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RESEARCH ARTICLE

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Government support, regional well-being, and the pivots of UK SMEs during a crisis

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Abstract

Pivoting—a substantive transformation of the established business model (e.g., reformulation of goods, services, processes, or organizational methods in a new or significantly improved manner)—has emerged as a crisis response strategy of small- and medium-sized enterprises (SMEs). However, SMEs often lack internal resources to make pivots during a crisis; therefore, external resources from the government or regional communities become essential. This study examines how government financial and knowledge support, along with regional subjective well-being (SWB), are—separately and jointly—related to UK SMEs' pivots during the recent crisis of Covid-19. Examining 5894 UK SMEs between September 2020 and April 2021 and using a multilevel approach, we find that SMEs' pivots are positively associated with government knowledge support and, to a lesser degree, with government financial support and that SMEs in regions with higher SWB are likely to make fewer pivots in times of crisis. The positive relationship between government support and pivots is strengthened when SMEs are embedded in regions with higher SWB.

KEYWORDS
crisis, government support, pivot, regional well-being, SMEs

INTRODUCTION

Small- and medium-sized enterprises (SMEs) play a significant role in the UK economy, comprising 99% of all firms and employing 60% of the private sector workforce (NESTA, 2017). However, these businesses are particularly vulnerable to crises because of their limited resources and low resilience to unexpected shocks (Calabrese, Cowling, & Liu, 2022; Cowling, Liu, & Zhang, 2016; Guerrero, Mickiewicz, & Qin, 2024). When crises take hold, SMEs experience more significant negative impacts than large corporations (Greene & Rosiello, 2020; Morgan et al., 2020; Peric & Vitezic, 2016). For example, in the recent Covid-19 crisis, 71% of SMEs in the United Kingdom considered the crisis to be their main obstacle to growth, 56% experienced a decline in annual sales, 47% reduced their operations, and 31% were forced to close (UK Government, 2020). Practitioners and policymakers have discussed how SMEs can respond to such challenges by pivoting, that is, by substantively transforming the established business model (e.g., market introduction of new/innovative products and services; new/changed production processes, delivery methods, or ways of managing human resources; and digital transformation through new apps, services, platforms) through an experimentation process of hypothesizing and validating a new business model to adapt to changes caused by crises (Agarwal & Audretsch, 2020; Balta, Papadopoulos, & Spanaki, 2024; Morgan et al., 2020; Nguyen et al., 2024). Although pivots occur in times of crisis for particular purposes of alleviating suffering, reducing vulnerability, and preserving the survival of SMEs, their impacts may vary depending on pivoting activities. Pivots that positively adjust business model functioning by targeting innovation, exporting activities, or digital transformation (Balta, Papadopoulos, & Spanaki, 2024; Cucculelli & Peruzzi, 2020; Giotopoulos, Kontolaimou, & Tsakanikas, 2017; Khurana, Dutta, & Singh Ghura, 2022) are found to be

essential as they enable SMEs to enhance competitive advantages and retain customer base and profitability during a crisis (Guillén, 2020).

Such pivots necessitate deployment of various resources—finance, knowledge, and human—that are generally constrained to SMEs even in ordinary circumstances due to their liability of smallness (Freel, 2000), yet to a larger degree in times of crisis (Chit, Croucher, & Rizov, 2023; Lim, Morse, & Yu, 2020). There is evidence that government assistance by way of financial aid and knowledge support is a crucial external resource for the survival of SMEs during a crisis to surmount inevitable shortfalls in their internally generated funds and skills (Bertschek et al., 2023; Brautzsch et al., 2015; Crawford, Cui, & Kewley, 2024). Financial support can be provided under subsidized funds or grants that SMEs can obtain directly from the government, whereas knowledge support can take the form of professional advice or training programs funded by the government (Pereira & Bamel, 2021). However, whether and how government financial and knowledge support is related to pivots has not been empirically explored. Answering this question will help governments, policymakers, and SMEs to understand which support to offer and how that support influences firms' ability to adapt to crises. Hence, this paper aims to answer the following research question:

RQ1: Do government-provided financial support and knowledge support enhance UK SME pivots during a crisis? If so, which support is more efficient?

As a consequence of their modest size and capacity, SMEs typically operate within local markets shaped by specific regional conditions (Nguyen, Mickiewicz, & Du, 2018). When facing extensive uncertainty due to crises, entrepreneurs running SMEs rely heavily on the well-being of their local communities (Williamson, Gish, & Stephan, 2021), particularly community or regional subjective well-being (SWB) that indicates the collectively shared levels of happiness and life satisfaction in a particular region (Gallan et al., 2019; OECD, 2014; Veneri & Murtin, 2019). The literature on regional SWB highlights that individuals embedded in a community with high regional SWB (e.g., where members are satisfied with their life) tend to perceive the world with optimism and overconfidence that come with cognitive errors such as planning fallacy or overestimation (Baron, Hmieleski, & Henry, 2012; Chen et al., 2024; Isen, 2002), with evidence on behaviors of large, listed firms (Cheng et al., 2023; Chuluun & Graham, 2016). However, less is known about the impact of regional SWB on SMEs' behaviors in crises with various risks, uncertainties, potential losses, and a likelihood of exhausting resources and time available for desired pivots. We address this gap by posing

RQ2: Is regional SWB related to UK SMEs' pivots during a crisis?

Furthermore, in the United Kingdom, regional SWB varies substantially across regions (Hand, 2020) since the United Kingdom is a combination of four countries (England, Scotland, Wales, and Northern Ireland). Meanwhile, in the literature, prior research has shown that regional characteristics may significantly reflect how national policies are "played" (i.e., executed and implemented) at the local level (Du & Mickiewicz, 2016). For example, Nguyen, Mickiewicz, and Du (2018) show that the impact of national laws and regulations on firm behaviors may vary, depending on the level of local economic development and governance quality of local governments. Built on this strand of literature, it may be expected that a region's SWB may strengthen or weaken the relationship with government financial and knowledge support during a crisis. Understanding this variation at the subnational level is important as it allows us to explain under which conditions national policies are efficient and under which conditions they are not. As such, we ask

RQ3: Are regional SWB and government support jointly associated with UK SMEs' pivots during a crisis, and, if so, how?

To answer the proposed research questions, we perform an analysis of the 2020 wave of the UK Longitudinal Small Business Survey (LSBS), using a multilevel approach. The 2020 LSBS was conducted between September 2020 and April 2021, covering the second peak of the Covid-19 pandemic in the United Kingdom. This period of time is of high relevance to our study on the role played by the Covid-19 pandemic on UK SMEs' adaptive changes, as well as the provision of support schemes by the UK government in response to the crisis (Batjargal et al., 2023). In a robustness check, we also run a scenario-based experiment to verify the relationship between government support and pivots among UK SMEs.

By doing this, the paper makes three contributions to the literature. First, it adds to the growing body of research on pivoting as an adaptive response to external stimuli (Balta, Papadopoulos, & Spanaki, 2024; Chaparro & Gomes, 2021; Morgan et al., 2020; Wang et al., 2023) by examining government support as a determinant of SMEs' pivots during a crisis. Our findings show that both financial support and knowledge support are important to SMEs' pivots and that knowledge support is deemed more effective. Therefore, the government should consider both financial aid and schemes that upgrade SMEs' knowledge and skills during a time of crisis.

Second, the paper contributes to the literature on regional well-being (Hand, 2020; Le Roy & Ottaviani, 2021) by investigating the relationship between regional SWB and the pivots of UK SMEs during the Covid-19 crisis. Our findings suggest that SMEs in regions with a higher level of SWB are likely to make fewer pivots. This implies that SMEs are *less* willing to change the status quo (i.e., engage in pivots) or that they

pivot at lower rates due to resource-constrained settings when they are embedded in a region with a high level of shared SWB. Our study further points to lock-in effects of well-being within the entrepreneurship context, wherein the spiral of positive emotions and feelings is not fully manifested in entrepreneurs' cognitive decision-making processes, such as their commitment to pivots, in times of crises. Failures to do so can challenge their psychological needs, values, or expectancies for entrepreneurial progress, thereby preventing entrepreneurs' well-being from achieving its optimal psychological functioning (Shir, Nikolaev, & Wincent, 2019; Stephan, 2018). By focusing on *subjective* well-being rather than *objective* aspects of well-being—that embody life quality (e.g., health status and public service quality) and material living conditions (e.g., income and local economic development)—our study underscores the intrinsic link between the psychological aspect of well-being and entrepreneurs' decision-making processes, in which cognition plays a central role (Shepherd, 2015).

Third, we contribute to the research on the joint association of central policy and regional characteristics (Rodríguez-Pose & Ezcurra, 2010; Thomas & Laurence, 2020) by examining the interaction between regional SWB and government support. We find that the positive link between government support, regardless of supporting types, and SMEs' pivots is strengthened for SMEs in regions with higher SWB. Therefore, we submit that the setting of government support for SMEs during a crisis should be devolved to the regional level, since offering general and uniform support at the national level may not be effective in addressing the needs of local SMEs. In general, the findings of our research not only contribute to the entrepreneurship and management literature but also have implications for policymakers.

By analyzing both regional perspectives and government policy tools, this study provides clear implications for UK policymakers, highlighting the need to pay attention to the heterogeneity of regional SWB when formulating policy. We suggest that targeted government support for SMEs should be prioritized in regions with higher SWB, where affective states of mind may no longer justify optimal cognitive functioning because of the impact of the crisis. Thus, SMEs in these regions are likely to require greater assistance or a behavioral nudge from the government to activate a restorative role (i.e., the positive nature) of such affective states, enabling them to deploy additional strategic pivots in times of crisis.

