economic survival may struggle to adapt in a changing environment where social and environmental issues are not only harder to ignore, but addressing them is increasingly an expectation because of shifting societal values (Audretsch & Fiedler, 2024; Sinkovics et al., 2022a, 2022b).

Against this background, this study examines how entrepreneurs' pre-existing values shape crisis responses alongside their strategies, decision-making mechanisms, and operational competencies. Specifically, what is the role of these pre-existing values in shaping the extent to which economic, social, and environmental considerations are incorporated during SMEs' crisis responses? We use the COVID-19

pandemic, interlaced with the added challenge of Brexit (the UK's exit from the European Union) and the United Kingdom's declaration of an environment and climate emergency as our empirical context. The economic and constitutional implications of the pandemic both reinforced and magnified the political and economic effects of Brexit (Smith, 2021). Public pressures, including climate protests and the launch of David Attenborough's documentary *Climate Change: The Facts*, pushed the UK to become the first country to declare a climate emergency (Turney, 2019), a symbolic act signaling a shift in societal values. This series of interconnected crises provides a suitable context for the investigation of how macro-level, complex challenges shape the economic, environmental, and social activities of SMEs (Belitski et al., 2022). Therefore, these crises present appropriate empirical conditions to identify mechanisms that link macro-level crises to sustainability-oriented decision-making in SMEs.

This paper contributes to the literature in multiple ways. By drawing on the business-responsibility matrix (Sinkovics et al., 2021b), we provide a more nuanced understanding of the interplay between entrepreneurial values, sustainability orientation, and SMEs' crisis response. This study further offers a practical demonstration of the business-responsibility matrix as a diagnostic tool. From a methodological perspective, our study contributes significantly by meticulously documenting the distinct steps in a multi-stage qualitative pattern matching approach (Sinkovics, 2018; Sinkovics et al., 2022a, 2022b). We interviewed directors and senior leaders of 29 SMEs in the UK.

2 Conceptual background

Figure 1 illustrates the multi-stage pattern matching process. The process starts with a rigorous review of the literature to identify the main conceptual building blocks and their initial operationalizations (see Tables 1 and 2, Fig. 2). Together these form an initial analytical framework, also called expected patterns, which are later matched to observations in the empirical data. This process provides a transparent approach to theorizing. It is a rigorous, yet flexible way of documenting the iterative movement between the theoretical and observational realms. The detailed conceptualization and initial operationalization of key dimensions allow the articulation of how the observations in the empirical data are different from the expectations based on the existing literature. Simultaneously, the flexibility of the analytical process enables the capture of unexpected insights or those only implicitly foreshadowed in literature.

Based on our review of the crisis response and business continuity literature, we expect that SMEs will prioritize the economic aspects of sustainability in their crisis preparation and crisis responses.

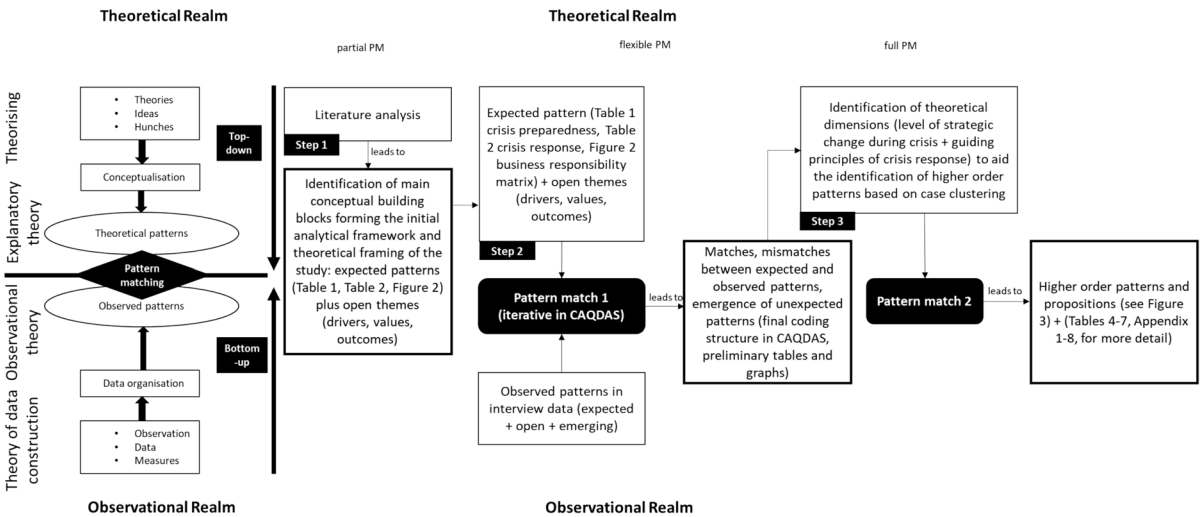

Fig. 1 The multi-stage pattern matching process. Source: Adapted from Sinkovics (2018) and Sinkovics et al., (2022a, 2022b)

Table 1 Expected crisis preparedness mechanisms for SMEs

Dynamic capabilities influencing organizational ability to innovate and reconfigure	Asset management capabilities	- Asset alignment (Dai et al., 2017; Fainshmidt et al., 2017; Li et al., 2011; Radway et al., 2011) - Asset co-alignment (Dai et al., 2017; Fainshmidt et al., 2017; Li et al., 2011; Radway et al., 2011) - Asset realignment (Dai et al., 2017; Fainshmidt et al., 2017; Li et al., 2011; Radway et al., 2011) - Asset redeployment (Dai et al., 2017; Fainshmidt et al., 2017; Li et al., 2011; Radway et al., 2011; Wang et al., 2020)
	Dynamic managerial capabilities	- Systematic change of the resource base (Bamiatzi et al., 2016; Fainshmidt et al., 2017; Frank et al., 2017; Landini et al., 2020; Wang et al., 2020) - Continuous orchestration of resources to extract more value from the firm's resource pool (Bamiatzi et al., 2016; Fainshmidt et al., 2017; Frank et al., 2017; Landini et al., 2020; Wang et al., 2020) - Configuration of resources to match the market (Bamiatzi et al., 2016; Fainshmidt et al., 2017; Frank et al., 2017; Landini et al., 2020; Wang et al., 2020)
	Political capabilities	- Assessment and understanding of political dynamics (Holburn & Zelner, 2010) - Navigation of relationships with political actors (Holburn & Zelner, 2010) - Application of mental models for environmental interpretation (Holburn & Zelner, 2010) - Application of mental models for guiding actions (Holburn & Zelner, 2010)
Organizational contingency procedures	Adaptation strategies	- Exploration via leveraging assets, competencies and knowledge (Osiyevskyy et al., 2020) - Exploitation via developing new assets, competencies and knowledge (Osiyevskyy et al., 2020)
	Change management	- Delegation of rights and responsibilities to capable, collaborative and empowered workers to determine and implement creative changes (Sung, 2011) - High-level leadership and ownership support of change, placing new initiatives at the forefront of the corporate agenda (Sung, 2011) - Preparation for resistance (Sung, 2011) - Provision of training and education (Sung, 2011)
	Continuity strategies	- Attainment and evaluation of deep knowledge from stakeholders and wide knowledge from other external actors (Radway et al., 2011) - Adaptation of strategic and managerial and operational processes to dealing with crises (Deverell & Olsson, 2010) - Development of flexible crisis management plans to fashion antecedents into actions (Tennant, 2011) - Preconfigured operational contingency initiatives and proactive planning to construct comprehensive and inclusive crisis management plans (Ghaderi et al., 2015; Hurley-Hanson, 2006) - Risk minimization and avoidance of risky projects as crisis onsets (Kraus et al., 2012)

Table 1 (continued)

