Adaptation, compensation and disengagement: how ICT competences influence nascent entrepreneurs' strategies in a global crisis environment

Marina Estrada-Cruz, Ignacio Mira-Solves and Jesús Martínez-Mateo
Department of Economic and Financial Studies, Miguel Hernández University of Elche, Elche, Spain

Received 7 June 2023
Revised 14 November 2023
14 February 2024
Accepted 20 February 2024

Abstract

Purpose – A global crisis like that caused by the COVID-19 pandemic threatens the survival of any business, but especially of nascent entrepreneurs, due to their vulnerable situation. At this stage of entrepreneurship, information and communication technology capabilities (ICTCs) are critical skills that help entrepreneurs develop their new businesses, fostering economic adaptability to counteract adverse effects. This study advances knowledge of how nascent entrepreneurs react in an environment of global crisis.

Design/methodology/approach – The study analyzes a sample of 331 Spanish nascent entrepreneurs to determine the mediating effect of ICTCs on the relationship between the impact of a global crisis (e.g. COVID-19) and the firm's strategic response.

Findings – The results suggest that crises influence adaptation and compensation strategies significantly and that ICTCs exert a total mediating effect on this relationship. The results do not, however, establish a clear relationship between the impact of the COVID-19 crisis and disengagement response, but rather a negative relationship, possibly influenced by government attempts to mitigate the pandemic's economic consequences (economic aid to maintain the workforce, financial support for business model survival).

Originality/value – The COVID-19 crisis revealed ICT as a key technology for continuing business operations. This study analyzes how ICTCs affect nascent entrepreneurs' strategies in crisis environments. Our analysis is important because these entrepreneurs have invested resources in their new project. We must determine their strategic response to crisis environments: adaptation, compensation or disengagement. The sample itself, collected during the pandemic, provides unique insights into the impact of the crisis on nascent business decisions.

Keywords Nascent entrepreneur, Adaptation, Compensation, Disengagement, Crisis

Paper type Research paper

1. Introduction

The recent COVID-19 pandemic was a new global health, social and economic crisis (Qadri *et al.*, 2021). It exemplifies how economic and disruptive crises impact many individuals, organizations and communities, frequently with large-scale global effects.

The authors thank the Conselleria of Education, Universities and Employment for financing this research through research project CIGE/2021/085.

Consent for publication: The authors hereby give their consent for the publication of this article.

Competing interests: There is no competing interests among the authors.

European Journal of Management and Business Economics
Emerald Publishing Limited
e-ISSN: 2444-8494
p-ISSN: 2444-8451
DOI 10.1108/EJMBE-06-2023-0174

The ongoing threat of invisible crises from both human and natural causes (i.e. global warming) has become society's new normal (Lee *et al.*, 2023).

Governments recognize crises' long-term consequences and implement measures to stimulate business development and employment, areas where entrepreneurship is key (Hakimi *et al.*, 2023). Factors such as entrepreneurial spirit, innovation, flexibility, self-efficacy and business resilience (among others) can significantly mitigate economic difficulties under such challenging circumstances (Korsgaard *et al.*, 2020).

Resource scarcity increases nascent entrepreneurs' vulnerability to crises (Barron *et al.*, 2012; Mayr *et al.*, 2017). We must study nascent entrepreneurs' vulnerability, as they have already invested time, work, effort and resources in their project's initial stages (Liñán and Jaén, 2020). Guo *et al.* (2020) argue, however, that crises provide a unique environment necessary for the emergence of entrepreneurial and prosperous organizations.

Dynamism, uncertainty and complexity of the business environment (including the disruptive change of the global crisis) are the main triggers of transformation in nascent entrepreneurs' strategic plans (Mhlanga and Moloi, 2020). Much research suggests that the adoption of digital technologies plays an important role in responding to crises (Guo *et al.*, 2020). The literature has studied the effect of crises on new ventures, but very few studies analyze its effect on nascent entrepreneurs (Guo *et al.*, 2020; Castro and Zermeño, 2020).

Entrepreneurs have promoted extensive use of information and communications technologies (ICTs) as a critical tool and alternative to continuing business development by counteracting the pandemic's adverse effects and promoting economic resilience (Atsuko and Karazhantva, 2020). ICT capabilities (ICTCs) are therefore essential capabilities in the incipient phase of business development.

This paper analyzes the following questions:

(1) How do nascent entrepreneurs choose their strategic responses to fight a global crisis?

(2) How might their ICTCs affect this response?

Drawing on Davidsson and Gordon (2016), we theorize that decreased opportunity confidence due to a crisis like COVID-19 produces three responses: disengagement, if decreased opportunity confidence makes other options more attractive, compensation, as increased resource inputs to restore opportunity confidence or adaptation, to make the venture idea more feasible in the new circumstances. Such responses help determine how nascent entrepreneurs handle global crises. We must also deepen our knowledge of the types of new initiatives influenced by the global crisis to consider whether they are less innovative or less growth-oriented. Our results suggest better ways to manage public aid or tax adjustments to help these entrepreneurs.

This study makes several important research contributions. First, current knowledge of entrepreneurship in times of crisis remains limited and fragmented due to a focus on a single type of crisis. We also lack understanding of entrepreneurs' weaknesses in choosing a strategy to survive in this environment.

Second, recently created firms' undergo a decision-making process involving the adoption of new strategic perspectives on change. Cortez and Johnston (2020) affirm that proactive strategic flexibility stresses effective management in situations of change in the competitive environment.

Further, correlations between ICTCs and recently created firms' responses are useful to better determine the implications of business spirit for the general socioeconomic system. Finally, our study provides more information on specific entrepreneurial attitudes that are beneficial in environments of global crisis. This information is relevant to policymakers, entrepreneurs and researchers.

2. Theoretical framework

2.1 Impact of crisis and nascent entrepreneurs' response strategies

Although "crisis" has been defined variously, most studies define it as a disruptive event that occurs unpredictably, significantly threatening the actor's (i.e. individuals', organization's and/or community's) normal functioning (Williams *et al.*, 2017). Rauch and Hulsink (2021) categorize the crises discussed in the entrepreneurship literature into different types based on two taxonomies: scope of impact and primary causes of the crisis. Each crisis is fundamentally heterogeneous, but some have common characteristics.

The recent COVID-19 crisis impacted economies globally, and all governments are trying to overcome its adverse consequences. This public health crisis has primarily slowed economic growth and affected employment, economic and social well-being (Galindo-Martín *et al.*, 2021). As one of the most significant recent crises (Alon *et al.*, 2020), the pandemic's disruptive characteristics and impact threaten the demand for products, services and performance and even question the prevailing business model (Batista Canino *et al.*, 2020; Ratten, 2021).

One significant post-pandemic change was a boost in digital change to enable online transactions. Transformational shifts toward the digital economy were clear before the pandemic but accelerated during it due to the need to conduct business online (Jamal and Budke, 2020).