RELATED LITERATURE

Crises and SMEs

The term crisis refers to extreme, unpredictable events (Pearson & Clair, 1998) or exogenous shocks that disrupt firms' normal operation (Williams et al., 2017). Major crises over the past two decades, namely, the global financial crisis and global health crises (e.g., SARS, H1N1, and Covid-19), have had profound economic effects on firms through several channels. The global financial crisis in 2008, triggered by banking system failures, has led to bank credit supply shocks to firms, particularly nonlisted firms and SMEs, lowering their demand for long-term investments (Demirgüç-Kunt, Martinez Peria, & Tressel, 2020; Ogawa & Tanaka, 2013; Paunov, 2012). In addition to financial shocks, firms have also suffered supply chain disruption and demand contraction from a reduction in the consumption market (Antonioli & Montresor, 2021). To some similar extent, global health crises that led to high mortalities and population changes have generated shockwaves to both demand and supply of firms, threatening their financing (Hassan et al., 2023; Kuckertz, 2021; Lee & Warner, 2005).

During crises, SMEs and entrepreneurs, with substantial liability of smallness, are more resource-constrained and less likely to scale up than their larger counterparts (Greene & Rosiello, 2020; Peric & Vitezic, 2016). However, with any crisis coming with opportunity as two sides of the same coin, many high-quality entrepreneurial businesses have changed their business model or exploited new market opportunities to not just survive but thrive (Kirtley & O'Mahony, 2020). Such businesses are often characterized by an ability for opportunity recognition (Giotopoulos, Kontolaimou, & Tsakanikas, 2017), adaptability (Miklian & Hoelscher, 2022; Osiyevskyy, Shirokova, & Ehsani, 2023), and entrepreneurial resilience (Branicki, Sullivan-Taylor, & Livschitz, 2018; Do et al., 2022).

The most recent major crisis—the Covid-19 crisis—represents a good case to study SMEs and entrepreneurs. The channels through which the Covid-19 crisis has disrupted the firms are similar to past ones—demand and supply shocks leading to financial distress (Belghitar, Moro, & Radić, 2022). Yet, the spread and severity of the outbreak and the social-distancing policy "Great Lockdown" induced as government responses have rendered the crisis unique and markedly different. Unlike the global financial crisis, the Covid-19 pandemic has exhausted not only financial but also psychological and emotional resources of SMEs (Batjargal et al., 2023; Greene & Rosiello, 2020). The prolonged Great Lockdown and new ways of doing business (e.g., working from home and digitalization) have placed additional strain on entrepreneurs and workers, who suffered from health concerns, juggled work with childcare responsibilities, and often lacked the knowledge needed to adopt digital technologies (Thurik et al., 2024).

In the United Kingdom, a study by King's College London reveals that, during the pandemic, 61% of SMEs reported that trading decreased, and another 9% stopped trading entirely (Stephan, Zbierowski, & Hanard, 2020). More importantly, although the majority of UK SMEs agreed that it was important to adapt to the new environment, they struggled to do so because of a lack of finance

and know-how (Batjargal et al., 2023). Therefore, it is important to understand factors that influence UK SMEs in changing their courses of action (i.e., pivoting) during this crisis. The next section explains the concept of pivoting in more detail.

Pivoting

As crises severely disrupt and threaten business functioning and performance of SMEs, there is increasing scholarly attention to business model pivoting as their strategic crisis response (Balta, Papadopoulos, & Spanaki, 2024; Morgan et al., 2020; Nguyen et al., 2024). Major crises require firms to respond quickly to alleviate suffering and preserve survival (Williams et al., 2017). That is, SMEs are forced to act in an entrepreneurial manner (Argyro et al., 2023; Branicki, Sullivan-Taylor, & Livschitz, 2018; Carnevale & Hatak, 2020; Do et al., 2022) where pivoting is a strategic action for opportunity recognition and entrepreneurship success (Hampel, Tracey, & Weber, 2020; Sanasi & Ghezzi, 2024).

Pivoting, as conceptually proposed by Snihur and Clarysse (2022) and Nguyen et al. (2024), embodies a substantive transformation of a firm's established business model to sustain its competitive advantages. SMEs' pivoting during a crisis, where time is central to how such a transformation occurs (Kunisch et al., 2017), thus resonates with the dynamics in new-venture pivoting under uncertainty or environmental shifts (Balta, Papadopoulos, & Spanaki, 2024; Miklian & Hoelscher, 2022). The relevance manifests in two dimensions—nature and occurrence—of SMEs' pivots in conditions of crisis.

Under intense time pressure and uncertainty over the crisis's persistence, SMEs must formulate swift decision-making in narrow spans of time, as opposed to a traditional length of a year or more for a strategic change (Kunisch et al., 2017). This rapid action aligns with the experimental nature of pivots in new ventures, where SMEs hypothesize and validate new, viable business models in response to emerging market opportunities. Pivot quality, as in research on new venture pivoting, is maintained through selective (i.e., most important or negative) information processing (Kunisch et al., 2017; Sanasi & Ghezzi, 2024) in a focused (i.e., few pivots rather than many) commitment (Camuffo et al., 2024; Snihur & Clarysse, 2022), preserving agility for SMEs under time pressure.[1] Also, ongoing experimentation and retrospective evaluation of pivoting persistence—what Sanasi and Ghezzi (2024) term pivots-as-process—enable them to adapt as crises evolve. Through this, pivots help SMEs reduce vulnerability and reinforce resilience to readily cope with permanent changes caused by crises, such as industry dynamics (Cucculelli & Peruzzi, 2020) or virally disruptive digital transformation (Balta, Papadopoulos, & Spanaki, 2024).

As pivots occur in times of crisis largely for particular purposes of alleviating suffering and preserving survival, crises strengthen SMEs' orientation toward entrepreneurial activities by targeting innovation in their pivots for opportunity recognition (Argyro et al., 2023; Cucculelli & Peruzzi, 2020; Miklian & Hoelscher, 2022). SMEs' pivots take various forms of innovation with different impacts on business functioning. Product and service innovation (e.g., provision of new/changed goods or services) can enhance sales growth through increased competitiveness and customer satisfaction (Balta, Papadopoulos, & Spanaki, 2024; Ganotakis et al., 2023; Miklian & Hoelscher, 2022; Morgan et al., 2020). Process innovation (e.g., new/changed production process and delivery methods for products or services) improves efficiency gains through operational flexibility or cost savings (Antonioli & Montresor, 2021; Do et al., 2022; Naidoo, 2010). Organizational innovation (e.g., new/changed ways of working and methods of managing human resources) captures adaptive behaviors and dynamic capabilities to weather uncertainty in the business environment in the face of crises (Ganotakis et al., 2023; Makkonen et al., 2014).

The Covid-19 pandemic has placed SMEs' pivots in changing conditions. SMEs have been urged to catch up with the evolution of digital technologies (e.g., new apps, services, and platforms) to enhance architectures for innovation. Digital transformation is proven essential in remote working conditions (Singh et al., 2022) and, more crucially, in providing new methods of selling or delivery to customers (Balta, Papadopoulos, & Spanaki, 2024; Giotopoulos, Kontolaimou, & Tsakanikas, 2022; Khurana, Dutta, & Singh Ghura, 2022). This inevitably helps SMEs—especially those with customer intimacy strategies—preserve brand value and grow their customer base, where sustaining a small, loyal customer base amid demand shocks is key to their survival (Osiyevskyy, Shirokova, & Ehsani, 2023).

Government support

Although the nature and occurrence of SMEs' pivots in crises align with their opportunity-driven business models (Balta, Papadopoulos, & Spanaki, 2024; George & Bock, 2011) and inherent adaptability (Miklian & Hoelscher, 2022; Osiyevskyy, Shirokova, & Ehsani, 2023), their resource constraints and vulnerability to the crisis pose challenges for pivots to occur at desired rates. The literature has paid particular attention to government support as an instrumental external resource for SME survival (Belghitar, Moro, & Radić, 2022; Calabrese, Cowling, & Liu, 2022). The two most common forms of government support are finance and knowledge (Cull et al., 2017;

[1]This approach streamlines the pivoting process by tempering variations in falsification of the hypothesized business model or noisy signals about its validity (Pillai, Goldfarb, & Kirsch, 2020).

Nguyen & Canh, 2020; Pergelova & Angulo-Ruiz, 2014), with each having a distinct role in SMEs' resource system.

Financial capital is the lifeblood of entrepreneurship, serving as a buffer against external shocks (Andries, Debackere, & Van Looy, 2020; Cooper, Gimeno-Gascon, & Woo, 1994). However, SMEs, in normal circumstances, are often subject to constraints in external formal financing of debt or equity due to a lack of experience or a track record of suitable collateral (Andersson, Eklund, & Tsvetkova, 2023; Freel, 2000; Kaivanto & Stoneman, 2007; Le, Nguyen, & Vo, 2024; Meuleman & De Maeseneire, 2012) and thus overreliant on internally generated funds, such as cash holdings or retained earnings. Crises put SMEs at a heightened risk of draining their internally generated funds for normal operations and necessary activities (Cowling, Brown, & Rocha, 2020), whereas debt remains at a high borrowing cost (Casey & O'Toole, 2014; Demirgüç-Kunt, Martinez Peria, & Tressel, 2020), especially for innovative SMEs (Lee, Sameen, & Cowling, 2015), and equity finance becomes less opportunistic for growth (Brown & Lee, 2019). These constraints increase the likelihood of financial distress for SMEs, restricting their innovation investments or strategic pivots (Lim, Morse, & Yu, 2020). In such a circumstance, the provision of government financial support has a crucial role in increasing SMEs' credit availability, stabilizing their innovation capacities, and facilitating firm survival and growth (Crawford, Cui, & Kewley, 2024; Jin, Ke, & Chen, 2022).

The government financial support for SME finance during the recent global crises involves direct and tied government financing arrangements, such as one-time grants, loan guarantees, direct subsidized loans, or credit lines (see Crawford, Cui, & Kewley, 2024, for a systemic review). These arrangements have proven effective in such difficult times. For instance, the United Kingdom's two government-backed lending schemes—the Coronavirus Business Interruption Loan Scheme and the Bounce Back Loan Scheme—have significantly increased SMEs' bank credit during the Covid-19 pandemic (Fatouh, Giansante, & Ongena, 2021), with 92.1% of all debt funds backed by the UK government compared to under 5% in normal circumstances (Calabrese, Cowling, & Liu, 2022). Wage subsidies by the UK government (Belghitar, Moro, & Radić, 2022) or the governments of European countries (Chit, Croucher, & Rizov, 2023) help SMEs retain human resources and avoid frictional costs in a more rigid cost structure than larger firms. In the global financial crisis, where banks play a central role, government intervention in credit markets—via credit lines or government-backed guarantees—has effectively enhanced credit access for SMEs that would otherwise be unable to access bank finance (Bachas, Kim, & Yannelis, 2021; Cowling, Liu, & Zhang, 2016; Gai, Arcuri, & Ielasi, 2023; Wang, 2025).