	Long-term planning	- Commitment of assets to the development of key competencies in the longer term (Singh & Yip, 2000) - Enhancement of key competencies to position firm for growth post crisis (Singh & Yip, 2000) - Difficulty in establishing valuable operation retention (Singh & Yip, 2000) - Key staff member retention (Singh & Yip, 2000) - Investments in activities building brand name maintenance (Singh & Yip, 2000) - Key supplier and customer relationship maintenance (Singh & Yip, 2000) - Continued stakeholder negotiations (Berthon, 2010) - Employee input in strategic decision-making (Lampel et al., 2014) - Tighter coupling between operational feedback and strategic direction (Lampel et al., 2014) - Analysis of best practices in other countries (Sung, 2011) - Customer interviews and visits (Sung, 2011) - Competitor benchmarking (Sung, 2011) - Economic modelling of reviewed business needs (Sung, 2011)
	Crisis monitoring and collection of political intelligence	- Organizational monitoring of political initiatives in response to crises (Barron et al., 2012) - Breadth and span of policies monitored to ensure all adjustments are anticipated (Barron et al., 2012)
	Uncertainty management	- Risk management to reduce uncertainty effects: cooperation, networking, proactive collaboration, information gathering (Sharma et al., 2020) - Strategic management to cope with uncertainty effects: flexibility via operational adaptation and diversification, imitation of competitors, reactive collaboration, control, avoidance (Sharma et al., 2020)
Organizational culture	Adhocratic culture	- Culture based on expert orientations (Deverell & Olsson, 2010) - Culture of flexibility allowing for easy adaptation to crisis (Deverell & Olsson, 2010; Metaxas et al., 2018) - Externally focused culture (Deverell & Olsson, 2010; Metaxas et al., 2018)
	Clan culture	- Flatter organizational structure with a higher number of individuals between the top and bottom layers, promoting a family- or tribe-type internal culture among organizational actors (Sabatino, 2016)
	Culture facilitating continuous improvement	- Efficient processes (Pal et al., 2014) - Lean processes (Pal et al., 2014) - Lead-time reduction focus (Pal et al., 2014) - Product focalization and total quality management (Afthonidis & Tsiotras, 2014)
	Culture facilitating soft learning	- Attentive leadership (Pal et al., 2014) - Collective organizational approach to resilience (Pal et al., 2014)
Strategic orientation	Entrepreneurial orientation	- Allocation and augmentation of resources in entrepreneurial fashion (Kraus et al., 2012; Laskovaia et al., 2019) - Ability to identify means of developing competitive advantage (Beliaeva et al., 2020; Kraus et al., 2012) - Proactivity (Beliaeva et al., 2020; Kraus et al., 2012) - Propensity to risk-taking (Beliaeva et al., 2020; Kraus et al., 2012)
	Growth orientation	- High levels of expertise in sector/industry (Fuertes-Callén & Cuellar-Fernández, 2019; Honig, 2001) - Increased flexibility (Fuertes-Callén & Cuellar-Fernández, 2019; Honig, 2001; Pal et al., 2014)
	Market orientation	- Accrual and use of information from customers (Lettice et al., 2014; Naidoo, 2010) - Strategy to meet consumer needs (Lettice et al., 2014; Naidoo, 2010) - Implementation of responsive strategy to customer wants/needs (Lettice et al., 2014; Naidoo, 2010)

Table 2 Expected crisis responses mechanisms for SMEs

Actions focused on cost cutting to counter uncertainty	Down-scaling processes	- Decreased research and development activities (Latham, 2009; Shen & D'Netto, 2012) - Development of alternative working arrangements (i.e. switch to working from home) (Tambunan, 2019) - Easing marketing campaigns for products/services with strong brand identity and market presence (Latham, 2009) - Switching focus to core market and home market and scaling back exploration of new geographical and industrial markets (Cerrato et al., 2016; Shen & D'Netto, 2012) - Reducing hiring and employment efforts (Cowling et al., 2015; Smallbone et al., 2012) - Reducing investment in direct sales efforts, alliances and channel efforts (Latham, 2009; Shen & D'Netto, 2012)
	Financial management	- Controlling customer solvency by reducing the collection period of sales (Battisti et al., 2013; Li et al., 2011) - Optimizing cost structure in accordance with sales volume (Li et al., 2011) - Reducing dependency on external financing/increasing reliance on internally generated funds (Li et al., 2011) - Reducing debt owed to external sources via settlement methods (Battisti et al., 2013) - Reducing unnecessary outgoings by freezing wages/salaries, selling idle assets and reducing training and development, working times and workforce (Battisti et al., 2013; Fabiani et al., 2015; Lai et al., 2016; Tambunan, 2019)
	Structural changes	- Flattening organizational structure by reducing employee numbers, with networks and clusters used in the role of employees (Jankelová et al., 2018) - Reorganization of management structure toward decentralization (Battisti et al., 2013; Zhu & Warner, 2001) - Separating ownership from management (Zhu & Warner, 2001)
Actions focused on revenue generation	Expansion of value proposition to capture new value	- Expanding entrepreneurial orientation from opportunistic discovery and resourcefulness to resourcing via entrepreneurial activities (Honig, 2001; Korsgaard et al., 2016) - Implementing commercial innovations through the adoption of new marketing policies stipulating changes to product, price, promotion and positioning with the launch of new, innovative products and services (Alegre & Berbegal-Mirabent, 2016; Archibugi et al., 2013; Battisti et al., 2013; Kraus et al., 2012; Madrid-Guijarro et al., 2013; Nogueira et al., 2018) - Implementing marketing innovations via differentiation and cost leadership strategies to develop and sustain competitive advantage (Alegre & Berbegal-Mirabent, 2016; Archibugi et al., 2013; Kraus et al., 2012; Naidoo, 2010) - Investing in strategies to improve customer relations (Estrada-Guillen et al., 2020; Naidoo, 2010) - Investing in strategies to improve the social capital of the firm's direct community by building trust and relationships among firms, governments, non-governmental actors and other stakeholders via meaningful engagement (McKnight & Linnenluecke, 2016; Torres et al., 2019; Williams & Shepherd, 2018) - Investing in consistent and non-cyclical research and development strategies through new product/service development and acquisition of new staff members (Jung et al., 2018; Latham, 2009; Martinez et al., 2019; Park et al., 2019) - Shifting toward disaster entrepreneurship, providing goods and services to community stakeholders (Linnenluecke & McKnight, 2017)

Table 2 (continued)

Market expansion/diversification	- Adopting collaborative innovation strategies and sharing complementary competencies and resources with collaborating firms (Wang et al., 2020) - Capturing customers that were previously underserved/underappreciated with marketing push and channel transformation (e.g. from offline to online) (Smallbone et al., 2012; Wang et al., 2020) - Creating additional sales channels for new market entry and capturing new customer bases (Smallbone et al., 2012; Tambunan, 2019) - Developing new business to meet specific needs arising from crises for existing customers and capturing new customers (Smallbone et al., 2012; Wang et al., 2020) - Investing in direct sales efforts, alliances/partnerships and channel efforts (e.g. collaborating with other firms to develop new businesses by combining internal advantages of digital resources with external complementary resources of partners) (Latham, 2009; Smallbone et al., 2012; Wang et al., 2020) - Investing in strategic mergers and acquisitions (Martin-Rios & Pasamar, 2018)
Improving and/or expanding the resource base	- Acquiring and exploiting temporary arbitrage opportunities (Beliaeva et al., 2020; Desai et al., 2008) - Investing in plant capital and raising capacity levels (Beliaeva et al., 2020; Honig, 2001) - Recruiting new staff members (Beliaeva et al., 2020; Smallbone et al., 2012) - Replacing old equipment (Beliaeva et al., 2020; Zhu & Warner, 2001) - Training staff members to acquire specific skills (Beliaeva et al., 2020; Metaxas et al., 2018; Zhu & Warner, 2001) - Investing in customer support and service (Latham, 2009) - Reinvesting profits in anticipation of future organizational strategies to emerge from crisis (Li et al., 2011)

Under extreme conditions, such as natural disasters or adverse business environments, social and environmental considerations may be used to mitigate economic uncertainty and risk. In summary, the studies we reviewed emphasize traditional entrepreneurial values of opportunity recognition and exploitation over higher level business responsibility values. The following sections discuss in detail the mechanisms of crisis preparedness and crisis response, as well as how the lens of business responsibility helps in understanding the integration of sustainability considerations into these processes.

Fig. 2 Business-responsibility matrix. Source: Sinkovics et al. (2021b)

Depth (impact/meaningfulness of action)

Width (business model centrality)

Associative Activities	Peripheral Activities	Operational Activities	Embedded Activities
Delinquent	Delinquent	Delinquent	Delinquent
Neutral	Neutral	Neutral	Neutral
Nascent	Nascent	Nascent	Nascent
Enhanced	Enhanced	Enhanced	Enhanced
Advanced	Advanced	Advanced	Advanced

2.1 Organizational crisis preparedness

Table 1 provides an overview of four organizational crisis preparedness mechanisms identified in the crisis response literature. First, dynamic capabilities support a firm's ability to innovate and reconfigure its resources and processes to respond to crises (Frank et al., 2017; Landini et al., 2020; Radway et al., 2011). They facilitate process efficiency and ambidexterity in high-velocity and moderately dynamic environments (Frank et al., 2017). Dynamic managerial capabilities, along with asset management capabilities, allow managers to orchestrate assets and extract greater value from the resource pool of the firm (Dai et al., 2017; Fainshmidt et al., 2017; Li et al., 2011). Political capabilities refer to a firm's ability to identify shared interests among stakeholder groups and organize them into coalitions capable of substantially influencing government policies (Holburn & Zelner, 2010).