According to the latest studies, new venture creation has positively affected the handling of various past crises (Heyden *et al.*, 2020). For Barba-Sánchez and Atienza-Sahuquillo (2018), the presence of entrepreneurial spirit enables societies to launch more ventures, positively impacting macroeconomic variables such as employment, development and innovation.

Nascent entrepreneurs are much more vulnerable to crises than entrepreneurs due to scarce resources (Barron *et al.*, 2012; Mayr *et al.*, 2017). The research on nascent entrepreneurs in a crisis environment voices two perspectives. One stresses nascent entrepreneurs' vulnerability due to their limited size and resources. The other confirms nascent entrepreneurs' resilience, flexibility and adaptability (Pal *et al.*, 2014; Smallbone *et al.*, 2012). The evidence supports both alternatives. The COVID-19 crisis imposed global changes on nascent entrepreneurs' operating conditions, requiring a search for opportunities to identify strategies enabling them to survive (Mhlanga and Moloi, 2020; Seetharaman, 2020).

Based on the concept of opportunity confidence developed by Dimov (2010) and analysis by Davidsson and Gordon (2016), we theorize that decreased opportunity confidence in a crisis produces three responses: disengagement, if the decrease makes other options more attractive, compensation, in increased resource inputs to restore opportunity confidence or adaptation, to make the venture idea more feasible in the new circumstances. Such responses help determine how nascent entrepreneurs cope with global crises.

Dimov (2010) introduced the notion of opportunity confidence as "nascent entrepreneurs' degree of conviction that successfully exploiting the venture idea they are pursuing is feasible" (p. 1124). Dimov found that opportunity confidence positively affects venture emergence and that, through it, entrepreneurial experience and early planning only indirectly affect venture emergence.

Arguably, nascent entrepreneurs' conviction that their venture idea is a real opportunity makes them marshal available resources to pursue the goal of creating a new business (Davidsson and Gordon, 2016).

The adaptation response is consistent with resilience. Tugade and Fredrickson (2004) define resilience as the ability effectively to adapt to and overcome difficult conditions. Masten (2001) demonstrated that business resilience is a business-wide term comprising crisis management and business continuity and represents the ability to adapt and respond rapidly to all types of risk. Resilience is commonly related to flexibility and adaptability. An adaptation strategy is defined as a pattern of behavior or actions planned by humans to meet

minimum requirements and solve problems (Putra, 2003). For Suharto (2009), adaptation strategy is a series of coping strategies, generally defined as people's ability to implement methods to overcome life problems (Kristiana *et al.*, 2021). Based on these arguments, nascent entrepreneurs could react to the negative effects of a crisis by adopting a strategy of adaptation. The more developed their project, the more strongly committed the nascent entrepreneur. Further, more resources are usually invested in the nascent stage of new ventures than in other steps.

Based on the foregoing, we propose the following hypothesis:

H1. The impact of a global crisis is positively related to nascent entrepreneurs' development of an adaptation response.

In disasters, however, nascent entrepreneurs' strategy response may be compensation (Liñán and Jaén, 2020). In new projects under ordinary conditions, nascent entrepreneurs typically focus on learning and increasing efficiency, responding to the situation by analyzing potential future challenges, changing strategies based on customer needs and increasing effort and resources to foster faster company development (Kryeziu *et al.*, 2022). For example, nascent entrepreneurs with relatively high human capital have better alternatives available and thus higher opportunity costs (Cassar, 2006). The larger the alternative compensation, the more attractive the expected reward associated with venturing (Amit *et al.*, 1995).

In a crisis environment, compensation response is based on increasing resource inputs to counteract the situation's negative impact. We thus expect the impact of a crisis to be positively related to nascent entrepreneurs' development of a compensation strategy.

Based on the foregoing, we formulate the following hypothesis:

H2. The impact of a global crisis is positively related to nascent entrepreneurs' development of a compensation response.

Finally, nascent entrepreneurs' specific vulnerability could lead them to disengage in response to crises, perhaps due to limited resources to mitigate the effects (Davidsson and Gordon, 2016). Disengagement responses are especially likely in founders whose opportunity confidence falls below a critical threshold (Gimeno *et al.*, 1997). Such situations occur when the variety of products or services is limited or when only a small market share is available and the new venture is in a very competitive sector. Similarly, de Figueiredo *et al.* (2019) demonstrate why a reduction in business scope in a crisis may be associated with a net loss for firms. We thus expect the impact of a crisis to be positively related to the disengagement response.

Based on the theoretical framework analyzed, we propose the following hypothesis:

H3. The impact of a global crisis is positively related to nascent entrepreneurs' development of a disengagement response.

2.2 ICT capabilities and nascent entrepreneurs

A crisis environment is unpredictable and highly uncertain, with widespread impact on new ventures. To respond effectively to these characteristics, various entrepreneurs have adopted new digital technologies (Modgil *et al.*, 2022; Papagiannidis *et al.*, 2020) or adapted those they already had. The COVID-19 pandemic was in fact a major accelerator of digitalization (Papagiannidis *et al.*, 2020; Zahra, 2021).

COVID-19 made ICT skills essential tools for entrepreneurs (Batista Canino *et al.*, 2020) – an alternative to combat the pandemic's adverse effects and a way to improve society and foster economic adaptability (Atsuko and Karazhantva, 2020).

Parida and Örtqvist (2015, p. 283) defined ICTC as "a firm's ability to strategically use a wide array of technologies for business purposes, ranging from basic to very sophisticated" (Mithas *et al.*, 2011; Tippins and Sohi, 2003).

Entrepreneurs can apply ICTCs via a wide range of technologies, from database programs to local area networks (Matlay and Addis, 2003). ICTCs for nascent entrepreneurs and small businesses include intranet, extranet, enterprise resource planning, supply chain management, e-commerce and other related technology applications (Kannabiran and Dharmalingam, 2012). For Nieto and Fernandez (2006), ICT reduces barriers to distant markets and helps firms find niche markets. A literature review by Parida and Örtqvist (2015) identified three key aspects of ICTC: (1) internal use (Fillis *et al.*, 2003; Levy *et al.*, 2001), (2) use for collaboration (Levy *et al.*, 2001; Sarshar and Isikdag, 2004) and (3) use for communication (Venkatraman, 1994). Our analysis of nascent entrepreneurs' abilities in this field is organized around these three issues.

The literature has documented ICTC support for adaptation of business models as one strategy used to respond to disruptive environmental change – specifically, technologies that help recently created firms identify new commercial practices (Richter, 2020). Nascent entrepreneurs' ICTCs thus respond well to the disruptions of the global crisis, the impact of which differs from changes driven by human innovation (Richter, 2020). Although some firms knew how to adapt creatively with digital technology support during the pandemic, the shift to digitalization was challenging for entrepreneurs in sectors not classified as essential (Seetharaman, 2020).

Based on the prior literature, we propose that ICTC influences the relationship between the impact of a global crisis and adaptation strategy, mediating the relationship between these variables.

H4. ICTC positively mediates the relationship between impact of a global crisis and nascent entrepreneurs' development of an adaptation strategy response.