Beyond meeting imminent capital needs, the provision of government financial support helps ensure coevolution and expansion of other resource components, especially strategic resources (i.e., strategic business-model adjustments to gain competitive advantages or product market position), in the resource system to exploit growth opportunities even at the peak of crises (Lim, Morse, & Yu, 2020; Pergelova & Angulo-Ruiz, 2014). This support can have paramount impacts on SMEs' growth prospects for years that follow (Cowling, Liu, & Zhang, 2016; Gai, Arcuri, & Ielasi, 2023).[2] Although government financial support may not necessarily be associated with long-term investments—for instance, the UK government's Covid-19 financial support excludes the use for export-related activities (Calabrese, Cowling, & Liu, 2022)—it helps SMEs rebalance their resource system, enabling innovation or internationalization to confront the crises and in pursuit of long-term growth (Mustar & Larédo, 2002; Pergelova & Angulo-Ruiz, 2014). Building upon this line of research, we argue that in a crisis, government financial support is crucial for facilitating SMEs' adaptive changes and is linked to an increased number of pivots. Therefore, we hypothesize

> **Hypothesis 1.** Government financial support is positively associated with SMEs' pivots during a crisis.

Beyond financial constraints, SMEs also lack technical and managerial skills because of limited experience and poor use of external information and linkages (Freel, 2000; Nguyen, Mickiewicz, & Du, 2018). Those skills are crucial during a time of crisis because they help SMEs to build competencies and strengthen their market position. However, knowledge is not a public good; information and know-how are not freely shared among firms. Thus, the government provision of knowledge support plays an essential role in surmounting shortfalls in the internal skills of SMEs.

Government knowledge support, in this study, refers to advice, training, and information useful to business operations and strategic planning (Doh & Kim, 2014; Pereira & Bamel, 2021). Many government programs, in noncrisis situations, have enhanced knowledge exchange, offering entrepreneurs new ways of thinking and understanding strategic tools (Bulte, Lensink, & Vu, 2016). Evidently, UK government-subsidized marketing advice (Wren & Storey, 2002), export assistance (Crick & Chaudhry, 1997), or financial advice (Han & Benson, 2010) increased UK SMEs' performance; Swedish government-supported innovation networks also facilitated SMEs' innovation through knowledge sharing within networks (Wincent, Anokhin, & Örtqvist, 2013). Such noncrisis evidence confirms the knowledge-based view that absorbing knowledge external to the firm advances its capabilities and specific knowledge

[2]Indeed, the UK government-backed finance during the global financial crisis enables SMEs to increase their capacities to exploit potential investment opportunities more effectively and thus, have higher credit demand during the 2011–2013 period (Cowling, Liu, & Zhang, 2016). Similarly, Italian SMEs as 2008 funding recipients have higher profitability over the 2010–2018 period than nonrecipient counterparts (Gai, Arcuri, & Ielasi, 2023).

for value creation and competitive advantages and that actively seeking knowledge to solve complex problems effectively improves firm efficiency (Nickerson & Zenger, 2004; Pereira & Bamel, 2021).

The perceived role of governments in the provision of knowledge support to SMEs is often questioned during times of crisis, as the type and extent of support needed can vary with circumstances. The Covid-19 crisis, unlike previous ones, has imposed new ways of doing business: remote working and digitalization (Greene & Rosiello, 2020). The UK government has responsively implemented targeted knowledge support for SMEs through strategic training programs—such as Small Business Leadership, Peer Networks, Help to Grow: Management—that are designed to address crisis-related management challenges (UK Government, 2020). The "Help to Grow: Management," a 12-week program run by leading business schools across the United Kingdom, with 90% UK government-subsidized, supports SME senior managers in enhancing business performance, resilience, and long-term growth (BEIS, 2023). Similarly, Germany's "go digital" program aids SMEs in closing digital knowledge gaps, improving their competitiveness and resilience in response to rapid changes in digitalization (Bertschek et al., 2024). This type of government knowledge support targeting digital transformation reinforces the knowledge-based view, yet in the digital world, where digital resources (e.g., digital platforms and services) establish a strong competitive position for firms as the strategic action is not to deploy resources but to build relationships from those resources (Cuthbertson & Furseth, 2022). In line with these findings, we hypothesize

> **Hypothesis 2.** Government knowledge support is positively associated with SMEs' pivots during a crisis.

Although the *relative* importance between government financial and knowledge support on SME development has been rather underexplored, its relevance is heightened for crises like the Covid-19 crisis, which pose challenges for firms not just in managing finance but also in adapting to new ways of working. Although finance is helpful in allowing SMEs to *realize* business opportunities, it plays little part in helping them *identify* and *evaluate* risks in the business environment before making decisions (Nguyen, 2022), which is more crucial during a time of crisis. Firms can overcome financial distress using bootstrap finance (Block, Fisch, & Hirschmann, 2021), whereas lack of knowledge—especially, what to change and how—emerges as a main obstacle to SMEs dealing with the crisis (Giones et al., 2020). The Covid-19 crisis also requires firms to adapt to a newly altered work environment in a novel and knowledge-based manner, and without sufficient know-how, it would be difficult for SMEs to do so. Therefore, we hypothesize

> **Hypothesis 3.** The positive relationship between government knowledge support and SMEs' pivots is stronger than the relationship between government financial support and pivots during a crisis.

Regional SWB

When global crises disrupt firms, entrepreneurs, managers, or leaders as the top decision-makers for business models are impacted and so are individuals in the society—financially (Bernanke, 2018) and psychologically (Boffo, Brown, & Spencer, 2017; Mohseni-Cheraghlou, 2016). Many references have been made to individual SWB—that is, happiness or satisfaction—during crises (Boffo, Brown, & Spencer, 2017; Hariri, Bjørnskov, & Justesen, 2015; Klein, 2013), and its impact on firms' crisis management for leadership and human resources (Carnevale & Hatak, 2020; Ramli et al., 2023). Recent scholars and policymakers have shifted the attention to the local or regional contexts of this matter, theoretically (Boffo, Brown, & Spencer, 2017; Gallan et al., 2019) and empirically (Cheng et al., 2023; Chuluun & Graham, 2016). Following these trends, our study emphasizes *subjective* well-being over objective aspects (such as life quality and material living conditions) or overall well-being, as psychological factors of happiness or life satisfaction are more immediately connected to behavioral mechanisms underlying entrepreneurs' decision-making than other life domains.

The concept of regional SWB departs from the conceptual logic underlying how individuals evaluate their lives from their own perspectives (Dardha & Rogge, 2020). Baron (2008) and Diener (2006) highlight that individuals' affective reactions to life events (e.g., emotions and feelings) influence their cognitive evaluations (e.g., life satisfaction) and behaviors (e.g., engagement). Not only does regional SWB reflect individuals' affect and cognition, but regional SWB also influences the well-being of the individuals within that region, where individual interactions are embedded within community well-being (Becchetti, Corrado, & Fiaschetti, 2016; Gallan et al., 2019; Guo & Qian, 2021).

The impact of regional SWB on SMEs' pivots in times of crisis mainly relates to the extent to which the perceived opportunity and risk for pivoting deviate from their actual prospects because of the two main factors—affect and cognition—of entrepreneurs or managers (Chen et al., 2024). Individuals embedded in a community with a high level of regional SWB (e.g., where members are satisfied with their life) are less likely to perceive the situation in a pessimistic and negative way with serious threats or losses and more with biased positive affect. As biased positive affect can lead to cognitive errors (e.g., planning fallacy due to overestimation or

overprecision),[3] a high degree of regional SWB encourages a tendency in a local community to ignore or downplay negative information in order to maintain a high level of happiness and satisfaction (Baron, Hmieleski, & Henry, 2012) and thus deters firms from changing their status quo (Cheng et al., 2023; Chuluun & Graham, 2016; Isen, 2002). This refers to lock-in effects of well-being in the entrepreneurship context, wherein affect might not necessarily or fully be reflected in cognitive underpinnings to perform and progress well in entrepreneurial actions, further challenging entrepreneurs' psychological needs, values, and expectancies for entrepreneurial progress and also their optimal psychological functioning (Shepherd, 2015; Shir, Nikolaev, & Wincent, 2019; Stephan, 2018).[4]

As entrepreneurs or managers in high regional SWB may underrate risks that come with the opportunity under conditions of global crises, SMEs are likely to engage in a less-than-anticipated number of pivots for two reasons. First, global crises are generally large, unanticipated, and unprecedented events that place SMEs at various risks and potential losses. That means entrepreneurs with biased positive manners are exposed to larger cognitive errors because of the uncertainty about the crises' persistence. Also, the entrepreneurial/managerial heuristic decision-making process based on previously acquired information and rules-of-thumb turns counterproductive because of unprecedented or rapidly changing environments (Baron, 2008; Baron, Hmieleski, & Henry, 2012). In this way, real, meaningful losses caused either by their cognitive errors or by crises induce entrepreneurs with positive affect to activate a prevention focus (Isen, 2002)—that means more conservative (i.e., fewer pivots) programs of pivots to avoid potential losses. Second, available resources and time for pivots and experimentations are largely constrained during a crisis, hindering overconfident entrepreneurs or managers from committing to the desired number of pivots (Chen et al., 2024). Indeed, with overestimation bias, they need to conduct more experiments than unbiased ones for a single pivot, thereby exhausting resources quickly and limiting time available for doing so with other pivots. Hence, we argue that SMEs located in the region with a high degree of regional SWB (e.g., happiness or satisfaction) are likely to engage in fewer pivots (either the conservative programs of choice to pre-empt potential losses or lower-than-expected desired rates due to resource-constrained settings) under conditions of crises.