Second, organizational contingency procedures ensure organizations are proactive in the monitoring of crises and subsequently implement effective strategic changes (Barron et al., 2012). They include adaptation strategies (Osiyevskyy et al., 2020), change management procedures (Sung, 2011), continuity strategies (Ghaderi et al., 2015; Hurley-Hanson, 2006; Tennant, 2011), long-term planning (Lampel et al., 2014) and uncertainty management (Sharma et al., 2020). Effective strategic planning (Hong et al., 2012; Vargo & Seville, 2011) is an important enabler of any contingency procedure.

Third, the organizational culture of the firm can shape its crisis preparedness. Organizations with an adhocratic culture are more likely to implement behaviors that will continue post crisis-response because their flexibility and focus on expertise and the external environment facilitate their adaptation (Deverell & Olsson, 2010; Metaxas et al., 2018). Firms that adopt a clan-like culture, where the internal culture of the firm is based on family or tribal principles, will be better positioned to implement new behaviors. This is because their flatter structures allow all organizational actors to be fully involved in change and decision-making (Sabatino, 2016). As crises often manifest as a decrease in the resource base of firms, an organizational culture that promotes continuous improvement (Afthonidis & Tsiotras, 2014; Sabatino, 2016) creates efficiency and improves quality. Attentive leadership and a collective organizational approach to resilience facilitate the soft learning processes required for the firm to adapt to new political and economic conditions (Pal et al., 2014).

Finally, prior studies identify several strategic orientations leading to better crisis preparedness. Firms possessing strong entrepreneurial (Laskovaia et al., 2019), growth (Fuertes-Callén & Cuellar-Fernández, 2019), or market orientation (e.g. Lettice et al., 2014) are expected to have a greater understanding of customer needs, increased flexibility and a propensity to risk-taking, meaning that they will be proactive in identifying and developing competitive advantage when faced with political-economic, or other complex, crisis (Kraus et al., 2012). However, Korsgaard et al. (2016) highlight how the characteristics of opportunism and resourcefulness associated with entrepreneurial orientation are ineffective when responding to environmental, economic, and social crises.

2.2 Organizational crisis response

Table 2 summarizes the organizational crisis responses identified from the literature. The two main response mechanisms include cost cutting and revenue generation. Firms adopting cost cutting responses are likely to downscale their operations in response to reduced consumer demand (Shen & D'Netto, 2012). Organizations may shift their focus to their core business propositions and home markets, scaling back exploration activities in new industrial and geographical markets (Cerrato et al., 2016). To lower costs, organizations might simplify marketing campaigns if their products and services have a well-established brand identity and market presence (Latham, 2009). Firms adopting cost-cutting behaviors are also likely to focus on financial management. By controlling the solvency of customers through reductions in sales collection periods, companies can reduce their dependency on bank credit and improve working capital (Li et al., 2011). A reduction in reliance on external funding can help better match costs with sales volumes (Li et al., 2011). Other measures include a reduction of working times, adoption of alternative working arrangements, sales of idle assets, scaling back training and development, and laying off non-essential workers (Tambunan, 2019).

Cost-cutting can involve structural changes, such as creating a flatter organizational structure by reducing employee numbers and utilizing networks and clusters to address knowledge gaps (Jankelová et al., 2018). Decentralization and a separation of ownership from management were further identified as examples of structural changes as crisis response (Zhu & Warner, 2001).

Although cost cutting can serve as revenue generation because it protects financial reserves in areas that can withstand cuts (Tambunan, 2019), revenue-generating behaviors are more likely to ensure firm survival if their purpose is to create value (Naidoo, 2010). We identified three mechanisms in this category: expanding the firm's value proposition to capture new value, expanding or diversifying the markets that the firm operates in, and maintaining, improving or expanding the financial, physical or human resources of the firm.

A strategy to enhance their value proposition during times of crisis is to tap into resources in new or alternative locations or to use them in new ways (Alegre & Berbegal-Mirabent, 2016; Korsgaard et al., 2016). This results in changes in how a firm acquires its resources or responds to opportunities (Honig, 2001; Korsgaard et al., 2016; Torres et al., 2019) or as a change in marketing and commercial strategies to launch new products and services or improve customer relationships and social capital (Archibugi et al., 2013; Battisti et al., 2013; Estrada-Guillen et al., 2020; Williams & Shepherd, 2018).

Another form of organizational revenue generating behavior may focus on diversifying or expanding the markets that they operate in (Wang et al., 2020). In doing so, firms can develop new business opportunities, build collaboration with wider networks, and capture new customer bases. For example, Tambunan (2019) and Smallbone et al. (2012) demonstrate how firms might seek to enter new markets, that are less affected by crises, to capture new customer bases, and account for any negative economic impact in the original operating markets.

Organizations may also focus on maintaining and investing in the internal resource base of the firm to generate revenue. Firms can exploit temporary arbitrage opportunities to build their financial resources, although this is a more likely response for larger firms (Beliaeva et al., 2020; Desai et al., 2008). Investments in operational resources (Beliaeva et al., 2020; Zhu & Warner, 2001) and human capital (Metaxas et al., 2018) can also place businesses ahead of competitors if demand in an area increases during the political-economic crisis. Improvements or expansions of the resource base tend to be complemented with actions that ensure the maintenance of key resources post-crisis (Latham, 2009). Organizations following a revenue generation path frequently reinvest their profits to support their new organizational strategy when moving out of the crisis (Li et al., 2011).

2.3 The role of business responsibility in crisis preparedness and response

Despite the predominant focus on the economic aspects of the business model for crisis preparedness and response in SMEs within the literature, social and environmental considerations are not entirely absent. Oetzel and Miklian (2017) examine risk management in conflict-affected areas. They propose that by adopting peacebuilding strategies, firms not only decrease investment risk, but they also do good for the communities in which they operate. Therefore, embracing social sustainability as part of the business model can create competitive advantage. Moneva-Abadía et al. (2019) and Magrizos et al. (2021) find that sustainability strategies can aid SME survival during economic crisis, especially when there is competency in stakeholder management.

Stakeholder management and collaboration also emerged as an important theme in the context of natural disasters. McKnight and Linnenluecke (2016) conceptually examined the relationship between firm resilience and community resilience. They distinguish between three responses: business continuity, corporate philanthropy, and disaster response. They argue that each response can vary in the degree to which firms only see the short-term advantages from crisis response as preserving their current business model, as opposed to gaining longer term advantages through stakeholder engagement. The central proposition is that firms are more likely to shift from being solely firm-centric to becoming more community-centric if they work closely with important community stakeholders when disaster strikes. Although businesses with a community-centric approach may be driven by a sense of moral duty and compassion, both approaches ultimately prioritize the organizational benefits they derive from disaster response.

This is consistent with disaster entrepreneurship, that can be defined as the identification and exploitation of entrepreneurial opportunities in the wake of disasters (Monllor & Murphy, 2017). Building on this concept, Linnenluecke and McKnight (2017) explored the strategic orientation of firms in their natural disaster response. They put forward a typology of four approaches. Entrepreneurial business continuity focuses on maintaining or resuming operations. Scaling of operational responses entails the activation of response structures put in place before the disaster or the provision of goods and services to those in immediate need. Improvising refers to an ad hoc change in roles to adapt to the crisis. Emergence refers to unique firm responses triggered by the disaster manifesting as creating new products or services or the creation of a new venture to meet resource needs (Linnenluecke & McKnight, 2017). Although there is a positive outcome for the community, the emphasis is still on the exploitation of economic opportunities.

Similarly, Aarstad et al. (2022) favor an economic explanation of their findings over a dissection of underlying business responsibility-related values. They observed that Norwegian firms with a high-level sustainability orientation displayed a strong response to the COVID-19 crisis even though they were not significantly affected by the pandemic. They attributed this finding to firms' ability to proactively recognize opportunities.

Therefore, while social and environmental considerations are not absent from the crisis preparedness and response literature, there is an emphasis on traditional entrepreneurial values over higher order business responsibility values (cf. Jones et al., 2007; Sinkovics et al., 2021b; Van Tulder & van Mil, 2023). The role of entrepreneurs' pre-existing business responsibility-related values in shaping the extent to which these considerations are incorporated into SMEs' crisis responses is not explicitly explored. However, understanding the role of business responsibility values in shaping SMEs' decisions and actions will provide a more nuanced explanation of firm responses to crises beyond the more traditional emphasis on opportunity recognition and exploitation (cf. Jones, 2023; Sinkovics et al., 2015; Van Tulder & van Mil, 2023).

In this study, we draw on the business-responsibility matrix, a diagnostic tool, proposed by Sinkovics et al. (2021b), to map firms' sustainability-related actions. The matrix allows the analysis of firm actions alongside a width and depth dimension (see Fig. 2 for illustration). This enables a deeper analysis of the range and meaningfulness of actions and supports the teasing out of mechanisms that link macro-level crises to sustainability-oriented decision-making in SMEs.