Nascent entrepreneurs may instead implement a compensation strategy based on increased resource inputs (i.e. new human resources with ICTCs and new technology investment) to restore opportunity.

Parida and Örtqvist (2015) argue that ICTCs provide and increase external resources and enhance internal resource efficiency. These capabilities are integral to enhancing small firms' operations and performance (Nguyen *et al.*, 2015).

Expertise in ICT drives radical and incremental innovation performance in new ventures and nascent entrepreneurs. Technologically capable nascent entrepreneurs can obtain abundant, valuable information about markets and customers and thus better position the company to understand customers' needs and tailor products to those needs through improved internal processes (Polo Pena *et al.*, 2011). Because these arguments suggest various benefits associated with ICTCs, we affirm that they are important in increasing nascent entrepreneurs' investment in new resources.

Based on the foregoing, we propose the following hypothesis:

H5. ICTC positively mediates the relationship between impact of a global crisis and nascent entrepreneurs' development of a compensation strategy response.

Alternatively, Davidsson and Gordon (2016) argue that nascent entrepreneurs in a crisis environment may adopt a disengagement strategy due to limited resources. A disengagement strategy is based on decreased opportunity in the new venture when the items offered are scarce or the sector is very competitive. Haeussler *et al.* (2012) also argue that developing and using ICTCs can be complex, uncertain, costly and time-consuming for nascent entrepreneurs. Following Parida and Örtqvist (2015), we argue that this relationship depends largely on the type of investment and cost of new technologies in the crisis

environment, even though previous studies have observed a positive effect of ICTCs on innovation performance. Following Guerrero *et al.* (2023), the quality of ICT infrastructure and capabilities can significantly enhance nascent entrepreneurs' growth aspirations and limit their search for new opportunities in the context of global crises and in regional and local environments. Based on the foregoing, we argue that ICTCs could be used in a crisis environment to lead a disengagement response.

H6. ICTC inversely mediates the relationship between impact of a global crisis and nascent entrepreneurs' development of a disengagement strategy response.

Figure 1 presents our analysis.

3. Methodology

To test our hypothesis, we used the GEM-COVID study conducted by the GEM Spain Network (Batista Canino *et al.*, 2020) because this global crisis was unprecedented due to its rapidly changing pace and impact.

Our questionnaire was sent on April 20–30, 2020. It sought to analyze the impact of the COVID-19 crisis on the entrepreneurial fabric. The survey was completed by 4,000 entrepreneurs in Spain. We analyzed nascent entrepreneurs, defined as those who had actively devoted resources to starting a business but not yet paid wages or salaries for three months (including to themselves) (Neira *et al.*, 2021). The number of nascent entrepreneurs was 331, with an approximate response rate of 8.3% (for the full sample). Following Gem Spain (Neira *et al.*, 2021), we confirm that 2.4% of the total adult population in Spain are nascent entrepreneurs.

Despite seeming low, this rate is satisfactory. For Camelo *et al.* (2004), the rate of collaboration between university research and new ventures in Spain is low. The number of responses is also satisfactory, above the minimum threshold required to apply structural equation methodology and test the measurement scales' psychometric properties (Spector, 1992; Williams *et al.*, 2004).

To reduce common method bias (Podsakoff *et al.*, 2003), the questionnaire highlighted the study's commitment to complete confidentiality of responses.

The structural equations methodology was used to analyze the data with the partial least squares (PLS-SEM) technique (Fornell and Cha, 1994) and SmartPLS 3.0 software (Ringle *et al.*, 2015). The PLS model chosen is noted for its advantages in studying human behavior (Hair *et al.*, 2011), optimal predictive potential (Cepeda and Roldán, 2008; Poon and Tung, 2022) and suitability for small samples (Hair *et al.*, 2011).

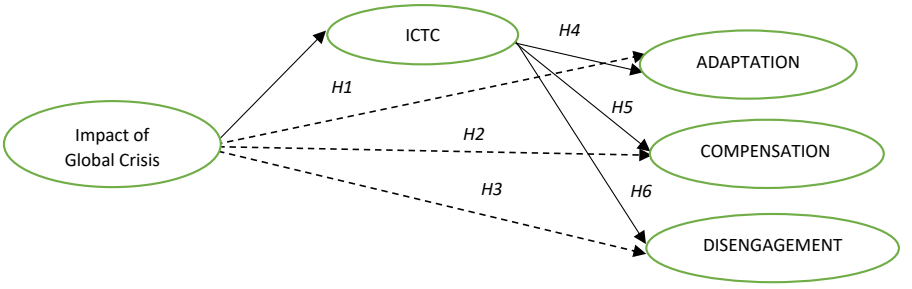

Figure 1.
Relationship between crisis impact and nascent entrepreneurs' response

Source(s): Own elaboration

Analysis of the sample's sociodemographic characteristics shows that 51.66% of respondents were men and 84.59% were under 50 years old. These data are consistent with the profile of nascent entrepreneurs in the GEM Spain report (Neira *et al.*, 2021).

3.1 Measures used

COVID-19 impact: Scales developed by Batista Canino *et al.* (2020) and Adžić and Al-Mansour (2021). The items composing this variable assess the impact of the COVID-19 crisis on nascent entrepreneurs' business models, demand for products and services and performance. Following Ventura and Satorra (2015), we adapted the evaluations provided to a Likert scale.

ICTC: The measurement of this item was adapted from the scale validated by Parida and Örtqvist (2015). Respondents were asked to evaluate the degree of utility for developing their businesses obtained from the digital tools available to them at the beginning of the pandemic, thus analyzing nascent entrepreneurs' ICTC situation when facing the impact of COVID-19. Following Ventura and Satorra (2015), the evaluations were adapted to a Likert scale.

Strategy responses: Based on Davidsson and Gordon (2016), we measured the various responses, considering the following items:

(1) *Adaptation:* Adapted from Dahlqvist and Wiklund's (2012) scale of nascent venture contexts and expanded to cover four forms of novelty: (1) product or service, (2) promotion or selling, (3) production or sourcing and (4) target market or customers.

(2) *Compensation:* Measured through an increase in work effort and investment in technology and other assets, considering increasing resource inputs to counteract the negative impact of the crisis.

(3) *Disengagement:* Scale adapted to measure responses related to closing or transferring the new venture.

All measures were captured on a Likert scale ranging from 1 to 5 (1 = Very unlikely, 5 = Very likely). All responses were measured during the pandemic period to assess the crisis' impact on nascent entrepreneurs' strategies.

For items used to measure the variables analyzed, see Appendix 1.

4. Results

Table 1 presents the results of the descriptive analysis of the data and the correlation matrix. We observe a good association between the model variables used.

After data collection, we validated the measurement instruments through exploratory analysis of reliability and dimensionality (Anderson and Gerbing, 1988).