On the contrary, entrepreneurs who habitually perceive situations pessimistically and have high sensitivity to threats and losses, as Nguyen et al. (2024) suggest, are more likely to be stimulated by crisis rumination and make more pivots to prevent further losses. Taken together, we hypothesize

> **Hypothesis 4.** SMEs in regions with higher SWB are likely to make fewer pivots during a crisis.

The interaction between regional SWB and government support

Crises have put the interrelationship between government support and (regional) SWB to the forefront in the entrepreneurial research (Batjargal et al., 2023; Eib & Bernhard-Oettel, 2024), with each playing a different role in SMEs' pivoting. Government support raises the role of external resources in directly changing their business model trajectories, whereas regional SWB serves as an indirect mechanism on entrepreneurs' perception of pivoting opportunity through their affect, cognition, and surrounding environment.

We argue that the association between government support, either in the form of finance or knowledge, with SMEs' pivots should be higher for entrepreneurs or managers embedded in a high level of regional SWB, as such support helps correct cognitive errors from biased positive affect. Entrepreneurs or managers in these regions view government support as a salient signal for restraining potential losses and for enhancing resource-constrained settings during crises. Thus, government support enables SMEs to deactivate their temporary prevention focus, highlighting the need for action to handle a crisis, and motivating more aggressive pivoting to build competitive advantages. Additionally, government financial or knowledge resources help regain balance within the resource system (Lim, Morse, & Yu, 2020) and redirect deployment of combined resources to ensure experimentations and pivots are conducted at the desired rates in response to emerging opportunities.

In this way, government support activates a restorative role of regional SWB in mitigating crisis-induced stressors for SME owners/entrepreneurs and also the social costs of crisis. First, crises typically generate stress, burnout, and anxiety due to uncertainty, workload, and resource constraints (Christofi et al., 2024; Williams et al., 2017). The Covid-19 crisis has introduced unique stressors—for example, loneliness from lockdowns (Backman et al., 2023; Eib & Bernhard-Oettel, 2024) and technostress in the evolving era of digital technologies (Cenamor, Parida, & Wincent, 2019; Thurik et al., 2024)—for entrepreneurial

[3]Examples of cognitive errors are planning fallacy (Baron, Hmieleski, & Henry, 2012; Hogarth & Karelaia, 2012) with formulation of unrealistically favorable predictions about completion of certain tasks (e.g., product development), overestimation, and overprecision on perceiving even-better-than-anticipated success prospects of the opportunity (Chen et al., 2024).

[4]Shir, Nikolaev, and Wincent (2019) and Stephan (2018) further explain psychological well-being as a state encompassing not only feelings of satisfaction and happiness (i.e., subjective well-being) but also optimal psychological functioning (i.e., eudaimonic well-being), which relates to meaning, self-realization, and fulfillment derived from one's work and achievements. As our OECD measurement of well-being does not capture this eudaimonic dimension at the regional level, we do not address it in our study.

well-being and behaviors. Thus, a strong local support structure (from family, friends, or wider local communities)—reflected in high regional SWB through community engagement—helps alleviate these stressors, enabling entrepreneurs to take strategic actions such as applying for government support (Eib & Bernhard-Oettel, 2024) to close the financial and knowledge gaps in pivoting. Second, the Covid-19 crisis involves an urge for firms to shift their pivoting efforts toward assisting local communities, particularly at-risk people (Morgan et al., 2020; Sharma et al., 2024) or those in the peripheral, social-distancing areas (Sanasi & Ghezzi, 2024). As "local entrepreneurs and communities have formed a mutually beneficial alliance" (Sharma et al., 2024, p. 285), a better local support structure built by local entrepreneurs and small businesses within a community reduces social costs of crisis (Sharma et al., 2024; Xu et al., 2021). However, social values that firms gain may not proportionally increase their economic gains. As evidenced by Morgan et al. (2020), restaurants pivot at their expense by serving fewer customers while donating meals to local key workers. Thus, a strong local support structure—that represents high regional SWB—provides a basis for a stronger relationship between government support and SMEs' resources deployed for pivoting.

Conversely, in regions with lower SWB, entrepreneurs have to deal with many crisis-induced stressors while hardly benefiting from socially disconnected local communities. In this situation, the role of government finance and knowledge support in signaling awareness of the importance of taking action to handle a crisis might be less appealing and effective.

In sum, we propose

> **Hypothesis 5.** The positive association of government knowledge support with SMEs' pivots during a crisis is stronger in regions with higher SWB.

> **Hypothesis 6.** The positive association of government financial support with SMEs' pivots during a crisis is stronger in regions with higher SWB.

DATA, VARIABLES, AND ESTIMATION

Data

To test the hypotheses, we used the LSBS 2020 data. The LSBS has been conducted by the UK Department of Business, Innovation and Skills since 2015 on a stratified sample of the United Kingdom's four countries: England, Wales, Scotland, and Northern Ireland. The LSBS 2020 survey is particularly relevant for our research for three reasons. First, the LSBS 2020 survey includes a new module on Covid-19, with several questions relating to how firms were dealing with the crisis and whether firms applied for or received the UK government funds designed to support businesses. These Covid-19-related questions, however, are not recurrent in subsequent waves. Second, the timing of the LSBS 2020 survey shows the persistence of the pandemic. The survey was conducted between September 2020 and April 2021, which covers the second and third national lockdowns in England (Institute for Government, 2021). At the time firms were interviewed, 6–13 months had elapsed since the first UK Great Lockdown was introduced in March 2020. Third, the survey includes firms in both manufacturing and services sectors, enabling us to capture the heterogeneity effects across and within sectors under the impression that industries/sectors with high physical interactions were more affected by government restrictions.

We match this firm-level dataset with Organization for Economic Co-operation and Development (OECD) Regional Well-being data, and the City Monitor data (for the regional control variables) published by the Centre for Cities. The final dataset is thus multilevel. As the City Monitor data does not cover Northern Ireland, we exclude that region from the analysis. After cleaning the data and removing observations with missing values and "I don't know" answers, the final sample available for regression analysis contains 5894 SMEs with the UK criterion for SMEs between 1 and 249 employees.

Dependent variable

The dependent variable of interest is firm pivots—adaptive changes to meet the Covid-19 situation. According to the survey, firms may conduct the following three pivots that target innovation for long-term growth prospects: (1) change services/products provided, (2) change processes/ways of working, and (3) change methods of selling.[5] Depending on firm-specific characteristics, firms may take any combination of these pivoting actions that help them adapt better to the new environment of the Covid-19 crisis. As such, our main dependent variable, *Pivot*, takes values from 0 to 3, indicating the number of pivots firms could conduct when confronting the Covid-19 crisis. The higher the value of the variable, the more pivots were conducted by firms to deal with the crisis. This setting of the dependent variable allows firms to

[5]The survey has information on additional four types of pivots that firms perform: (i) build up stock of supplies, (ii) postpone investment, (iii) drawn on reserves, and (iv) increase borrowing. However, these types of pivots do not fit into our definition of pivots for improving competitive advantages or market position, but rather for alleviating crisis suffering short-term with lack of efficiency improvement or strengthened competitivity in the aftermath of crisis. We however use these pivots (combined with three main types of pivots in innovation) in the robustness checks. See Appendix S3 for estimations.

TABLE 1 Summary statistics.

Variables	Definitions	Mean	SD	Min	Max
Pivots	The number of pivots firms adopt the following changes to adapt to the Covid-19 crisis: (1) change services/products provided, (2) change processes/ways of working, and (3) change methods of selling. The variable takes value 0 if firms adopt none of the above pivots and takes value 3 if firms adopt all of the three pivots.	1.112	0.957	0	3
Financial support	Take value 1 if a business receives funds from a Government Covid-19 scheme such as the Coronavirus Job Retention Scheme or the Self-employment Income Support Scheme; 0 if not.	0.601	0.490	0	1
Knowledge support	Take value 1 if firms receive strategic advice from the government to help introduce stepped change to grow businesses in terms of profitability, employment, or productivity in the last 12 months, 0 otherwise.	0.204	0.403	0	1
Regional subjective well-being	The standardized combination of two subjective OECD well-being items at the regional level: Community and Life Satisfaction	0.098	0.881	−2.117	1.695
Firm size	The number of employees on payroll, excluding owners and partners, across all sites	17.869	33.119	1	249
Firm age	Years since firm first establishment	23.812	18.090	1	97
Family ownership	Take value 1 if a business is majority-owned by a person or a family who set it up; 0 if not.	0.776	0.417	0	1
Export	Take value 1 for export firms and value 2 for non-export firms	1.883	0.321	1	2
Other financing sources	The value of external finance that a firm obtained in the last 12 months, excluding Coronavirus-related subsidies, in thousand Pounds, 2020 price	512	2082	0	2500
BAME	Take value 1 if entrepreneurs are of BAME ethnicity (Black, Asian, and Minority Ethnic), 0 otherwise.	0.038	0.191	0	1
Revenues increase[a]	Take value 1 if revenues increase compared to the previous 12 months, 0 otherwise.	0.180	0.384	0	1
Revenues decrease[a]	Take value 1 if revenues decrease compared with the previous 12 months, 0 otherwise.	0.560	0.496	0	1
Unchanged revenues[a]	Take value 1 if revenues stay roughly the same compared to the previous 12 months, 0 otherwise.	0.260	0.439	0	1
R&D investment	Take value 1 if a business invested in R&D activities in the last 3 years, 0 otherwise.	0.071	0.258	0	1
Employee training	Take value 1 if a business offered training (either off the job or on the job) for employees, 0 otherwise.	0.394	0.489	0	1
Regional living material	The standardized combination of three OECD items at the regional level: income, jobs, and housing	0.020	0.739	−1.237	1.161
Regional life quality	The standardized combination of six OECD items at the regional level: health, education, environment, safety, civic engagement, and accessibility of services	0.093	0.687	−1.433	0.856
Regional business stock	The number of business stock per 10,000 population in a region, in 2019	415.258	108.013	274.267	695.900
Regional patent applications	The number of patent applications per 100,000 population, in 2019	24.934	13.500	8.333	57.067
Regional high-level qualifications	The percentage of the working-age population with high-level (NVQ4 and above) qualifications in a region	38.981	7.375	30.525	53.300
Regional claimant count rate	The rate (percentage) of claimant count (people claiming benefits for the reason of being unemployed) in a region from March 2020 to January 2021, a proxy of the influence of the Covid-19 crisis on the local economy	6.109	0.625	5.217	7.537
Sole proprietorship[b]	Take value 1 if the legal status of a business is a sole proprietorship, 0 otherwise.	0.156	0.363	0	1
Company[b]	Take value 1 if the legal status of a business company, 0 otherwise.	0.718	0.450	0	1
Partnership[b]	Take value 1 if the legal status of a business is a partnership, 0 otherwise.	0.083	0.276	0	1
Other ownership types[b]	Take value 1 if the legal status of a business is other ownership types (not listed above), 0 otherwise.	0.043	0.202	0	1

Note: The number of observations is 5894 UK SMEs. Regional control variables are obtained from City Monitor (UK) https://www.centreforcities.org/.
[a]Among three variables for revenue changes, the variable *Unchanged revenues* serves as the reference category and is therefore omitted from models.
[b]Four ownership dummies are included in models but not reported.

select the pivots that best fit their circumstances; however, more pivots are regarded as better adaptation (Giones et al., 2020).