The width of an action relates to the business model centrality of sustainability-oriented activities, while the depth refers to their impact. Actions can be categorized as associative, peripheral, operational, and embedded in terms of width. Associative activities refer to a firm's involvement in networks, partnerships and collaborations connected to a specific cause (e.g. standard setting, lobbying). Peripheral activities are voluntary and outside of regulatory compliance (e.g. donations). Operational activities are part of the business model and refer to the transformation of inputs into outputs, including the supporting activities that are connected to them. Embedded activities directly relate to products and services.

Each action also has a depth dimension, which captures their external impact. Delinquent action knowingly creates harm. Neutral actions neither cause harm nor have a positive impact. Nascent actions create some positive impact, but these are mainly superficial. Enhanced actions create a more meaningful impact. They address important symptoms of a root cause. Advanced actions target the root causes of issues and create the most meaningful impact compared with the other depth categories. The business-responsibility matrix is thus a tool to map and track sustainability-related actions in relation to a firm's business model and impact. We propose that the application of the business-responsibility matrix in our empirical analysis will provide valuable insights into the relationship between crisis preparedness, crisis response, and entrepreneurial values.

3 Methods and data

Sinkovics (2018) offer a framework categorizing pattern matching approaches into three different categories: partial pattern matching, flexible pattern matching, and full pattern matching. Partial pattern matching begins with the data and focuses on identifying patterns that emerge during the analysis. Data is broadly defined and can include literature sources only. Positioned between partial and full pattern

matching, flexible pattern matching brings together a deductive element with an inductive element. It starts with theoretical patterns derived from a literature review, which are then compared to empirical data. Mismatches or unexpected patterns drive further theorizing and potential theory development. Full pattern matching involves alternative theoretical explanations against empirical data to identify the most accurate explanation or to identify conditions under which they hold. In qualitative research, it requires the operationalization of concepts (Bouncken et al., 2021; Sinkovics, 2018). The multi-stage pattern matching approach integrates partial, flexible, and full pattern matching, enabling the study to explore theoretical constructs rigorously while remaining open to unexpected findings (cf. Sinkovics et al., 2022a, 2022b).

This study employs a multi-stage pattern matching approach. Figure 1 outlines the multi-stage pattern matching process, consisting of three main steps: (1) identifying conceptual building blocks and expected patterns based on a review of the literature (partial pattern match), (2) iterative comparison of expected and observed patterns using computer assisted qualitative data analysis software (flexible pattern match), and (3) identifying theoretical dimensions and higher-order patterns through manual clustering (full pattern match). Manual clustering involved grouping cases based on the two emergent theoretical dimensions: level of strategic change during the crisis and guiding principles of crisis response.

This approach is particularly valuable in exploratory studies where substantial literature exists on certain dimensions, but not enough to derive testable hypotheses. Additionally, or alternatively, some aspects of the research question can only be answered through inductively obtained patterns from empirical observations. A fully inductive investigation, however, is not necessary, because there is prior knowledge on the phenomenon that offers at least partial alternative explanations (Bouncken et al., 2021; Sinkovics, 2018). Therefore, this approach offers a structured investigation of the phenomenon while maintaining the flexibility to capture unexpected findings. The inductive element also allows for exploring certain questions in depth, where the pre-existing literature does not offer sufficient insights or further investigation is required.

The dimensions identified and described in the conceptual background section constitute the initial, expected patterns in our study. The role of expected patterns is to aid the data analysis by forming an initial analytical framework. We employed a theoretical sampling method (Gehman et al., 2018). Our aim was to identify cases where the focal phenomenon was likely to occur and where similarities and differences across cases could support our theorizing efforts (Eisenhardt & Graebner, 2007). Thus, we selected UK SMEs from three different industries, manufacturing, construction, and high technology, because these industries 1) by nature have a significant impact on the social–ecological environment and 2) were operating under crisis conditions (COVID-19). While there may be industry- or country-specific aspects to this sample, we applied a common process design to improve generalizability. This approach involves choosing cases in purposefully different settings surrounding the same focal phenomena, improving the transferability of the emerging theoretical insights across settings (Eisenhardt, 2021).

We identified and negotiated access to suitable SMEs by advertising our study on professional networks for each industry. Further selection criteria included (1) 250 or fewer employees, (2) the interviewee holds a leadership and decision-making position (i.e., CEO, director, owner-manager), (3) the firm should operate in either the construction, manufacturing, or high-technology industry, and (4) the firm should be based in the UK. As our initial efforts yielded a low response rate, we applied a snowballing technique to recruit further suitable SMEs to take part in our study. We interviewed directors and senior leaders across 29 SMEs between July 2020 and November 2021. Ten firms operate in the construction sector, nine in the manufacturing sector, and ten in the high-technology sector. Table 3 summarizes the characteristics of each case firm.

We used a semi-structured interview guide to (1) capture the crisis management mechanisms used by the SMEs, (2) identify the role of social and environmental considerations in this process, and (3) explore how entrepreneurial values shape crisis response. The open-ended questions provided the space required to account for the complexities involved in analyzing how the SMEs in our sample respond to the crisis. We performed the data analysis using the qualitative data analysis software NVivo 14. Through the pattern matching process, first we used the initial expected patterns to identify the crisis preparedness and crisis response mechanisms alongside firms' sustainability-oriented actions. We tracked the

Table 3 Overview of the case firms

Case	Industry	Role of interviewee	Location	Employees	Firm age (years)	Main products or services offered by the firm
CO1	Construction	Director	Cheshire, UK	105	50	Design and build services
CO2	Construction	Director	West Midlands, UK	7	30	Civil engineering
CO3	Construction	Chairman	East Midlands, UK	10	35	Design and build services
CO4	Construction	Director	London, UK	7	5	Construction project management
CO5	Construction	Director	Herefordshire, UK	12	12	Design and build services, consultancy, project management services
CO6	Construction	Director	Greater Manchester, UK	45	40	Design and build services and civil engineering
CO7	Construction	Director	Greater Manchester, UK	240	22	Design and build services
CO8	Construction	Director	Cheshire, UK	20	17	Civil engineering
CO9	Construction	Director	Greater Manchester, UK	240	50	Design and Build services, plant hire, plant servicing and landfill
CO10	Construction	Director	Greater Manchester, UK	13	30	Civil engineering and plant hire
MA1	Manufacturing	CEO/Director	Cardiff, UK	20	28	Production of environmental packaging
MA2	Manufacturing	Director	Bristol, UK	9	8	Production of advanced robotics
MA3	Manufacturing	CEO/Co-Founder	London, UK	25	2	Production of industrial machinery
MA4	Manufacturing	Director	West Midlands, UK	70	26	Production of sustainable packaging
MA5	Manufacturing	Founding Partner	Greater Manchester, UK	2	7	Production of equipment for use in the oil and gas industry
MA6	Manufacturing	Director	London, UK	100	25	Production of industrial appliances and LED Systems
MA7	Manufacturing	Director	West Midlands, UK	100–150	47	Production of plastic components
MA8	Manufacturing	Director	South Wales, UK	23	80	Production of metal components
MA9	Manufacturing	Director	Greater Manchester, UK	79	50	Production of various precision machined components
TE1	Tech	CEO	Greater Manchester, UK	8	10	Provision of physical hardware, big data analysis, water technology
TE2	Tech	CEO/Founder	Greater Manchester, UK	7	3	Provision of SaaS, sensors, analytics tools for smart agriculture
TE3	Tech	Director	Greater Manchester, UK	50	5	Provision of a cloud-based platform to connect business to business enterprise
TE4	Tech	CEO/Director	Greater Manchester, UK	130	11	Provision of cloud-based platform supporting green energy
TE5	Tech	Director	Greater Manchester, UK	35	5	Provision of data analytics and AI for business improvement
TE6	Tech	CEO/Founder	Greater Manchester, UK	7	2	Provision of inclusive social platforms for women, e-commerce platform selling associated products
TE7	Tech	CEO/Founder	Greater Manchester, UK	100	10	Provision of cloud-based platform to support business to business and business to customer retail brands
TE8	Tech	CEO/Co-Founder	Greater Manchester, UK	12	6	Provision of E-commerce, data analytics, and technology-driven marketing
TE9	Tech	CEO	Greater Manchester, UK	10	3	Provision of a cloud-based platform to facilitate business-related travel

Table 3 (continued)

Case	Industry	Role of interviewee	Location	Employees	Firm age (years)	Main products or services offered by the firm
TE10	Tech	Founder	Greater Manchester, UK	10	8	Provision of platform allowing businesses or individuals to create their own applications

change in sustainability-related actions pre- and post-crisis. We also recorded the corresponding entrepreneurial drivers and values alongside the outcome of the crisis response. Once this initial pattern matching process was concluded, we conducted a cross-case analysis that led to the identification of four higher order patterns and the development of propositions.