We used the structural equations method to analyze the data, with the PLS-SEM technique (Fornell and Cha, 1994) and SmartPLS 3.0 software (Ringle *et al.*, 2015). Various

	Mean	s.d	1	2	3	4	5
Impact of COVID-19 (1)	2.42	0.77	1				
ICTC (2)	3.45	1.54	0.50***	1			
Adaptation (3)	2.38	1.36	0.17***	0.24***	1		
Compensation (4)	1.77	1.26	0.22***	0.27***	0.66***	1	
Disengagement (5)	1.50	1.27	−0.16***	−0.17***	0.34***	0.23***	1

Note(s): $N = 331$ Note: *$p < 0.05$; **$p < 0.01$ and ***$p < 0.001$
Source(s): Own elaboration

Table 1. Correlation among the variables analyzed

characteristics of PLS-SEM led to increased use by researchers in areas such as management, market research and strategy (Gruber *et al.*, 2010).

Next, we analyzed the measurement model's validity and reliability to confirm whether the manifest variables measured the different theoretical concepts accurately.

To evaluate the individual reliability of the items, we measured the loadings (λ) of the indicators on their respective constructs (Carmines and Zeller, 1979). Moreover, the average variance extracted (AVE) was above 0.50 for all constructs (Fornell and Larcker, 1981). Table 2 displays the information obtained from analyzing the variables.

Next, we used the heterotrait-monotrait ratio to confirm discriminant validity (Henseler *et al.*, 2015). Table 3 displays the information on discriminant validity.

In evaluating the variance of the dependent latent variables explained by the constructs that predict them (R^2), we observed that it was greater than 0.1 (Falk and Miller, 1992). In analyzing the size of R^2 as a criterion of predictive relevance, we also applied the sampling reuse technique proposed by Stone (1974) and Geisser (1975). Finally, we applied a bootstrapping procedure to evaluate the significance of the structural relationships.

Table 4 presents the results for the interaction of the mediating effect of the variable impact of the COVID-19 crisis, measured as follows: First, we assessed the Direct Model (I), which analyzes the relationship between the impact of COVID-19 on adaptation, compensation and disengagement to validate H1, H2 and H3. Second, the Mediation Model (II) shows the variable ICTC's effect on validating H4.

		Factor loading	CA	CR	AVE
Impact of COVID-19	IC1	0.74	0.70	0.82	0.61
	IC2	0.80			
	IC 3	0.77			
ICTC	I1	0.90	0.70	0.78	0.64
	I2	0.70			
Adaptation	A1	0.89	0.83	0.88	0.66
	A2	0.93			
	A3	0.91			
Compensation	C1	0.89	0.78	0.90	0.82
	C2	0.91			
Disengagement	D1	0.79	0.7	0.83	0.71
	D2	0.88			

Table 2. Analysis of measurement model variables

Note(s): *$p < 0.05$; **$p < 0.01$ and ***$p < 0.001$ $N = 331$; Cronbach's alpha coefficient (α) and composite reliability (CR), take values above the required threshold of 0.7
Source: Own elaboration; Nunnally (1978), Fornell and Larcker (1981), Hair *et al.* (2011)

	1	2	3	4	5
Adaptation	0.817				
Compensation	0.692	0.906			
Disengagement	0.257	0.233	1		
Impact of COVID-19	0.225	0.229	−0.235	0.779	
ICTC	0.284	0.295	−0.158	0.522	0.801

Table 3. Discriminant validity

Note(s): $N = 331$
Source(s): Own elaboration

	Direct Model I		Mediation Model II	
	Standardized beta	*t*-value bootstrap	Standardized beta	*t*-value bootstrap
Impact COVID-19 – Adaptation	0.25	5.57***	0.10	1.48
Impact COVID-19 – Compensation	0.24	4.42***	0.10	1.32
Impact COVID-19 – Disengagement	−0.25	4.45***	−0.21	3.40***
Impact COVID-19 crisis – ICTC			0.52	13.04***
ICTC – Adaptation			0.23	3.66***
ICTC – Compensation			0.24	3.53***
ICTC – Disengagement			−0.04	0.77
R^2 (Adaptation)	0.05		0.08	
R^2 (Compensation)	0.05		0.09	
R^2 (Disengagement)	0.06		0.05	
R^2 (ICTC)			0.27	
Q^2 (Adaptation)	0.03		0.05	
Q^2 (Compensation)	0.04		0.07	
Q^2 (Disengagement)	0.06		0.05	
Q^2 (ICTC)			0.17	

Note(s): $N = 331$ Note: *$p < 0.05$; **$p < 0.01$ and ***$p < 0.001$
Source(s): Own elaboration

Table 4.
Analysis of mediating interaction effect

In the first model (Direct Model I), the data are significantly related to the impact of COVID-19 on adaptation and compensation strategy responses ($\beta = 0.25$ and $\beta = 0.24$, respectively; $p < 0.01$). The relationship between the impact of COVID-19 and disengagement responses, however, is inverse ($\beta = -0.25$; $p < 0.01$), indicating that a high impact of the global crisis on nascent entrepreneurs' projects can produce strategy responses that increase resource inputs to restore opportunity confidence or reorient the project. The greater impact of the COVID-19 crisis is not positively related to the disengagement response; however, possibly due to government attempts to mitigate the pandemic's economic consequences (economic aid to maintain the workforce, financial support for business model survival). These entrepreneurs may also have adopted a "wait-and-see" response (Stephan *et al.*, 2022) to the uncertainty the crisis created. This information supports H1 and H2, but not H3.

To confirm H4, H5 and H6, we follow the analysis in Baron and Kenny (1986). First, the independent variable must affect the dependent variable significantly. Second, the independent variable must affect the mediating variable significantly and the mediating variable must affect the dependent variable significantly.

The Mediation Model (II) confirms the fulfillment of this condition for adaptation and compensation strategy responses only. We find no mediation effect for the disengagement strategy response.

In the first situation, the relationship between the impact of COVID-19 and ICTC is positive and significant ($\beta = 0.52$; $p < 0.001$), as are the relationships of ICTC to adaptation and compensation responses ($\beta = 0.23$ and $\beta = 0.24$; $p < 0.001$). The relationships between the impact of COVID-19 and these variables are not, however, significant ($\beta = 0.10$ in both cases).

The results for disengagement response show that it is not significantly related to ICTC ($\beta = -0.04$). The relationship between the impact of COVID-19 and disengagement response, however, is negative and significant ($\beta = -0.21$; $p < 0.001$).

Finally, this study analyzes the significance of the indirect effect, following the analysis by Preacher and Hayes (2008), as the Sobel test (1982) is not appropriate for either small samples

or standardized coefficients. This analysis yields a t-value >2.58 in the first case, confirming a significant indirect effect and indicating total mediation for adaptation and compensation responses. Calculating the influence of the independent variable on the dependent variable confirms that the latter ceases to be significant (t-value <2.58) and that mediation is total according to this criterion.

The disengagement response shows no mediating effect, indicating that ICTC is not a crucial resource in such a strategic response. The disengagement response is especially likely to affect founders whose opportunity confidence falls below a critical threshold (Gimeno *et al.*, 1997; Davidsson and Gordon, 2016). Based on the data from this second model, we support H4 and H5, but reject H6.