Table 1 shows the summary statistics. On average, UK SMEs conducted 1.11 of the total three pivots in 2020. Appendix S2 shows the detailed summary statistics of each pivot. Among the three types of pivots, changing processes/ways of working is the most common pivot (adopted by 62.6% of firms). This is mostly because of the social-distancing policy "Great Lockdown" imposed by the UK government and new ways of doing business (e.g., remote working and digitalization).

Independent variables

Our first independent variable is government support. Specifically, the *financial support* variable takes the value "1" if a business receives funds from one of the UK Government Covid-19 schemes; "0" if not. Table 1 reveals that 60.1% of sampled firms obtained financial support in 2020. The *knowledge support* variable takes the value "1" if a business receives strategic advice from any government training schemes; "0" otherwise. Table 1 shows that 79.6% of UK firms did not draw on knowledge support at all. This implies that government-provided knowledge support reached one out of five UK SMEs during the Covid-19 period.

Our second independent variable—*regional subjective well-being* (SWB)—is a standardized index constructed by following the OECD's (2018) theoretical framework (Dardha & Rogge, 2020) that measures regional SWB as the level of life satisfaction and community engagement. In this way, regional SWB refers to the collectively shared level of, say, life satisfaction, happiness, and anxiety that entrepreneurs, managers, or leaders receive from local social communities or the business environment in general, which again reflects their affect and cognition. Regional SWB is relatively stable over time, especially in the context of the UK's four nations, with each having quite distinct informal institutions (e.g., values, cultures, and beliefs) for long-lasting effects on local entrepreneurs' well-being (Hand, 2020; Tranos, Kitsos, & Ortega-Argilés, 2021).

Explicitly, the regional SWB is a standardized scale of two SWB items at the regional level (Cronbach's $\alpha = 0.79$): community reliance and life satisfaction. Community reliance is captured using the question "Percentage of people who have friends or relatives to rely on in case of need (%)"; meanwhile, life satisfaction is measured using the question "Average self-evaluation of life satisfaction on a scale from 0 to 10." Since each item has its own unit, they are normalized using the min-max method to take values in a range from 0 to 10. Our regional SWB variable is measured at the first-level Nomenclature of Territorial Units for Statistics (NUTS-1) for a total of 11 regions that include nine English regions, Wales, and Scotland.[6] Appendix S1 presents detailed information on the items used to create regional SWB.[7]

Control variables

Following prior research, at the firm level, we control for firm age, size, ownership, financial and human resource management, export orientation, and ethnicity of entrepreneurs or managers. Although young entrepreneurs are inclined to pivot to grow, larger firms have a stronger resource base to do so (Nguyen et al., 2024; Pillai, Goldfarb, & Kirsch, 2020). The extent to which family ownership influences pivots depends on their human resources management as family-owned firms exhibit a stronger association with the welfare of employees than non–family-owned firms (De Blick, Paeleman, & Laveren, 2025; Issah et al., 2024). Business ownership types (sole proprietorship, company, partnership, and other types) with more solid routines and management practices may challenge pivots to occur. The abilities of accessing external finance and making R&D investments are determining factors for firms' innovation capacities (Brown & Lee, 2019; Cohen & Levinthal, 1990; Freel, 2000), facilitating pivots. Export-oriented firms are typically more productive and innovative, as entry into foreign markets involves high sunk costs (Aghion et al., 2024). Employee training is a proxy for firms' absorptive capacity and readiness to transform and innovate for new related knowledge (Cohen & Levinthal, 1990; Dostie, 2018). Current-year revenue performance relative to last year's (increase, decrease, and unchanged) is a predictive indicator for pivoting; the striking evidence is that a decrease in revenues represents a resource threat and entrepreneurial learning from past performance for growth aspirations and proactive pivoting strategies to gain a better competitive position (Chaparro et al., 2021; Guerrero, Mickiewicz, & Qin, 2024; Nguyen et al., 2024). Ethnic minority entrepreneurs are often associated with lower skills and lower firm growth, which implies a lower likelihood of pivots (Clark, Drinkwater, & Robinson, 2017); we use the UK-specific term BAME as an indicator for entrepreneurs or managers from ethnic minority groups (Black, Asian, and Minority Ethnic).

[6]Eleven NUTS-1 regions have an average land area of 20,365 km^2. Nine English regions include North East, North West, Yorkshire and the Humber, East Midlands, West Midlands, East of England, Greater London, South East, and South West.

[7]It is noteworthy that we do not combine all items listed in the OCED's framework into our regional SWB variable. This is because remaining items represent other dimensions of regional well-being. For instance, a combination of income, jobs, and housing items captures regional material conditions, whereas health, education, environment, safety, civic engagement, and accessibility of services collectively demonstrate the regional quality of life. These two dimensions (regional material conditions and regional quality of life) are distinct from our regional SWB (Dardha & Rogge, 2020); a failure to examine them separately may lead to misleading findings and policy implications (OECD, 2020).

At the regional level, we control for regional objective well-being, innovation ecosystem, workforce education, and the crisis impact on the local economy. Regional objective well-being conditions—living material conditions (wealth, housing) and quality of life (local provision of social and economic arrangements and political and civil rights) in particular—are indicators of highly competitive regional market conditions, which progressively raise individuals' general awareness of competitiveness and confidence in perceived entrepreneurial capabilities for strategic actions and pivots (Becchetti, Corrado, & Fiaschetti, 2016; Hand, 2020; Kibler, 2013).[8] Although local business stock provides a basis for local firms to grow, the dynamics of the regional innovation ecosystem (regional patent applications) are a more reliable signal for entrepreneurship activities on innovation and growth (Content et al., 2020) that facilitate pivots to occur. Tierary-educated entrepreneurs generally have higher growth ambitions that elicit the likelihood for pivots (Guerrero, Mickiewicz, & Qin, 2024), which should also be expected for a higher regional share of the local workforce with NQ4 educational qualifications and above. Crisis impact on the local economy, particularly on the local labor market (proxied by the rate of claimant count in the region), according to our theorizing, triggers the likelihood of strategic renewal initiatives or pivots to mitigate potential losses caused by the crisis (Chaparro et al., 2021).

Regression model and estimation

We propose the following reduced-form equation:

$$\begin{aligned} Pivots_{ir} = {} & \beta_0 + \beta_1(Government\ support_i) \\ & + \beta_2(Regional\ SWB_r) \\ & + \beta_3(Government\ support_i \times Regional\ SWB_r) \\ & + \beta_4(Firm\ control_i) + \beta_5(Region\ control_r) + v_r \\ & + v_s + \mu_{ir} \end{aligned} \tag{1}$$

In which *Pivots* indicates the total number of pivots firm *i* located in region *r* makes during the Covid-19 pandemic; *Government support* is a vector of financial support and knowledge support; and *Regional SWB* is the OECD regional SWB indicator. *Firm control* is a vector of firm age, size, ownership, financial and human resource management, export, and ethnicity of entrepreneurs or managers. *Region control* is a vector of regional objective well-being, innovation ecosystem, workforce education, and the crisis impact on the local economy. The term v_r in Equation (1) represents the regional fixed effects, which are controlled using the UK NUTS-1 (11 regions excluding Northern Ireland) regional dummy variables. The term v_s is a vector of industry sector dummies to capture unobserved sectoral variations due to the impact of the crisis. Finally, the error term μ_{ir} accounts for unobserved factors that may affect $Pivots_{ir}$. Hypotheses 1 and 2 imply that $\beta_1 > 0$, whereas Hypothesis 4 implies that $\beta_2 < 0$. Hypotheses 5 and 6 imply that $\beta_3 > 0$. Table 2 presents the pairwise correlations.

This study employs a multilevel technique to estimate Equation (1) to take account of the multilevel structure of the dataset (Du & Nguyen, 2024; Estrin, Korosteleva, & Mickiewicz, 2013). Specifically, individual firms are set at Level 1, the 11 UK NUTS-1 regions represent Level 2, and the three UK nations are set at Level 3. This allows us to control for unobserved heterogeneity within a devolved context of the UK nations and regions, as well as unobserved firm-level heterogeneity. Using the multilevel technique for a cross-nation, cross-region, cross-individual firm dataset is therefore particularly relevant for us to capture the institutional differences (either in formal or informal perspectives) at the national (Estrin, Korosteleva, & Mickiewicz, 2013) or regional (Du & Nguyen, 2024; Nguyen, Mickiewicz, & Du, 2018) level on entrepreneurial behaviors. Standard errors are clustered at the regional level in all specifications.

RESULTS

Main results

Table 3 presents the regression results for the relationships between government support, regional SWB, and firm pivots. Estimates of key variables of interest are reasonably similar across specifications. The variance inflation factor statistics vary from 2.27 to 2.53 in all specifications, which is well below the conventional level of 10 and therefore indicates no serious multicollinearity issues (Chowdhury, Audretsch, & Belitski, 2019; Estrin, Korosteleva, & Mickiewicz, 2013).