4 Patterns of value-driven SME crisis response

The multi-stage pattern matching process (see Fig. 1) revealed four higher-order patterns of SME crisis response. The resulting four by four (see Fig. 3) is structured around two key dimensions: the guiding principles of crisis response and the level of strategic

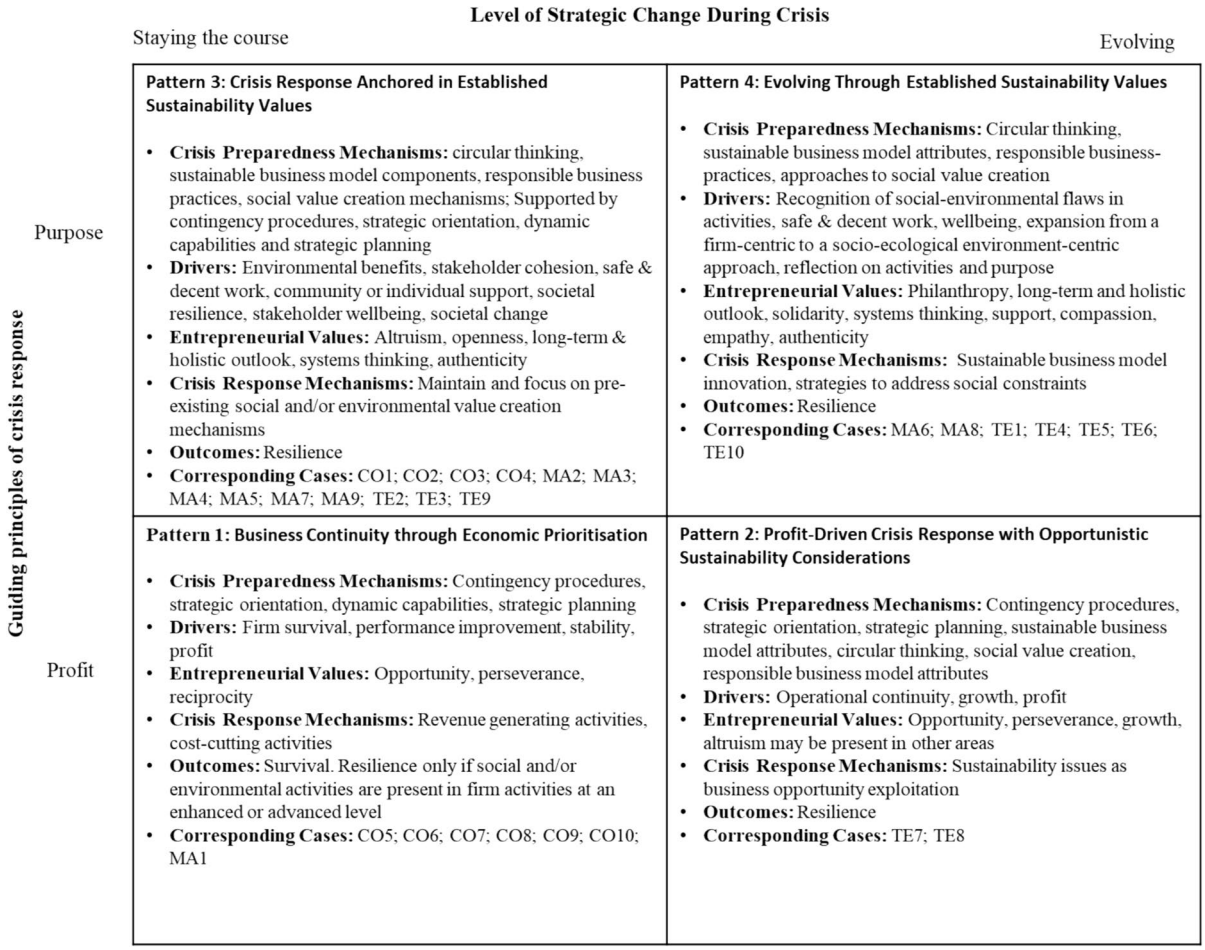

Fig. 3 Patterns of value-driven SME crises response. Note: See Tomlinson and Sinkovics (2025) for a summary of findings at individual case level

change during the crisis. The guiding principles dimension categorized respondents into two broad groups: profit-driven and purpose-driven. The level of strategic change dimension distinguished between maintaining the pre-crisis trajectory and adopting a new course. Together, these dimensions provide insights into how SMEs in our sample navigated the crisis.

Mapping the identified sustainability-related actions, pre- and post- crisis, onto the business-responsibility matrix (see Tables 4, 5, 6, 7) enabled a more holistic theorizing about the intersection of entrepreneurial values and sustainability-oriented actions. Appendix 1–4 (see Tomlinson & Sinkovics, 2025) provide individual case summaries for each company. Appendix 5–8 (see Tomlinson & Sinkovics, 2025) elaborate on the information contained in Tables 4, 5, 6, and 7.

SMEs in Patterns 1 and 2 primarily focused on economic value creation or retention, and operational continuity during crisis. The crisis preparedness and response mechanisms of these enterprises prioritized firm-level interests; other considerations took a secondary role in relation to profit-seeking. However, as opposed to Pattern 1, where firms solely focused on business continuity through economic prioritization, firms in Pattern 2 perceived social and/or environmental considerations as an opportunity to gain financial benefits.

In contrast, firms in Patterns 3 and 4 were driven by an overarching focus on purpose. They demonstrated a more evolved interpretation of business responsibility. In Pattern 3, SMEs stayed on their pre-crisis strategic trajectory and continued their social and/or environmental value creation already built into their business models. Pattern 4 firms ramped

Table 4 Scenario 1 through the lens of the business-responsibility matrix

Width of responsibility	Associative		Peripheral		Operational		Embedded	
Depth of responsibility	Pre-crisis	Post-crisis	Pre-crisis	Post-crisis	Pre-crisis	Post-crisis	Pre-crisis	Post-crisis
Neutral	CO6, CO8, CO9, CO10, MA1	CO6, CO8, CO9, CO10, MA1	CO5, CO6, CO8, CO9, CO10, MA1	CO5, CO6, CO8, CO9, CO10, MA1			CO6, CO7, CO8,	CO6, CO7, CO8
Nascent					CO6, CO7, CO8, CO9,	CO6, CO7, **CO8-**, CO9		
Enhanced	CO5, CO7	CO5, **CO7-**			CO5, CO10, MA1	CO5, CO10, MA1		
Advanced			CO7	**CO7-**			CO5, CO9, CO10, MA1	CO5, CO9, CO10, MA1

Case abbreviations in bold signify a change in the post-crisis state of the dimensions compared to its pre-crisis state. Negative and positive signs further denote an increase or decrease (see online Appendix for a case level summary of findings)

Table 5 Scenario 2 through the lens of the business-responsibility matrix

Width of responsibility	Associative		Peripheral		Operational		Embedded	
Depth of responsibility	Pre-crisis	Post-crisis	Pre-crisis	Post-crisis	Pre-crisis	Post-crisis	Pre-crisis	Post-crisis
Neutral	TE7, TE8	TE7	TE7					
Nascent		**TE8 +**		**TE7 +**			TE7, TE8	**TE7-, TE8 +**
Enhanced			TE8	TE8	TE7, TE8	TE7, TE8		
Advanced								

Case abbreviations in bold signify a change in the post-crisis state of the dimensions compared to its pre-crisis state. Negative and positive signs further denote an increase or decrease (see online Appendix for a case level summary of findings)

up social and/or environmental value creating mechanisms during the crisis. They went through a transformative change and their crisis response showed elements of purpose-driven innovation.

4.1 Pattern 1: Business continuity through economic prioritization

Firms in this pattern displayed traditional crisis preparedness and response strategies, emphasizing economic value creation and operational continuity. Construction firms CO6 and CO8 exemplify this approach, focusing on maintaining pre-pandemic operations. CO6's preparedness was driven by dynamic managerial capabilities, long-term planning, and a market-oriented strategy. In contrast, CO8's readiness is attributed to its asset management capabilities and its commitment to contingency procedures, such as adaptation strategies, political, economic, and policy intelligence monitoring, and uncertainty management. Despite this difference, both firms embraced market orientation as a key strategy for crisis preparedness, placing high importance on responsiveness to customer wants and needs. To enhance firm performance amidst the pandemic, both companies implemented cost-cutting measures, primarily centered on downsizing business operations. The UK government's furlough scheme supported these cost-cutting responses:

"We looked at the business. We furloughed the staff that weren't required, or staff that wanted to be furloughed." (CO8).