Finally, the proposed model presents a good fit according to most indicators considered.

5. Discussion

This study analyzes how an environment of global crisis influences entrepreneurs' strategic responses, given their influence on the development of the economy and employment.

To understand how the pandemic crisis influenced nascent entrepreneurs' strategies, this study analyzes the types of responses with which these entrepreneurs face the situation: adaptation, compensation or disengagement (Davidsson and Gordon, 2016). Since the COVID-19 crisis revealed ICT as a key technology in continuing business operations, we also analyze how ICTCs affect nascent entrepreneurs' strategies. Moreover, the sample, collected during the pandemic, provides unique information on the recent impact of an economic crisis on nascent entrepreneurial decisions.

The results show a positive relationship between the impact of crises on compensation and adaptation strategies, with a similar and significant effect on both strategies. The results do not, however, establish a clear relationship between crisis impact and disengagement response, but rather a negative relationship, possibly influenced by government attempts to mitigate the economic consequences of a crisis like the COVID-19 pandemic (economic aid to maintain the workforce, financial support for business model survival).

Another reason for this effect could be nascent entrepreneurs' being in an early stage of the business life cycle, a more flexible and adaptable (product or service) stage that tends not to disengage in a crisis environment. This result supports studies confirming that resilience and flexibility are the most important qualities for nascent entrepreneurs in uncertain environments (Williams *et al.*, 2017).

Other authors argue that entrepreneurial agility as a mechanism of resilience is not the only possible crisis response (Klyver and Nielsen, 2021). Analyzing threat-rigidity theory, Staw *et al.* (1981) suggest that entrepreneurs in crises focus more internally on the business and conserve their resources, considering only a narrow set of actions. Rather than adapt, entrepreneurs show more rigidity and adopt a "wait-and-see" attitude. This "low agility approach" could enable entrepreneurs to preserve opportunity and confidence in adversity. Low agility can also mitigate the impact of a crisis on entrepreneurial flexibility by preventing entrepreneurs from trying to adapt to an uncertain and ever-changing situation (Stephan *et al.*, 2022).

The results obtained also show that ICTC fully mediates the relationship between the impact of crises on compensation and adaptation strategy responses. This result suggests that nascent entrepreneurs use their ICTCs to perform the abovementioned strategy responses. The findings also help demonstrate ICTCs' importance as a key instrument for competing in a post-crisis environment, highlighting the importance of ICTCs and resources.

ICTCs not only affect such areas as efficiency through more efficient communications or reductions in production costs but also they create new entrepreneurial opportunities for nascent entrepreneurs, for example, by enabling expansion into new markets and new ways

to create and capture value, generating new business models (Bertschek *et al.*, 2023). Research shows that nascent entrepreneurs who develop ICTCs recognize and exploit emerging opportunities differently from others (Kreuzer *et al.*, 2022). ICTCs also increase nascent entrepreneurs' flexibility to react to unknown situations, challenges and opportunities. Adaptability through reprogramming and scalability makes it easy to adjust products, services, internal processes and business models to new situations (Lyytinen *et al.*, 2016). Similarly, research from economic and financial crises shows that highly digitalized firms are more flexible, better able to implement process innovation and maintain high-level productivity throughout the crisis (Bertschek *et al.*, 2019) and thus more resilient.

Finally, ICTCs do not mediate the relationship between the impact of COVID-19 and disengagement responses.

6. Conclusions

Our results show that the sample analyzed seems more confident when facing a crisis and more inclined to decision-making related to product/service adaptation or increased work effort than to disengagement responses.

These results support Nassif *et al.* (2020), who argued that some nascent entrepreneurs are more persistent and resilient than others (Hoang and Gimeno, 2010; Bullough *et al.*, 2014). These factors could explain their survival and ability to overcome obstacles by responding positively to crises. Some analyses of resilience have found it to be associated with greater flexibility and adaptability in business founders who have survived difficult circumstances through intelligent, economic and adaptive strategies and tactics (Sarasvathy *et al.*, 2008).

According to the effectuation logic decision-making approach (Sarasvathy, 2001), nascent entrepreneurs react to crises, since effectuation uses the means available in the environment to improve the robustness of the business model. Effectuation uses flexibility and experimentation to create new opportunities, products and markets (Sarasvathy, 2001; Sarasvathy *et al.*, 2008). Similarly, our findings suggest that some nascent entrepreneurs perceive crises as a challenge in searching for new opportunities and generate a decision-making process that involves the adoption of new strategic perspectives on change. These strategies are based on nascent entrepreneurs' responses (compensation, adaptation and disengagement) to an uncertain situation, and ICTCs play a significant role in facilitating both a compensation strategy response and adaptation.

7. Implications for theory and practice

These reflections have implications for nascent entrepreneurs. They provide information on how these entrepreneurs continually search for and adapt to new opportunities in complex environments, such as those caused by the pandemic and aggravated by resource scarcity (Nassif *et al.*, 2020). Disruptive changes in the environment also generate new business models and ways of competing in the market. Crises accentuate the firm's need for strategic adaptation through innovation in the redesign of existing products, new product design, alternative digital services and the search for new distribution channels.

A disruptive situation like COVID-19 presents an opportunity to improve policy systems and implement new public support through business incubators and startup support programs. Our results suggest that such public spending would be justified, especially for nascent ventures.

Moreover, our study findings highlight the need to establish policies to support nascent entrepreneurship, promote new technology adoption in recently created firms and facilitate the acquisition of digital skills. Digital skills help nascent entrepreneurs adapt their strategies

faster than they would with other resources and with less associated cost. It is thus important to include these strategies in entrepreneurial learning to improve nascent entrepreneurs' adoption of digital technologies.

8. Limitations and future research

Although this study advances understanding of the entrepreneurial fabric's adaptation capability in uncertain situations like those caused by COVID-19, tackling additional questions could extend our results. As this study focuses on nascent entrepreneurs, further research must be performed on small businesses and other types of firms, such as SMEs and large firms. Future studies could also analyze which type of founder is most likely to show which response. A second line, due to our focus on nascent entrepreneurs in Spain, could analyze different countries' entrepreneurial fabric as well as the influence of culture and education. Finally, advanced analysis could compare the data obtained with different types of crises in the entrepreneurship literature to determine similarities and differences.

References

Adžić, S. and Al-Mansour, J. (2021), "Business analysis in the times of COVID-19: empirical testing of the contemporary academic findings", *Management Science Letters*, Vol. 11 No. 1, pp. 1-10, doi: 10.5267/j.msl.2020.8.036.

Alon, T., Kim, M., Lagakos, D. and VanVuren, M. (2020), "How should policy responses to the COVID-19 pandemic differ in the developing world?", (No. w27273), National Bureau of Economic Research.

Amit, R., Muller, E. and Cockburn, I. (1995), "Opportunity costs and entrepreneurial activity", *Journal of Business Venturing*, Vol. 10 No. 2, pp. 95-106, doi: 10.1016/0883-9026(94)00017-o.