The results show that financial support and knowledge support are positively associated with pivots conducted by SMEs, supporting Hypotheses 1 and 2. These findings confirm the perceived roles of government financing (Chit, Croucher, & Rizov, 2023; Cowling, Liu, & Zhang, 2016; Fatouh, Giansante, & Ongena, 2021) and/or knowledge provision (Bertschek et al., 2024; Nickerson & Zenger, 2004; Pereira & Bamel, 2021) in supporting a balanced resource system within SMEs that are generally financially constrained with limited necessary knowledge, experience, and know-how (Freel, 2000; Lim, Morse, & Yu, 2020) to confront crises.

To test Hypothesis 3, we conducted two-tailed *t*-tests of $\beta_{\text{Financial support}=0.112} = \beta_{\text{Knowledge support}=0.237}$ (Model 1). The *p*-value of the test is 0.000 and remains consistent

[8]While regional objective and subjective well-being can be related, each uniquely influences firm pivots. We include two regional objective wellbeing variables in the model, applying an orthogonalization approach to address their correlation and isolate individual effects.

TABLE 2 Correlation coefficients.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)
Pivots (1)																		
Financial support (2)	0.12																	
Knowledge support (3)	0.07	0.00																
Regional SWB (4)	−0.03	0.07	−0.08															
Firm size (5)	0.14	0.41	0.05	0.02														
Firm age (6)	−0.05	0.07	0.00	0.01	0.20													
Family ownership (7)	0.08	0.05	0.03	−0.06	0.27	0.13												
Other financing sources (8)	0.07	0.05	0.07	0.00	0.09	−0.01	0.01											
Revenue changes (9)	−0.08	0.01	−0.03	0.01	−0.07	0.06	0.00	−0.03										
Export (10)	−0.06	0.08	−0.04	0.07	−0.02	0.02	−0.06	−0.02	0.05									
BAME (11)	0.05	0.02	0.02	−0.09	0.08	−0.03	0.09	0.01	−0.01	−0.02								
R&D (12)	0.04	0.00	0.03	−0.01	0.11	0.02	0.01	0.06	−0.02	−0.08	0.03							
Training (13)	0.18	0.28	0.07	0.04	0.56	0.06	0.19	0.08	−0.07	−0.02	0.06	0.08						
Regional living material (14)	0.04	−0.06	0.01	−0.31	−0.02	0.00	0.04	0.01	0.00	−0.09	0.06	0.01	−0.01					
Regional life quality (15)	0.01	−0.02	0.05	−0.17	−0.03	0.01	−0.01	−0.02	0.02	0.08	0.00	−0.01	−0.02	0.00				
Regional business stock (16)	0.05	−0.08	0.05	−0.64	−0.02	−0.02	0.06	0.00	0.00	−0.12	0.12	0.01	−0.02	0.60	−0.04			
Regional patent applications (17)	0.01	−0.02	−0.01	0.07	−0.02	0.03	−0.01	0.00	0.01	0.01	0.00	−0.01	−0.01	0.18	0.46	0.02		
Regional high-level qualifications (18)	0.05	−0.04	−0.02	−0.13	0.00	0.00	0.04	0.02	0.00	−0.10	0.06	0.00	0.02	0.48	−0.30	0.71	−0.02	
Regional claimant count rate (19)	0.00	−0.02	0.05	−0.51	0.01	−0.01	0.03	0.00	−0.02	0.00	0.07	0.00	−0.01	−0.38	−0.04	0.13	−0.21	−0.19

TABLE 3 Multilevel estimation results.

Dependent variable: Pivots	(1)	(2)	(3)	(4)
Financial support	0.112***	0.112***	0.112***	0.112***
	(0.014)	(0.008)	(0.014)	(0.008)
Knowledge support	0.237***	0.238***	0.250***	0.250***
	(0.019)	(0.018)	(0.019)	(0.019)
Regional subjective well-being (RSWB)	−0.025*	−0.040**	−0.027*	−0.041**
	(0.015)	(0.019)	(0.015)	(0.019)
Financial support × RSWB		0.023**		0.023**
		(0.009)		(0.009)
Knowledge support × RSWB			0.040***	0.039***
			(0.004)	(0.004)
Firm size	0.012*	0.012*	0.012*	0.012*
	(0.007)	(0.007)	(0.007)	(0.007)
Firm age	−0.004***	−0.004***	−0.004***	−0.004***
	(0.001)	(0.001)	(0.001)	(0.001)
Family ownership	−0.045	−0.045	−0.045	−0.045
	(0.031)	(0.031)	(0.031)	(0.031)
Export	−0.157***	−0.156***	−0.157***	−0.157***
	(0.010)	(0.010)	(0.010)	(0.010)
Other financing sources	0.016***	0.015***	0.016***	0.015***
	(0.003)	(0.003)	(0.003)	(0.003)
BAME	0.105**	0.105**	0.105***	0.105***
	(0.041)	(0.041)	(0.041)	(0.041)
Revenues increase	0.149***	0.149***	0.149***	0.149***
	(0.037)	(0.037)	(0.037)	(0.037)
Revenues decrease	0.165***	0.166***	0.165***	0.166***
	(0.011)	(0.011)	(0.011)	(0.011)
R&D investment	0.073***	0.073***	0.073***	0.073***
	(0.021)	(0.021)	(0.021)	(0.021)
Employee training	0.261***	0.261***	0.261***	0.261***
	(0.033)	(0.032)	(0.033)	(0.032)
Regional living material	−0.087**	−0.086**	−0.087***	−0.086**
	(0.034)	(0.034)	(0.033)	(0.034)
Regional life quality	0.030***	0.030***	0.030***	0.030***
	(0.009)	(0.010)	(0.009)	(0.009)
Regional business stock	0.000***	0.000***	0.000***	0.000***
	(0.000)	(0.000)	(0.000)	(0.000)
Regional patent applications	0.001***	0.001***	0.001***	0.001***
	(0.000)	(0.000)	(0.000)	(0.000)
Regional high-level qualifications	0.010***	0.010***	0.011***	0.010***
	(0.003)	(0.003)	(0.003)	(0.003)
Regional claimant count rate	−0.058**	−0.058**	−0.057**	−0.057**
	(0.027)	(0.027)	(0.026)	(0.027)
Constant	0.525***	0.534***	0.515***	0.524***
	(0.109)	(0.106)	(0.107)	(0.105)
Observations	5894	5894	5894	5894
Fourteen sector dummies	Yes	Yes	Yes	Yes
Four ownership dummies	Yes	Yes	Yes	Yes

(Continues)

TABLE 3 (Continued)

Dependent variable: Pivots	(1)	(2)	(3)	(4)
No. of Level 1 group (region)	11	11	11	11
No. of Level 2 group (nation)	3	3	3	3
t-test Finance = Knowledge (*p*-value)	0.000	0.000	0.000	0.000

Note: The dependent variable is Pivots as defined in Table 1. Individual firms are set at Level 1; UK NUTS-1 regions (11 regions) are set at Level 2; UK nations are set at Level 3 (three countries). The standard errors are clustered at the regional level (11 regions) and asymptotically robust to heteroscedasticity.
***Indicates significance at 1%.
**Indicates significance at 5%.
*Indicates significance at 10%.

in other models, indicating that the two coefficients are significantly different at the 1% significance level. Therefore, knowledge support is deemed more essential to firm pivots than financial support during the crisis, supporting Hypothesis 3. This finding suggests that many SMEs benefit greatly from external knowledge provision, such as training programs, to cope with major crises such as the Covid-19 crisis that brought severe uncertainties and changes to the way of doing business (remote working and digitalization). This further confirms the knowledge-based view (Nickerson & Zenger, 2004; Pereira & Bamel, 2021).

Regarding the hypothesized relationship between regional SWB and SMEs' pivots, its associated coefficients are negative and statistically significant in all specifications. This finding implies that when entrepreneurs are embedded in a high level of regional SWB, they are less willing to change the status quo or are unable to commit to the desired number of pivots (i.e., they engage in fewer pivots) due to overconfidence or optimism. As such, the result validates Hypothesis 4. This finding echoes the arguments in Baron, Hmieleski, and Henry (2012) on the "downside of being up"—when life satisfaction is high (i.e., positive affect, optimism, and overconfidence), individuals are keen to keep the status quo by ignoring or downplaying negative information. This result is also consistent with the view by Chen et al. (2024) that overconfident entrepreneurs or managers are likely to underestimate risks associated with crises, hindering resource-constrained firms from proceeding with the desired number of pivots.

In terms of the interaction between government support and regional SWB, the estimates are positive and statistically significant. This finding suggests that the government support-pivots link, regardless of support types, is strengthened for SMEs embedded in regions with higher levels of SWB. Therefore, Hypotheses 5 and 6 are supported. Figures 1 and 2 illustrate the marginal effect of financial and knowledge support, respectively, at different levels of regional SWB. It can be seen that although government support in general enhances firm engagement in pivoting, its relationship is stronger in regions with higher levels of regional SWB (the slopes of the dashed lines are steeper in both figures).

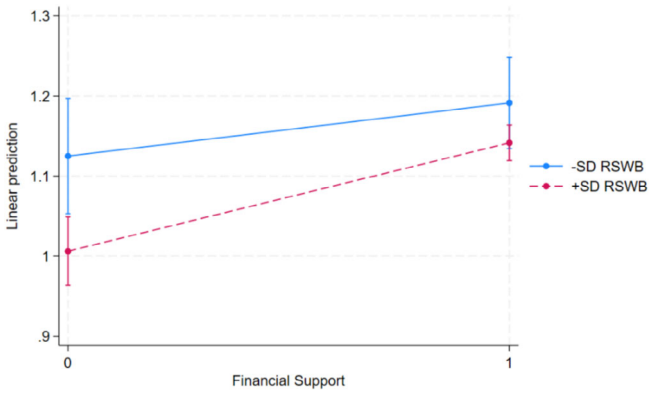

FIGURE 1 Joint association between financial support and regional SWB. *Note:* −SD RWB indicates one standard deviation below the mean of the regional subjective well-being variable. +SD RWB indicates one standard deviation above the mean of the regional subjective well-being variable.