The factors driving these responses were the need for survival, striving for performance improvement, and maintaining stability amidst the COVID-19 pandemic. Both interviewees (CO6 and CO8) underscored the significance of their perseverance and opportunism in navigating these external shocks.

Although present in their operations, social or environmental considerations did not feature in the crisis preparedness or response mechanisms of the remaining corresponding cases clustering under this pattern. When probed for a reason, CO5 saw social and environmental sustainability as embedded in the laws and regulations and highlighted the firm's compliance with mandated requirements:

> "Sustainability, it depends on what the government mandates, maybe not necessarily government, but certainly like local government. If the local government is demanding certain sustainability standards to be adhered to in construction, then we make sure we offer those services. The Greater London Authority, as an example, has just been quite big on carbon and on measuring carbon impact of buildings. And that's what we do."

Despite traditional crisis responses, most firms in this scenario (CO6, CO7, CO8, and CO9) encountered disruptions during the crisis, with reports of limited resources, decreased work orders, and cash-flow difficulties. Furthermore, their crisis responses did not lead to resilience, only survival. A post-interview follow-up revealed that one of these organizations had ultimately filed for bankruptcy.

In contrast, CO5, CO10, and MA1 show moderate to high resilience despite approaching crisis preparedness and responses similarly. CO5's moderate resilience can be attributed to its smaller size.

The business-responsibility matrix offers additional insights to support the development of an explanation. It reveals that all three firms demonstrated enhanced operational and advanced embedded activities. For example, CO10 displayed lean operations and significant waste reduction that supported the organization's desire to control costs and avoid overspending. In terms of advanced embedded activities, the product and service offering of all three firms have wider social or environmental benefits.

This observation suggests that the adoption of sustainable practices can influence firm outcomes, even if not directly linked to purpose-driven value creation. However, business resilience under crisis will require a combination of at least enhanced operational activities in addition to enhanced or advanced embedded activities. This combination appears to create a synergy that bolsters firm performance under external shocks. To strengthen this proposition further, we draw on insights from CO9. While this firm displays advanced embedded activities, its operational activities can only be categorized as nascent.

Proposition 1: *The combination of enhanced operational activities and advanced embedded activities strengthens a firm's ability to withstand crises even if it's not purpose-driven.*

4.2 Pattern 2: Profit-driven crisis response with opportunistic sustainability considerations

In this pattern, firms also displayed traditional crisis preparedness and response mechanisms. However, they capitalized on opportunities that created social or environmental benefits for their consumers or clients. High-tech firms TE7 and TE8 designed new services to address social issues created or exacerbated by Brexit and the pandemic. For example, TE7 explained how their business grew during the crisis. They identified an increased demand for essential products, several of which were facing shortages due to supply chain disruptions.

"So other than the fact that it made good business sense to grow throughout this time, that also comes with the recognition that actually, what we are offering can help people. Retail isn't just about luxury goods or treats, but equally, people need essential products. So, it was a moral duty as much as a business decision to push for growth at this time because the service we offer helps the end customer get the things they need when they need it." (TE7).

Firm TE8 provides a platform for events booking. To compensate for the loss of events during the pandemic, they adapted their strategy to appeal to their largest consumer market:

"We collect a huge amount of data about our consumers' behavior. We discovered with this a huge appetite for purpose-driven events, particularly in 'millennials' and 'Gen Z', which make up a significant proportion of our sales. And by purpose-driven, I mean events that have an environmental or social benefit or purpose in terms of raising awareness. We acted on this and are actually one of the first platforms that offers significant access to such events." (TE8).

Two key drivers appeared as central to these firms' resilience: opportunity seeking and perseverance. Their new offering filled a need connected to sustainability, and the owners displayed an element of altruism manifesting as caring. However, based on the analysis, the business model did not reflect this altruism in its offering until the crisis presented a business opportunity. Nevertheless, the presence of latent pre-crisis altruism likely amplified the firm's desire to act on this opportunity.

Insights from the business responsibility matrix further reveal that the sustainability-related offering only reached the nascent level. In contrast, both companies demonstrate enhanced operational activities. Additionally, they increased non-business model-related activities connected to sustainability, even if these activities also remain at a nascent level.

Proposition 2: *Pre-existing altruism among firm leaders amplifies the likelihood of seizing sustainability-related opportunities during crises in firms where sustainability is not initially embedded in the business model.*

Proposition 3: *The integration of nascent sustainability-related activities during crises is more likely to lead to firm resilience when firms possess at least enhanced operational capabilities.*

4.3 Pattern 3: Crisis response anchored in established sustainability values

In Pattern 3, organizational resilience during the crisis seems to be a by-product of firms' desire to "encourage a positive change" (TE9) pre-crisis. The main mechanisms for this included the product or service offering and the way they ran their operations. Traditional crisis preparedness mechanisms were present, but predominantly as a supporting function.

For example, the CEO of TE2, a bio-tech firm supporting agricultural development in emerging economies, explained how their integrative approach to sustainability supported organizational resilience during the pandemic, because the crisis highlighted the urgency of sustainability efforts.

"I think, you know, more and more, the bigger corporates are trying to become more, or appear at least, sustainability focused. And so, technologies like ours, that enable things that are on their horizon, that allow us to be more resilient, because there is more sort of sustained interest and this, hopefully, is a direction that people are going in one way and won't just be flavor of the year." (TE2).

Companies in this pattern exhibited a firm commitment to lean and green operations, including waste reduction and energy conservation, which subsequently reduced costs. These SMEs were less financially exposed to the negative effects of the crisis. As an illustration, a participant recounted how a decision, which the organization doubted five years ago, proved instrumental in their ability to withstand surging energy prices during the pandemic.

Table 6 Scenario 3 through the lens of the business-responsibility matrix

Width of responsibility	Associative		Peripheral		Operational		Embedded	
Depth of responsibility	Pre-crisis	Post-crisis	Pre-crisis	Post-crisis	Pre-crisis	Post-crisis	Pre-crisis	Post-crisis
Neutral	CO1, CO2, CO3, CO4, MA2, MA4, MA5, MA7, MA9	CO1, CO2, CO3, CO4, MA2, MA4, MA5, MA7, MA9	CO1, CO2, CO3, CO4, MA2, MA3, MA4, MA5, MA7	CO1, CO2, CO3, CO4, MA2, MA3, MA4, MA5, MA7			CO1, CO4	CO1
Nascent							MA5, MA7, MA9, TE9	MA5, MA7, MA9, TE9
Enhanced	MA3, TE2, TE9	MA3, TE2, TE9			CO2, CO3, CO4, MA2, MA3, MA4, MA5, MA9, TE2, TE3, TE9	CO2, CO3, CO4, MA2, MA3, MA4, MA5, MA9, TE2, TE3, TE9	MA2	**CO4 +,** MA2
Advanced	TE3	TE3	MA9, TE2, TE3, TE9	MA9, TE2, TE3, TE9	CO1, MA7	CO1, MA7	CO2, CO3, MA3, MA4, TE2, TE3	CO2, CO3, MA3, MA4, TE2, TE3

Case abbreviations in bold signify a change in the post-crisis state of the dimensions compared to its pre-crisis state. Negative and positive signs further denote an increase of decrease (see online Appendix for a case level summary of findings)

Table 7 Scenario 4 through the lens of the business-responsibility matrix

Width of responsibility	Associative		Peripheral		Operational		Embedded	
Depth of responsibility	Pre-crisis	Post-crisis	Pre-crisis	Post-crisis	Pre-crisis	Post-crisis	Pre-crisis	Post-crisis
Neutral	MA6, MA8, TE1, TE5, TE10	MA6, MA8, TE1, TE5	MA8, TE1, TE4, TE5	TE1			MA8, TE10	MA8, TE10
Nascent								
Enhanced	TE6	TE6	MA6	**MA6 +, MA8 +, TE4 +, TE5 +**	MA6, MA8, TE1, TE4, TE5, TE6, TE10	**MA8 +, TE1 +,** TE6**, TE10 +**	TE5	TE5
Advanced	TE4	TE4	TE6, TE10	**TE6 +,** TE10		**MA6 +, TE4 +, TE5 +**	MA6, TE1, TE4, TE6	MA6, TE1, TE4, **TE6 +**

Case abbreviations in bold signify a change in the post-crisis state of the dimensions compared to its pre-crisis state. Negative and positive signs further denote an increase of decrease (see online Appendix for a case level summary of findings)

"Five years ago, we invested in solar. This was a joint approach to a new investment in our firm. We also refreshed our equipment at that time. It was expensive, and we invested a significant amount of capital. At the time, we thought that perhaps we had made a mistake. We were sluggish to adopt when tariffs were on a higher feed-in, and our return on investment was not the best, if I am honest. Part of me thought, is this an expensive attempt at being environmentally supportive, that's about to sink the business? Well, I am talking to you now in 2021, and guess what? The return on our investment here is phenomenal. With the energy markets under incredible strain at the minute and this looking to only get worse, we made an investment back then, that not only in terms of our footprint but also that us standing here today thanks ourselves for, despite that at the time it meant a bit of hardship financially. And now we can be resilient, because we don't have the worry of how we can pay for our energy costs when prices keep on rising." (MA7).