Anderson, J.C. and Gerbing, D.W. (1988), "Structural equation modeling in practice: a review and recommended two-step approach", *Psychological Bulletin*, Vol. 103 No. 3, pp. 411-423, doi: 10.1037//0033-2909.103.3.411.

Atsuko, O. and Karazhantva, A. (2020), *Digital Resilience against COVID-19*, United Nations ESCAP, Bangkok, available at: https://www.unescap.org/blog/digital-resilience-against-covid-19#

Barba-Sánchez, V. and Atienza-Sahuquillo, C. (2018), "Entrepreneurial intention among engineering students: the role of entrepreneurship education", *European Research on Management and Business Economics*, Vol. 24 No. 1, pp. 53-61, doi: 10.1016/j.iedeen.2017.04.001.

Baron, R.M. and Kenny, D.A. (1986), "The moderator–mediator variable distinction in social psychological research: conceptual, strategic, and statistical considerations", *Journal of Personality and Social Psychology*, Vol. 51 No. 6, pp. 1173-1182, doi: 10.1037//0022-3514.51.6.1173.

Barron, A., Hultén, P. and Hudson, S. (2012), "The financial crisis and the gathering of political intelligence: a cross-country comparison of SMEs in France, Sweden and the UK", *International Small Business Journal*, Vol. 30 No. 4, pp. 345-366, doi: 10.1177/0266242610368551.

Batista Canino, R.M., Batle Lorente, J., Fernández Laviada, A., Fuentes Fuentes, M. M., Mira Soves, I., Neira Gómez, I., Peña Legazkue, I. and Saiz Santos, M. (2020), *Situación del emprendimiento en España ante la crisis del COVID-19, Análisis y recomendaciones*, Spanish Entrepreneurship Observatory.

Bertschek, I., Polder, M. and Schulte, P. (2019), "ICT and resilience in times of crisis: evidence from cross-country micro moments data", *Economics of Innovation and New Technology*, Vol. 28 No. 8, pp. 759-774, doi: 10.1080/10438599.2018.1557417.

Bertschek, I., Block, J., Kritikos, A.S. and Stiel, C. (2023), "German financial state aid during COVID-19 pandemic: higher impact among digitalized self-employed", *Entrepreneurship and Regional Development*, Vol. 36 Nos 1-2, pp. 1-22, doi: 10.1080/08985626.2023.2196267.

Bullough, A., Renko, M. and Myatt, T. (2014), "Danger zone entrepreneurs: the importance of resilience and self-efficacy for entrepreneurial intentions", *Entrepreneurship: Theory and Practice*, Vol. 38 No. 3, pp. 473-499, doi: 10.1111/etap.12006.

Camelo, C., Martín, F., Romero, P.M. and Valle, R. (2004), "Human resources management in Spain: is it possible to speak of a typical model?", *The International Journal of Human Resource Management*, Vol. 15 No. 6, pp. 935-958, doi: 10.1080/0958519041000167725O.

Carmines, E. and Zeller, R. (1979), *Reliability and Validity Assessment*, Sage Publications, Beverly Hills, CA.

Cassar, G. (2006), "Entrepreneur opportunity costs and intended venture growth", *Journal of Business Venturing*, Vol. 21 No. 5, pp. 610-632, doi: 10.1016/j.jbusvent.2005.02.011.

Castro, M.P. and Zermeño, M.G.G. (2020), "Being an entrepreneur post-COVID-19–resilience in times of crisis: a systematic literature review", *Journal of Entrepreneurship in Emerging Economies*, Vol. 13 No. 4, pp. 721-746, doi: 10.1108/JEEE-07-2020-0246.

Cepeda, G. and Roldán, J. (2008), *Aplicando en la práctica la técnica PLS en la administración de empresas [Applying the PLS technique in practice in business administration]*, University of Seville, available at: ciberconta.unizar.es/doctorado/PLSGabrielCepeda.pdf

Cortez, R.M. and Johnston, W.J. (2020), "The Coronavirus crisis in B2B settings: crisis uniqueness and managerial implications based on social exchange theory", *Industrial Marketing Management*, Vol. 88, pp. 125-135, doi: 10.1016/j.indmarman.2020.05.004.

Dahlqvist, J. and Wiklund, J. (2012), "Measuring the market newness of new ventures", *Journal of Business Venturing*, Vol. 27 No. 2, pp. 185-196, doi: 10.1016/j.jbusvent.2010.12.001.

Davidsson, P. and Gordon, S.R. (2016), "Much ado about nothing? The surprising persistence of nascent entrepreneurs through macroeconomic crisis", *Entrepreneurship Theory and Practice*, Vol. 40 No. 4, pp. 915-941, doi: 10.1111/etap.12152.

de Figueiredo, R.J.P., Feldman, E.R. and Rawley, E. (2019), "The costs of refocusing: evidence from hedge fund closures during the financial crisis", *Strategic Management Journal*, Vol. 40 No. 8, pp. 1268-1290, doi: 10.1002/smj.3026.

Dimov, D. (2010), "Nascent entrepreneurs and venture emergence: opportunity confidence, human capital, and early planning", *Journal of Management Studies*, Vol. 47 No. 6, pp. 1123-1153, doi: 10.1111/j.1467-6486.2009.00874.x.

Falk, R.F. and Miller, N.B. (1992), *A Primer for Soft Modeling*, University of Akron Press, Akron, OH.

Fillis, I., Johansson, U. and Wagner, B. (2003), "A conceptualisation of the opportunities and barriers to e-business development in the smaller firm", *Journal of Small Business and Enterprise Development*, Vol. 10 No. 3, pp. 336-344, doi: 10.1108/14626000310489808.

Fornell, C. and Cha, J. (1994), "Partial least squares", *Advanced Methods of Marketing Research*, Vol. 407 No. 3, pp. 52-78.

Fornell, C. and Larcker, D.F. (1981), "Evaluating structural equation models with unobservable variables and measurement error", *Journal of Marketing Research*, Vol. 18 No. 1, pp. 39-50, doi: 10.2307/3151312.

Galindo-Martín, M.Á., Castaño-Martínez, M.S. and Méndez-Picazo, M.T. (2021), "Effects of the pandemic crisis on entrepreneurship and sustainable development", *Journal of Business Research*, Vol. 137, pp. 345-353, doi: 10.1016/j.jbusres.2021.08.053.

Geisser, S. (1975), "The predictive sample reuse method with applications", *Journal of the American Statistical Association*, Vol. 70 No. 350, pp. 320-328, doi: 10.1080/01621459.1975.10479865.

Gimeno, J., Folta, T.B., Cooper, A.C. and Woo, C.Y. (1997), "Survival of the fittest? Entrepreneurial human capital and the persistence of underperforming firms", *Administrative Science Quarterly*, Vol. 42 No. 4, pp. 750-783, doi: 10.2307/2393656.