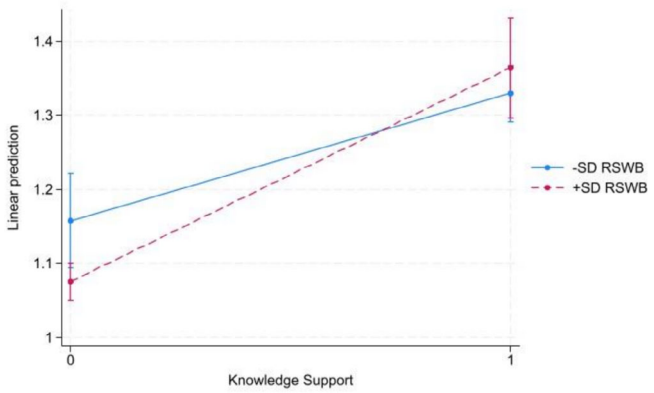

FIGURE 2 Joint association between knowledge support and regional SWB. *Note:* −SD RWB indicates one standard deviation below the mean of the regional subjective well-being variable. +SD RWB indicates one standard deviation above the mean of the regional subjective well-being variable.

Our findings suggest that both forms of government support signal the risk of keeping the status quo and of not aggressively pivoting to react to environmental shock. In this way, government support helps correct cognitive biases or errors arising from high life satisfaction and positive affect, ensuring firms can engage in

desired experimentations and pivots. Moreover, government support can activate the restorative role of regional SWB in mitigating the crisis-induced stressors for entrepreneurs (Backman et al., 2023; Eib & Bernhard-Oettel, 2024) and in encouraging SMEs to redirect their pivoting efforts toward supporting local communities (Morgan et al., 2020; Sharma et al., 2024) in the challenging time of crisis.

Robustness checks

We now conduct a set of robustness checks. First, we use alternative measurements of the dependent variable, incorporating different types of pivots (e.g., short-term strategies and a combination of innovation and short-term strategies). Second, we employ the ordered logit technique, which allows us to control for the unequal "distance" between each pivot. Third, we use the instrumental variables approach to address the potential endogeneity concerns, particularly omitted variable bias related to government support. Finally, we conduct a scenario-based experiment with 490 UK SME entrepreneurs to ensure the internal validity regarding the relationship between government support and SMEs' pivots. The results of these tests support the proposed hypotheses and show that our findings are robust to different empirical settings. A description and discussion of these tests are presented in detail in Appendices S3–S7.

Heterogeneity analysis

In this section, we explore heterogeneity in examined relationships by core demographic characteristics: firm size, firm age, and sector. As suggested by Cowling, Brown, and Rocha (2020) and Miklian and Hoelscher (2022), the nature and occurrence of pivots are largely heterogeneous across these characteristics due to different levels of vulnerability to crisis and the varying impacts of economic shocks. Specifically, we investigate the possible heterogeneous associations of government support and regional SWB with pivots across firm-size groups (medium-sized firms and smaller ones), firm-age classes (under 5 years, 5–15 years, and over 15 years in operation), and sectors (manufacturing and service). The results are reported in Table 4 below.

TABLE 4 Heterogeneity analysis by firm size, age, and sector.

	Firm size		Firm age			Sector	
	Micro and small firms	Medium-sized firms	<5 years	5–15 years	>15 years	Manufacturing	Service
Dependent variable: Pivots	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Financial support	0.097***	0.310***	0.164***	0.079***	0.118***	0.057***	0.130***
	(0.008)	(0.050)	(0.035)	(0.010)	(0.012)	(0.009)	(0.007)
Knowledge support	0.246***	0.265***	0.094	0.155***	0.298***	0.304***	0.230***
	(0.024)	(0.018)	(0.128)	(0.013)	(0.012)	(0.015)	(0.026)
Regional subjective well-being (RSWB)	−0.034*	−0.185***	−0.115*	−0.003	−0.056***	−0.042	−0.042**
	(0.020)	(0.026)	(0.068)	(0.015)	(0.019)	(0.029)	(0.019)
Financial support × RSWB	0.017*	0.175***	−0.007	−0.002	0.041***	0.019	0.026***
	(0.009)	(0.036)	(0.045)	(0.023)	(0.007)	(0.022)	(0.009)
Knowledge support × RSWB	0.010**	0.171***	−0.454***	0.108***	0.043***	0.077***	0.030***
	(0.005)	(0.004)	(0.097)	(0.005)	(0.003)	(0.019)	(0.003)
Firm size	0.013	0.050	−0.086***	0.012	0.031***	0.036***	0.006
	(0.010)	(0.032)	(0.020)	(0.008)	(0.008)	(0.013)	(0.008)
Firm age	−0.004***	−0.001	0.034	−0.005	−0.002***	−0.002**	−0.004***
	(0.001)	(0.001)	(0.021)	(0.007)	(0.001)	(0.001)	(0.001)
Family ownership	−0.037	−0.087**	−0.085	0.025	−0.085**	0.119***	−0.093***
	(0.024)	(0.039)	(0.124)	(0.031)	(0.038)	(0.039)	(0.027)
Export	−0.151***	−0.187**	−0.113	−0.151***	−0.166***	−0.007	−0.190***
	(0.019)	(0.094)	(0.227)	(0.027)	(0.018)	(0.116)	(0.019)
Other financing sources	0.018***	0.004	0.021	0.016***	0.015***	0.013***	0.017***
	(0.003)	(0.004)	(0.015)	(0.004)	(0.002)	(0.003)	(0.003)
BAME	0.127***	−0.062	0.152	0.295***	−0.063	0.232***	0.082*
	(0.039)	(0.075)	(0.139)	(0.032)	(0.073)	(0.053)	(0.049)

(Continues)

TABLE 4 (Continued)

	Firm size		Firm age			Sector	
Dependent variable: Pivots	**Micro and small firms (1)**	**Medium-sized firms (2)**	**<5 years (3)**	**5–15 years (4)**	**>15 years (5)**	**Manufacturing (6)**	**Service (7)**
Revenues increase	0.177***	−0.042	−0.017	0.076***	0.191***	0.115	0.160***
	(0.042)	(0.037)	(0.097)	(0.009)	(0.047)	(0.074)	(0.028)
Revenues decrease	0.171***	0.087**	0.121	0.088***	0.204***	0.095	0.193***
	(0.015)	(0.034)	(0.087)	(0.029)	(0.012)	(0.060)	(0.009)
R&D investment	0.102***	−0.079*	−0.034	0.167***	0.007	−0.004	0.110***
	(0.022)	(0.048)	(0.193)	(0.065)	(0.041)	(0.035)	(0.036)
Employee training	0.264***	0.263***	0.370***	0.248***	0.254***	0.262***	0.260***
	(0.041)	(0.051)	(0.067)	(0.061)	(0.023)	(0.029)	(0.044)
Regional living material	−0.088**	−0.102***	0.043	−0.187***	−0.055	−0.062	−0.091***
	(0.040)	(0.016)	(0.165)	(0.025)	(0.045)	(0.039)	(0.032)
Regional life quality	0.030***	0.019***	0.019	0.025*	0.040***	0.042***	0.021**
	(0.010)	(0.004)	(0.044)	(0.014)	(0.012)	(0.016)	(0.009)
Regional business stock	0.000***	0.001***	−0.001***	0.001***	0.000***	0.000**	0.001***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Regional patent applications	0.001***	−0.001***	0.004***	0.003***	0.000	−0.000	0.002***
	(0.000)	(0.000)	(0.001)	(0.000)	(0.000)	(0.000)	(0.000)
Regional high-level qualifications	0.010***	0.008***	0.011	0.015***	0.009***	0.009**	0.010***
	(0.003)	(0.002)	(0.015)	(0.002)	(0.003)	(0.004)	(0.002)
Regional claimant count rate	−0.057*	−0.092***	−0.057	−0.113***	−0.026	−0.107***	−0.045*
	(0.031)	(0.012)	(0.139)	(0.030)	(0.037)	(0.023)	(0.026)
Constant	0.493***	1.593***	0.778***	0.219	0.494***	0.780***	0.869***
	(0.113)	(0.285)	(0.301)	(0.320)	(0.097)	(0.103)	(0.042)
Observations	5246	648	416	1.870	3608	1501	4393
Fourteen sector dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Four ownership dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes
No. of Level 1 group (region)	11	11	11	11	11	11	11
No. of Level 2 group (nation)	3	3	3	3	3	3	3

Note: Firm-size groups are defined by the number of employment: micro and small firms (<50 employees); medium-sized firms (50–249 employees). The dependent variable is Pivots as defined in Table 1. Individual firms are set at Level 1; UK NUTS-1 regions (11 regions) are set at Level 2; UK nations are set at Level 3 (three countries). The standard errors are clustered at the regional level (11 regions) and asymptotically robust to heteroscedasticity.
***Indicates significance at 1%.
**Indicates significance at 5%.
*Indicates significance at 10%.

Our heterogeneity analysis shows that the relationships observed earlier in the full sample persist across different firm-size groups, albeit with varying magnitudes (Columns 1 and 2). Notably, we find that medium-sized firms in regions with a high level of SWB appear to be more discouraged from pivots compared with smaller firms (including micro and small-sized firms) and also compared with the earlier estimates we derive across all firms. This may suggest that for firms with more assets, capital, and organizational stability, overconfident entrepreneurs or managers may overestimate the effectiveness of the current strategies and underestimate the need for strategic pivots, thereby deterring firms from changing the status quo (Baron, Hmieleski, & Henry, 2012). We also find that government knowledge support is deemed more important than financial support to pivots of the smaller firms, whereas both forms of government support are of relatively equal importance for medium-sized firms. This highlights the relative gains of external knowledge for the smallest firms—often severely constrained by limited technical know-how and cash reserves in times of crisis (Belghitar, Moro, & Radić, 2022; Cowling, Brown, & Rocha, 2020)—in shaping their strategic pivots to emerge stronger post-crisis, reinforcing the knowledge-based view on firms.

Nonetheless, we find substantial variation in the estimated relationships across age classes (Columns 3 through 5). The estimates reported earlier across the

final sample are largely driven by the oldest group of firms with over 15 years in operation, which also constitutes the largest share of our sample. Startups (younger than 5 years) that typically have liabilities of smallness and newness appear to benefit largely from government financial support when conducting their pivots. More established firms perceive both financial and knowledge support as positively related to their pivots.