Employing an integrative approach to sustainability enabled entrepreneurs to be proactive toward other sources of instability in the operating environment, not just sources of economic or political instability.

"Monitoring of the environment and the collection of intelligence in terms of our operating environment. We try to be both proactive and build this into our long-term planning. Things can change at the drop of a hat in a world that destroys as much as it advances, so you must be flexible." (TE5).

Contingency procedures in this scenario went beyond economic and operational motivations. Specifically, leaders acknowledged that the relationship between the firm and the socio-ecological environment is as important as the firm itself. This realization was the driving force behind crisis preparedness.

Furthermore, firms in this pattern value the quality of openness, which manifests in their leadership style, characterized by communication, transparency, trustworthiness, and support. This approach creates safe and decent working conditions and is further connected to the retention of key staff members through crises, despite competitive labor market conditions. Although influenced by the organization's leader, this behavior can spread throughout the organizational culture and is embedded in long-term strategizing. The following quote effectively captures the sentiments expressed by other participants who advocate organizational openness.

"If your teams trust you to trust them, there's a huge amount of resilience built up in the business. If they're scared to contradict you as a chairman, if they're scared to do their job, if they feel pressured, then that's a short-termism … we've got people who've worked with us for years and years and years and years and years. Why did they do that? Bear in mind that construction is quite a circuitous industry. And people go on a merry-go-round, sometimes weekly, or monthly, quarterly, yearly. If you allow people to have an honest expression of how they feel,

and I say to people, I don't know everything. You know, if I'm wrong, tell me please. And they know that. So, I think honesty and truth equal trust." (CO3).

Insights from the business-responsibility matrix indicate that all case firms in this pattern demonstrated enhanced or advanced operational actions, while their embedded actions varied from nascent to advanced. Some companies complemented their lower-level embedded activities with engaging in enhanced or advanced associative or peripheral activities. However, this is not the case for all firms in this pattern (CO1, MA5, MA7).

Proposition 4: *Firms that embed sustainability practices into their long-term strategies before a crisis are more likely to demonstrate resilience when faced with external shocks.*

Proposition 5: *Firms that actively monitor their socio-ecological environment and integrate flexibility into their long-term planning are more likely to respond effectively to diverse sources of instability.*

Proposition 6: *When leadership characterized by openness, trust, and respect is part of enhanced or advanced operational activities, firms are more likely to achieve organizational resilience by enhancing employee retention and adaptability during crises.*

4.4 Pattern 4: Evolving through established sustainability values

Firms in Pattern 4 also responded to the crisis by building on pre-existing social and environmental activities and values (see Fig. 3). However, as opposed to firms in Pattern 3, Pattern 4 firms leveraged their prior knowledge to innovate their business model and pursue a new strategic trajectory. We can classify the observed sustainable business model innovations into different categories: the value offered, how value is created and delivered, how value is captured, and the intention of the entrepreneurs. Although firms displayed market expansion strategies to increase or generate economic value, the underlying motivation for this approach was not purely economic. Rather, entrepreneurs targeted expansion out of the recognition that their product or service offering could have a significant positive impact on the socio-ecological environment. For example, the CEO of one tech firm explained why they pushed for the adoption of their platform in new markets during the pandemic. The crisis stimulated long-term thinking, not just related to running the organization, but also in terms of future crisis preparedness:

"In terms of environmental, we actually ramped up our campaign and continued to push for the platform to be adopted wider, because the pandemic really highlighted how important renewables are, not just in terms of climate change and finite resources, but also to stop the encroachment of human activities into natural habitats, hence risking health pandemics." (TE4).

Four firms in this scenario revisited the way they created value as a direct response to the crisis. This resulted in a movement toward sustainability in critical operations, resources, channels, customer relations, and/or partner networks. For example, MA8 accelerated their plans to re-shore production activities as a response to the crisis. They recognized that they could reduce the distance between the firm's production and consumption markets. As a result, they cut their negative environmental impact and ensured uninterrupted provision of goods to customers by mitigating transportation and shipping delays.

Besides increasing sustainability efforts in their operations, firms also recognized the importance of areas, such as wellbeing, safety, and looking beyond the firm to the wider environment.

"If management was not exceptionally understanding about people's individual circumstances, and when I say people, I mean, all of our stakeholders, shareholders, customers, and employees, if we didn't have the just compassion, and the empathy for what people were going through, it would have massively impacted our ability to be resilient, because essentially, what we're saying is at that point that yes, there's a crisis going on, we don't care, we still expect certain outcomes, which is an absurd thing to say." (TE1).

Altruism and a deep care for stakeholders emerged as key drivers of firms' strategy. Firm leaders described engaging in charitable actions, such as establishing support groups for teenagers (TE6) or easing social challenges brought about by the crisis. The core focus was on enabling staff members to access treatment and professional support for mental health conditions or wellbeing. This resulted in positive effects that extended beyond the firm into the wider community.

"We realized that the mental impact of Covid on staff members was significant. So, we created a fund to support staff's mental health and wellbeing. Really important because we could not get through without our staff, so we need their wellbeing and health to be on top. We also extended this to the local community, in that we supported local mental health charities with financial input. And in an indirect way, we supported local sport and fitness teams and groups. Because our reasoning is that physical health is important in terms of being fit mentally and physically, and this is really important in the current pandemic." (MA6).

Insights from the business-responsibility matrix reveal that all firms in Pattern 4 significantly amplified their actions. Before the onset of the crisis, they were all at an enhanced operational level and most firms were at an advanced embedded level. During the crisis, they deepened their operational actions by either doing more at an enhanced level or progressing to an advanced operational level. Four firms (TE4, TE6, MA6, TE10) were also active in the associative and/or peripheral domain at an enhanced or advanced level pre-crisis. During the crisis, they maintained or amplified these activities. Other Pattern 4 firms, who mainly focused on deepening their operational and embedded activities pre-crisis, launched into enhanced peripheral activities during the crisis.

Proposition 7: *Firms with enhanced or advanced operational and embedded sustainability practices pre-crisis are more likely to amplify these actions and progress to higher responsibility levels during crises if they are purpose-driven.*

Proposition 8: *Operational adjustments that align sustainability with crisis management enhance both organizational efficiency and environmental sustainability.*

Proposition 9: *Purpose-driven leadership with a high level of altruism and focus on stakeholder care during crises enhances organizational resilience and strengthens the firm's societal impact.*

Proposition 10: *Firms that amplify their actions across multiple responsibility dimensions during crises are more likely to progress toward advanced sustainability practices.*

5 Discussion

The primary aim of this study was to join the academic conversation on sustainability-oriented entrepreneurial values (e.g. Audretsch et al., 2023; DiVito & Ingen-Housz, 2021) through the lens of crisis response and business continuity. Etemad (2020) highlighted that "sustainability and resilience need to become an integral part of all contingency plans as the strength of the collectivity depends on the strength and resilience of the weakest link(s)" (Etemad, 2020: 141). This lesson needs to be heeded at both the institutional and firm levels as they are inter-connected and thus they mutually shape each other (Audretsch & Fiedler, 2024). Although our empirical findings mainly focus on firm level actions, we examined these under crisis conditions, and against the background of specific institutional parameters.

Given its political and economic implications, COVID-19 was a complex crisis, which did not occur in isolation in the macro-environment of the firm. The pandemic reinforced and magnified the political and economic implications of Brexit (Smith, 2021). Concurrently, the awareness of evolving social and environmental crises intensified (cf. UN, 2023). The simultaneous occurrence of these crises—interacting in both expected and unexpected ways and amplifying their effects—is characteristic of the current era of poly-crisis (Davies & Hobson, 2023; Dinan et al., 2024; Jones et al., 2025). Habitat destruction, global travel, intensive livestock farming, urbanization, and the trade of live animals were identified as contributing factors to the emergence and proliferation of COVID-19 (Barouki et al., 2021).