Gruber, T., Fuß, S., Voss, R. and Gläser-Zikuda, M. (2010), "Examining student satisfaction with higher education services: using a new measurement tool", *International Journal of Public Sector Management*, Vol. 23 No. 2, pp. 105-123, doi: 10.1108/09513551011022474.

Guerrero, M., Mickiewicz, T. and Qin, F. (2023), "Entrepreneurial growth aspirations during the COVID-19 pandemic: the role of ICT infrastructure quality versus policy response", *Entrepreneurship and Regional Development*, Vol. 36 Nos 1-2, pp. 1-21, doi: 10.1080/08985626.2023.2233473.

Guo, H., Yang, Z., Huang, R. and Guo, A. (2020), "The digitalization and public crisis responses of small and medium enterprises: implications from a COVID-19 survey", *Frontiers in Business Research China*, Vol. 14 No. 1, p. 19, doi: 10.1186/s11782-020-00087-1.

Haeussler, C., Patzelt, H. and Zahra, S.A. (2012), "Strategic alliances and product development in high technology new firms: the moderating effect of technological capabilities", *Journal of Business Venturing*, Vol. 27 No. 2, pp. 217-233, doi: 10.1016/j.jbusvent.2010.10.002.

Hair, J.F., Ringle, C.M. and Sarstedt, M. (2011), "PLS-SEM: indeed a silver bullet", *Journal of Marketing Theory and Practice*, Vol. 19 No. 2, pp. 139-151, doi: 10.2753/mtp1069-6679190202.

Hakimi, A., Boussaada, R. and Karmani, M. (2023), "Corporate social responsibility and firm performance: a threshold analysis of European firms", *European Journal of Management and Business Economics*, Vol. 2 No. 24, doi: 10.1108/ejmbe-07-2022-0224.

Henseler, J., Ringle, C.M. and Sarstedt, M. (2015), "A new criterion for assessing discriminant validity in variance-based structural equation modeling", *Journal of the Academy of Marketing Science*, Vol. 43 No. 1, pp. 115-135, doi: 10.1007/s11747-014-0403-8.

Heyden, M.L., Wilden, R. and Wise, C. (2020), "Navigating crisis from the backseat? How top managers can support radical change initiatives by middle managers", *Industrial Marketing Management*, Vol. 88, pp. 305-313, doi: 10.1016/j.indmarman.2020.05.024.

Hoang, H. and Gimeno, J. (2010), "Becoming a founder: how founder role identity affects entrepreneurial transitions and persistence in founding", *Journal of Business Venturing*, Vol. 25 No. 1, pp. 41-53, doi: 10.1016/j.jbusvent.2008.07.002.

Jamal, T. and Budke, C. (2020), "Tourism in a world with pandemics: local-global responsibility and action", *Journal of Tourism Futures*, Vol. 6 No. 2, pp. 181-188, doi: 10.1108/jtf-02-2020-0014.

Kannabiran, G. and Dharmalingam, P. (2012), "Enablers and inhibitors of advanced information technologies adoption by SMEs: an empirical study of auto ancillaries in India", *Journal of Enterprise Information Management*, Vol. 25 No. 2, pp. 186-209, doi: 10.1108/17410391211204419.

Klyver, K. and Nielsen, S.L. (2021), "Which crisis strategies are (expectedly) effective among SMEs during COVID-19?", *Journal of Business Venturing Insights*, Vol. 16, e00273, doi: 10.1016/j.jbvi.2021.e00273.

Korsgaard, S., Hunt, R.A., Townsend, D.M. and Ingstrup, M.B. (2020), "COVID-19 and the importance of space in entrepreneurship research and policy", *International Small Business Journal: Researching Entrepreneurship*, Vol. 1 No. 8, pp. 1-14, doi: 10.1177/0266242620963942.

Kreuzer, T., Lindenthal, A.K., Oberländer, A.M. and Röglinger, M. (2022), "The effects of digital technology on opportunity recognition", *Business and Information Systems Engineering*, Vol. 64 No. 1, pp. 47-67, doi: 10.1007/s12599-021-00733-9.

Kristiana, Y., Pramono, R. and Brian, R. (2021), "Adaptation strategy of tourism industry stakeholders during the COVID-19 pandemic: a case study in Indonesia", *Journal of Asian Finance, Economics and Business*, Vol. 8 No. 4, pp. 213-223.

Kryeziu, L., Bağış, M., Kurutkan, M.N., Krasniqi, B.A. and Haziri, A. (2022), "COVID-19 impact and firm reactions towards crisis: evidence from a transition economy", *Journal of Entrepreneurship, Management, and Innovation*, Vol. 18 No. 1, pp. 169-196, doi: 10.7341/20221816.

Lee, Y., Kim, J., Mah, S. and Karr, A. (2023), "Entrepreneurship in times of crisis: a comprehensive Review with future directions", *Entrepreneurship Research Journal*, Vol. 13 No. 2, pp. 1-46, doi: 10.1515/erj-2022-0366.

Levy, M., Powell, P. and Yetton, P. (2001), "SMEs: aligning IS and the strategic context", *Journal of Information Technology*, Vol. 16 No. 3, pp. 133-144, doi: 10.1080/02683960110063672.

Liñán, F. and Jaén, I. (2020), "The Covid-19 pandemic and entrepreneurship: some reflections", *International Journal of Emerging Markets*, Vol. 17 No. 5, pp. 1165-1174, doi: 10.1108/IJOEM-05-2020-0491.

Lyytinen, K., Yoo, Y. and Boland Jr, R.J. (2016), "Digital product innovation within four classes of innovation networks", *Information Systems Journal*, Vol. 26 No. 1, pp. 47-75, doi: 10.1111/isj.12093.

Masten, A.S. (2001), "Ordinary magic: resilience processes in development", *American Psychologist*, Vol. 56 No. 3, pp. 227-238, doi: 10.1037//0003-066x.56.3.227.

Matlay, H. and Addis, M. (2003), "Adoption of ICT and e-commerce in small businesses: an HEI-based consultancy perspective", *Journal of Small Business and Enterprise Development*, Vol. 10 No. 3, pp. 321-335, doi: 10.1108/14626000310489790.

Mayr, S., Mitter, C. and Aichmayr, A. (2017), "Corporate crisis and sustainable reorganization: evidence from bankrupt Austrian SMEs", *Journal of Small Business Management*, Vol. 55 No. 1, pp. 108-127, doi: 10.1111/jsbm.12248.

Mhlanga, D. and Moloi, T. (2020), "COVID-19 and the digital transformation of education: what are we learning on 4IR in South Africa?", *Education Sciences*, Vol. 10 No. 7, pp. 1-12, doi: 10.3390/educsci10070180.

Mithas, S., Ramasubbu, N. and Sambamurthy, V. (2011), "How information management capability influences firm performance", *MIS Quarterly*, Vol. 35 No. 1, pp. 237-256, doi: 10.2307/23043496.

Modgil, S., Dwivedi, Y.K., Rana, N.P., Gupta, S. and Kamble, S. (2022), "Has COVID-19 accelerated opportunities for digital entrepreneurship? An Indian perspective", *Technological Forecasting and Social Change*, Vol. 175, 121415, doi: 10.1016/j.techfore.2021.121415.