We also find strong evidence of sectoral heterogeneity. Particularly, the inverse relationship between regional SWB and SMEs' pivots, along with its positive joint association with both types of government support, is concentrated within the service sector (Column 7). For manufacturing firms, regional SWB exhibits no significant link, and government financial support is universally important for firms across regions with high and low SWB (Column 6). Our findings highlight the importance of government financial and knowledge provision on pivots of SMEs in the service sector that have been most severely affected by the Covid-19 lockdowns and restrictions (Manolova et al., 2020).

DISCUSSION

Conceptual discussion

Although previous studies have emphasized the importance of entrepreneurs' experience and leadership in pivoting (Chaparro & Gomes, 2021), little attention has been paid to conceptualizing how external resources, such as government financial and knowledge support, as well as the surrounding environment, regional SWB, for instance, are linked with SME pivots in crises. This paper fills the gap by making the following conceptual contributions.

First, we contribute to the emerging literature on pivoting (Balta, Papadopoulos, & Spanaki, 2024; Kirtley & O'Mahony, 2020; Morgan et al., 2020) by exploring government support as a determinant of SMEs' pivots. Our study therefore addresses the call for conceptualizing the role of government support in SMEs' pivots and what type of support is more beneficial. Our findings imply that the provision of government financial and knowledge support is correlated with larger resources—finance and knowledge—deployed for pivoting within SMEs to confront crises. Nonetheless, the occurrence and perceived benefits of each type of support are deemed variable across SMEs, depending on firm vulnerability to crisis, the severity of crisis impact, and firm characteristics.

Second, we contribute to the literature on regional SWB (Cheng et al., 2023; Chuluun & Graham, 2016; Le Roy & Ottaviani, 2021) by exploring its connection with SME pivots during a crisis. By showing that SWB can be contagious at the regional level, we highlight that this shared aspect of well-being can lead to lock-in effects that constrain entrepreneurs' decision-making processes—such as their commitment to pivots—in times of crisis, despite its positive nature and impact on entrepreneurial activities during noncrisis periods. Understanding this regional perspective is crucial for recognizing how the exacerbation of such lock-in effects can hinder entrepreneurial adaptability amid extreme and unpredictable events like major crises. In the context of the United Kingdom, this paper is one of the first to examine the role played by regional SWB in SME pivots. Prior research highlights that community well-being varies significantly across UK regions (Hand, 2020; Tranos, Kitsos, & Ortega-Argilés, 2021); however, whether and how regional SWB might influence SMEs' pivoting actions in a crisis is unknown. We add to this research by showing that variations in regional SWB have an impact on the capacity of UK SMEs to deal with an unprecedented crisis, such as the Covid-19 pandemic.

Third, this paper is the first to examine the joint effect of regional aspects and government support on SMEs' reaction to a crisis. By so doing, we contribute to the literature on the interrelationship between government support and SWB (Batjargal et al., 2023; Eib & Bernhard-Oettel, 2024) within the context of central and local institutions (Nguyen, Mickiewicz, & Du, 2018; Rodríguez-Pose & Ezcurra, 2010). We subscribe to Nguyen, Mickiewicz, and Du (2018) in calling for more research into the role of local informal institutions, such as shared norms, values, and beliefs, in facilitating interactions among local SMEs via government support schemes.

Policy implications

This study has three implications for UK policymakers who wish to improve the efficiency of their support schemes for SMEs. First, we suggest that the UK government pay more attention to the heterogeneity of regional SWB when drafting policy. Having a high level of life satisfaction in a community is a desired administrative goal of local authorities. However, in the context of crises, a high level of regional SWB may not always exert a positive association with local business performance. The "dark side of being up" needs to be taken into account by policymakers.

Second, we suggest that UK government packages aimed at SMEs' pivots during crises consider both financial and knowledge support, with each serving a distinct role. On the one hand, our findings for the relative "performance" of knowledge over finance support highlight the role of the UK government's assistance measures with formal training schemes such as "Help to Grow: Management" or through the provision of platforms on which SMEs can interact and exchange knowledge. Evidently, the relative importance of knowledge support is highly perceived by the smallest firms including sole

proprietorships (Table 4, Column 1). On the other hand, government financing provided during the pandemic has been found to be positively associated with SMEs' pivot, particularly on startups (Table 4, Column 3). Yet, government financing has been critiqued for assessment mechanisms, particularly concerning whether financially weak or small firms are more likely to access government loan guarantee schemes—potentially leading to increased insolvencies in the post-crisis period (Crawford, Cui, & Kewley, 2024; Dörr, Licht, & Murmann, 2022). We raise the importance of paired soft support (e.g., financial advice) with government finance to ensure a more well-rounded package for UK SMEs,[9] which can be done through local governments or "intermediate" institutions, such as employers' associations (Chit, Croucher, & Rizov, 2023), to effectively transmit assistance and advice to firms.

Third, we recommend that UK governments take into account regional aspects when designing support schemes for SMEs. Our study shows that the interaction between regional SWB and the support provided by the central government is associated with more pivots deployed by SMEs. We suggest that targeted government support for SMEs should be prioritized in regions with higher SWB, where SMEs are most in need of assistance and where such support can activate the restorative role of well-being while preventing the exacerbation of its lock-in effects, nudging these firms to deploy further pivots. Although we agree with Calabrese, Cowling, and Liu (2022) and Gai, Arcuri, and Ielasi (2023), among others that central government should take the lead in dealing with an unprecedented crisis such as the Covid-19 pandemic, we argue that in order to maximize the value of central support schemes, central government should devolve power to local governments, which can determine how these schemes should be executed on a local level (Rodríguez-Pose & Ezcurra, 2010). Uniformly applying a support scheme across regions with dissimilar characteristics, such as varying levels of regional SWB, may not yield optimal benefits for SMEs.

Managerial implications

This paper offers two implications for entrepreneurs running SMEs. First, we suggest that SME entrepreneurs who consider pivoting during a time of crisis seek external finance and knowledge advice from the government. Although government finance is conducive to a balanced resource system of SMEs for expansion of strategic changes (Lim, Morse, & Yu, 2020), it may not be enough for SMEs that lack knowledge about what to change and how to do so (Giones et al., 2020) to confront major crises with unprecedented challenges, such as digitalization in the Covid-19 pandemic (Balta, Papadopoulos, & Spanaki, 2024). Actively seeking knowledge support from government—through formal training programs or networking platforms for information exchange—in combination with government finance obtained helps enlarge their resource base for pivoting. It appears that external knowledge gains as such are particularly crucial for micro and small firms that are deemed more constrained ones among firm-size groups in terms of technical know-how and finance, or for SMEs in the service sectors, in which hospitality and retail sectors were considered among the most affected ones by government restrictions (Table 4).

Second, SME entrepreneurs and managers should be aware that their behaviors, including pivot decisions, can be highly related to regional SWB conditions—how others in the region evaluate life events, perceive opportunity and associated risk, and rely on the local community. We thus suggest that entrepreneurs become mindful of the characteristics of their own regional well-being, such as local happiness or local support structure, because cognitive biases arising or social values gained may be expenses for pivots related to risk-taking activities or investments (Baron, Hmieleski, & Henry, 2012; Chen et al., 2024; Morgan et al., 2020). We also suggest that entrepreneurs in a strong local support structure can gain social value while maintaining their product market position through aggressive programs of pivoting by obtaining government support, an insight that entrepreneurs can view as economic or knowledge gains from the public to serve for social returns to the public.

CONCLUSION

This paper examines the importance of government support, regional SWB, and their interaction on pivots of UK SMEs in times of crisis. Using the multilevel approach, we show that government financial and knowledge support play a crucial role in enhancing SMEs' engagement in pivoting during the Covid-19 crisis, with a stronger positive association of government knowledge support than the other type of support. The number of pivots is, however, inversely related to regional SWB conditions in the sense that SMEs in regions with a higher level of SWB (i.e., more overconfident and optimistic entrepreneurs/managers) engage in fewer pivots (e.g., they are reluctant to change their status quo or unable to commit to pivots at the desired rates). In this situation, government support becomes more essential since it sends a signal to local SMEs that they need to take action against the crisis by pivoting more aggressively to develop competitive advantages. In this way, this paper highlights the interaction between external resources and surrounding environments in that the positive association between government support and SMEs'

[9]In the case of government loan guarantee schemes, such as those implemented during the Covid-19 crisis, soft (i.e., knowledge) support paired with the government financing includes financial advice from government (or intermediate institutions) on, say, bank loan screening to ensure the success of lending (Chit, Croucher, & Rizov, 2023; Crawford, Cui, & Kewley, 2024).

pivots is stronger for firms embedded in higher regional SWB.

This paper has limitations that should be acknowledged, but which also provide potential avenues for future research. First, because of the cross-sectional nature of the data (the LSBS 2021 wave no longer contains the Covid-19-related question) and the research design, the findings are interpreted in terms of differences between areas or associations, rather than causal effects. Future research could expand our theoretical framework and examine it in other contexts using longitudinal data. Second, although we paid attention to regional SWB, other regional characteristics, such as institutional settings, may also play a role. Future research could examine how regional institutions (both formal and informal) influence pivots by SMEs in the context of a crisis. Third, we acknowledge a limitation regarding the geographical dimension of the RSWB variable, which is measured at the NUTS-1 level. These spatial units represent extensive regions, in some cases encompassing entire nations of Scotland and Wales, and therefore may mask substantial intraregional variation. Future research should employ measures with finer spatial granularity to better capture regional heterogeneity.

AUTHOR CONTRIBUTIONS

Chau M. Chu: Conceptualization; formal analysis; writing—original draft preparation; writing—review and editing. **Bach Nguyen**: Conceptualization; writing—original draft preparation; writing—review and editing.

CONFLICT OF INTEREST STATEMENT

The authors declare no conflicts of interest.

DATA AVAILABILITY STATEMENT

Data are available on reasonable request from the authors.

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SUPPORTING INFORMATION

Additional supporting information can be found online in the Supporting Information section at the end of this article.

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