The pandemic also heightened societal awareness of social exclusion and inequality (Bapuji et al., 2018; Jacobs & Mazzucato, 2016). The UK Government responded to the challenges of the pandemic with a "Build Back Better" policy seeking to lead recovery with several innovation-led priorities. Examples include net zero transformation and enabling the cultural, economic, and social regeneration of marginalized towns (Treasury, 2021). Thus, the policy signals for institutional level support of an increase in sustainability orientation were present in the business environment. Viewing the sustainability orientation of entrepreneurs and its impact on their performance in an entrepreneurial ecosystem against the background

of country-level and regional institutional quality is important, because it shapes entrepreneurial action to a certain extent (Audretsch et al., 2023, 2024). Our findings corroborate this observation. Pattern 1 firms who were predominantly profit-driven engaged with sustainability for two main reasons. They were either following government regulations pertaining to sustainability in their operations or exploited business opportunities provided by government priorities; for example, public sector projects that enhance the social or environmental infrastructure of the country.

Audretsch et al. (2023) propose that in the early stages of developing sustainability orientation at the institutional level, pioneering entrepreneurs play an important role in proliferating and reinforcing sustainable values in the ecosystem and may gain a competitive advantage through it. At later stages, once a certain policy threshold is reached, the additional costs of maintaining their sustainability orientation may diminish the return (Audretsch et al., 2023). This is partly because the economic validation of sustainable business models will likely attract competition from established industry players (Audretsch & Fiedler, 2024), and partly because firms need to invest into capability development and physical resources (Sinkovics et al., 2021a, 2021b, 2021c). We contribute new insights by incorporating crisis conditions into our empirical observations and enhancing the analytical framework with the business-responsibility matrix, which adds nuance to the analysis. While the findings section presents propositions derived from specific patterns of SME crisis responses, the following discussion synthesizes these insights to draw cross-pattern conclusions.

We propose that the pre-crisis maturity of sustainability practices in operational and embedded responsibility dimensions strengthens a firm's ability to withstand crises, regardless of whether it is profit- or purpose-driven. Therefore, being purpose-driven does not seem to be a necessary condition for positive value creation when a certain degree of societal shift has already happened toward sustainability orientation (Audretsch & Fiedler, 2024). Under those conditions, incorporating sustainability into the business model becomes an externally-driven future proofing strategy anchored in linear thinking (Sinkovics et al., 2021a, 2021b, 2021c; Van Tulder & van Mil, 2023). From a theoretical perspective, profit-driven crisis responses are consistent with disaster entrepreneurship observed during and immediately after natural disasters (Linnenluecke & McKnight, 2017). The business responsibility matrix suggests that where the integration of sustainability practices is primarily driven by profit seeking, firms are less likely to widen their responsibilities beyond the operational and embedded spheres.

In contrast, purpose-driven firms are aware of the long-term consequences of not integrating sustainability into their business models. Their efforts will be underpinned by systems thinking (Sinkovics et al., 2014, 2015; Van Tulder & van Mil, 2023) defined as a "holistic perspective that acknowledges that the relationships between the components and the environment are as important (in terms of system behavior) as the components themselves" (Monat et al., 2020, p. 2). As opposed to linear thinking, systems thinking recognizes that behavioral patterns derive from systemic structures, thus emphasizing self-organization and emergence (Monat & Gannon, 2015). In this vein, the firm is recognized as a system, forming part of a larger system (Checkland, 1999), and interacting with other systems (Sinkovics et al., 2015).

The crisis responses of purpose-driven firms indicate the presence of deep responsibility (Jones, 2023; Sinkovics et al., 2015; Van Tulder & van Mil, 2023). Deeply responsible business leaders regard business "as a way of improving society, and even solving the world's problems" (Jones, 2023: 4). They recognize the importance of engaging with stakeholders with respect and humility. They also understand the importance of community and do whatever they can to support its thriving (Jones, 2023). Therefore, we propose that while the pre-crisis maturity of sustainability practices shapes firm behavior during and after crises, purpose-driven firms can rapidly advance from nascent to enhanced or advanced practices across multiple responsibility categories during crises. Furthermore, we posit that firms able to balance width (associative to embedded) with depth (enhanced or advanced) will achieve the most comprehensive and long-lasting crisis responses. Peripheral and operational responsibilities play significant roles in creating immediate, actionable responses, while embedded and associative responsibilities ensure long-term systemic benefits.

Furthermore, our analysis highlights the importance of behavioral aspects of crisis preparedness and response, focusing on 'people-centered' management elements such as empowerment, loyalty, and listening

to the voices of organizational members (Gadenne & Sharma, 2009; Khan & Naeem, 2018). A managerial outlook characterized by authenticity, support, compassion, empathy, self-reflection and understanding also co-occurred with crisis responses that stimulated positive social and environmental outcomes–and with observed organizational resilience. This finding aligns with thought pieces, suggesting that sustainability and resilience can be cultivated during a crisis through a mutually supportive and sensitive relationship among policymakers, managers, and employees (Rašković, 2022; Van Assche et al., 2020). The distinctive way these entrepreneurs and SMEs develop relationships with internal and external stakeholders allows them to withstand the pressure of crisis without breaking the system. The ability to self-reflect and communicate effectively can also enhance resilience, as it helps individuals and organizations adapt and respond to challenges (Hartmann et al., 2020). Therefore, cultivating psychological capital is essential for SMEs' crisis response. This is because a positive psychological state leads to innovation and creativity during crisis (Grözinger et al., 2022). Furthermore, this positive outcome can spill over to other co-located firms (Belitski & Desai, 2016).

6 Conclusions, future research, and managerial implications

Our study contributes to the emerging literature on how crisis can act as an external enabler for productive entrepreneurship (cf. Davidsson et al., 2021; Monllor & Murphy, 2017). We do so by examining how SMEs navigate an external crisis by establishing entrepreneurial values as a driver of successful crisis response. Previous studies have explored how the personal resilience of entrepreneurs supports the resilience of the firm (e.g. Branicki et al., 2018). However, survival is frequently associated with business level rather than individual level attitudes (Korber & McNaughton, 2018). Our study brings together both individual and firm level aspects and shows how crises can act as catalysts for aligning a business more closely with the entrepreneur's core values. When these values also align with societal needs and are supported by a significant portion of the population, this synergy fosters innovation, enabling the business to move beyond mere survival and uncover new growth opportunities that balance economic, social, and environmental sustainability.

Thus, we contribute to theorizing efforts on how social and environmental considerations integrate into crisis preparedness, crisis response, and resilience. By drawing on the business responsibility matrix, we show the importance of considering both the width and depth dimension of sustainability-oriented, responsible action when investigating firm responses under complex crisis conditions. Merely assessing the presence or absence of firms' sustainability orientation would not have provided sufficient detail to recognize nuances across clusters of firms. Our study also contributes methodologically by documenting the steps of a multi-stage qualitative pattern matching approach. It not only increases the transparency of the steps taken during the qualitative data analysis, but future research can also draw on our documentation and outcomes to design follow-up studies with other methods. For example, fuzzy set qualitative comparative analysis (fsQCA) could uncover more refined paths to organizational resilience under crisis conditions. As the primary purpose of this study was to advance theorizing, further research is required to test the relationships our findings identified. Future research can draw on the four higher order patterns and the associated theoretical propositions for large scale quantitative studies.

SMEs are advised to view the integration of sustainability into their operations and value proposition as a future proofing strategy. However, responsible action is not only a function of institutional pressures or the existence of a deeply responsible value system. There may be an intention-realization gap (Van Tulder & van Mil, 2023) resulting from a range of factors including financial constraints, insufficient capabilities, and pressures from value chain partners (Sinkovics et al., 2014, 2021b). Therefore, SMEs are advised to embed sustainability practices into their long-term strategic planning and crisis-preparedness mechanisms. Policy makers can encourage this further by not only strengthening the laws and regulations, but also creating economic opportunities for SMEs through their public procurement channels (Hamilton, 2022). SMEs are also advised to prioritize a compassionate and empathetic leadership style during crises as it emerged as a significant factor in maintaining firm resilience by fostering stakeholder trust and well-being.

In conclusion, this study presents a framework for understanding how pre-existing entrepreneurial values shape SMEs' navigation of economic, social, and environmental considerations during crises, offering valuable theoretical and practical insights into sustainable entrepreneurship.

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Author contribution Olivia Tomlinson: conceptualization, formal analysis, investigation, writing—original draft, writing—review and editing, visualization. Noemi Sinkovics: conceptualization, methodology, writing—review and editing, visualization, supervision. Rudolf R. Sinkovics: writing—review and editing, supervision. Benjamin Fath: conceptualization, writing—review and editing.

Data availability Due to the qualitative nature of the interviews and confidentiality concerns that could compromise participant privacy, the full datasets are not publicly available. However, individual case summaries for Patterns 1 to 4 and the Business-Responsibility Matrix are publicly accessible in the OSF repository at (https://doi.org/10.17605/OSF.IO/A35Z2).

Declarations

Conflict of interest The authors declare no competing interests.

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