Nassif, V.M.J., Rossetto, D.E. and Júnior, E.I. (2020), "Entrepreneurial responses of coping: catastrophic events and crisis situations", *Iberoamerican Journal of Entrepreneurship and Small Business*, Vol. 9 No. 4, pp. I-XXI.

Neira, I., Guerrero, M., Calvo, N., del Mar Fuentes, M., Fernández-Laviada, A., Leporati, M. and Torres, A.J. (2021), *Global Entrepreneurship Monitor. Informe GEM España 2020-2021*, Universidad de Cantabria, Santander, Vol. 256.

Nguyen, T.H., Newby, M. and Macaulay, M.J. (2015), "Information technology adoption in small business: confirmation of a proposed framework", *Journal of Small Business Management*, Vol. 53 No. 1, pp. 207-227, doi: 10.1111/jsbm.12058.

Nieto, M.J. and Fernandez, Z. (2006), "The role of information technology in corporate strategy of small and medium enterprises", *Journal of International Entrepreneurship*, Vol. 3 No. 4, pp. 251-262, doi: 10.1007/s10843-006-7854-z.

Nunnally, J. (1978), *Psychometric Methods*, Harper & Row, New York.

Pal, R., Torstensson, H. and Mattila, H. (2014), "Antecedents of organizational resilience in economic crises: an empirical study of Swedish textile and clothing SMEs", *International Journal of Production Economics*, Vol. 147, pp. 410-428, doi: 10.1016/j.ijpe.2013.02.031.

Papagiannidis, S., Harris, J. and Morton, D. (2020), "WHO led the digital transformation of your company? A reflection of IT related challenges during the pandemic", *International Journal of Information Management*, Vol. 55, 102166, doi: 10.1016/j.ijinfomgt.2020.102166.

Parida, V. and Örtqvist, D. (2015), "Interactive effects of network capability, ICT capability, and financial slack on technology-based small firm innovation performance", *Journal of Small Business Management*, Vol. 53, pp. 278-298, doi: 10.1111/jsbm.12191.

Podsakoff, P.M., MacKenzie, S.B., Lee, J.Y. and Podsakoff, N.P. (2003), "Common method biases in behavioral research: a critical review of the literature and recommended remedies", *Journal of Applied Psychology*, Vol. 88 No. 5, pp. 879-903, doi: 10.1037/0021-9010.88.5.879.

Polo Pena, A.I., Frías Jamilena, D.M. and Rodriguez Molina, M.A. (2011), "Impact of market orientation and ICT on the performance of rural smaller service enterprises", *Journal of Small Business Management*, Vol. 49 No. 3, pp. 331-360, doi: 10.1111/j.1540-627x.2011.00332.x.

Poon, W.C. and Tung, S.E.H. (2022), "The rise of online food delivery culture during the COVID-19 pandemic: an analysis of intention and its associated risk", *European Journal of Management and Business Economics*, Vol. 33 No. 1, pp. 54-73, doi: 10.1108/ejmbe-04-2021-0128.

Preacher, K.J. and Hayes, A.F. (2008), "Asymptotic and resampling strategies for assessing and comparing indirect effects in multiple mediator models", *Behavior Research Methods*, Vol. 40 No. 3, pp. 879-891, doi: 10.3758/brm.40.3.879.

Putra, H.S.A. (2003), *Moral, Rational and Political Economics in the Small Industry in Java: Essays on Economic Anthropology*, Kepel Press, Yogyakarta.

Qadri, U.A., Ghani, M.B.A., Bibi, S., Tahir, A.H., Farooq, M.I. and Kashif, A.R. (2021), "The learning effect on organizational performance during a crisis: a serial mediation analysis with knowledge creation, storage and sharing", *European Journal of Management and Business Economics*, Vol. 33 No. 1, pp. 37-53, doi: 10.1108/ejmbe-03-2021-0107.

Ratten, V. (2021), "COVID-19 and entrepreneurship: future research directions", *Strategic Change*, Vol. 30 No. 2, pp. 91-98, doi: 10.1002/jsc.2392.

Rauch, A. and Hulsink, W. (2021), "Just one damned thing after another: towards an event-based perspective of entrepreneurship", *Entrepreneurship: Theory and Practice*, Vol. 47 No. 3, pp. 1-20, 10422587211061738, doi: 10.1177/10422587211061738.

Richter, A. (2020), "Locked-down digital work", *International Journal of Information Management*, Vol. 55, 102157, doi: 10.1016/j.ijinfomgt.2020.102157.

Ringle, C.M., Wende, S. and Becker, J.M. (2015), *SmartPLS 3*, Boenningstedt, SmartPLS GmbH, available at: http://www.smartpls.com

Sarasvathy, S.D. (2001), "Causation and effectuation: toward a theoretical shift from economic inevitability to entrepreneurial contingency", *Academy of Management Review*, Vol. 26 No. 2, pp. 243-263, doi: 10.2307/259121.

Sarasvathy, S.D., Dew, N., Read, S. and Wiltbank, R. (2008), "Designing organizations that design environments: lessons from entrepreneurial expertise", *Organization Studies*, Vol. 29 No. 3, pp. 331-350, doi: 10.1177/0170840607088017.

Sarshar, M. and Isikdag, U. (2004), "A survey of ICT use in the Turkish construction industry", *Engineering, Construction, and Architectural Management*, Vol. 11 No. 4, pp. 238-247, doi: 10.1108/09699980410547595.

Seetharaman, P. (2020), "Business models shifts: impact of covid-19", *International Journal of Information Management*, Vol. 54, 102173, doi: 10.1016/j.ijinfomgt.2020.102173.

Smallbone, D., Deakins, D., Battisti, M. and Kitching, J. (2012), "Small business responses to a major economic downturn: empirical perspectives from New Zealand and the United Kingdom", *International Small Business Journal*, Vol. 30 No. 7, pp. 754-777, doi: 10.1177/0266242612448077.

Sobel, M.E. (1982), "Asymptotic confidence intervals for indirect effects in structural equation models", *Sociological Methodology*, Vol. 13, pp. 290-312, doi: 10.2307/270723.

Spector, P.E. (1992), *Summated Rating Scale Construction: An Introduction*, Sage Publications, London.

Staw, B.M., Sandelands, L.E. and Dutton, J.E. (1981), "Threat rigidity effects in organizational behavior: a multilevel analysis", *Administrative Science Quarterly*, Vol. 26 No. 4, pp. 501-524, doi: 10.2307/2392337.

Stephan, U., Zbierowski, P., Pérez-Luño, A., Wach, D., Wiklund, J., Alba Cabañas, M. and Zahid, M.M. (2022), "Act or wait-and-see? Adversity, agility, and entrepreneur wellbeing across countries during the Covid-19 pandemic", *Entrepreneurship Theory and Practice*, Vol. 47 No. 3, pp. 682-723, 10422587221104820, doi: 10.1177/10422587221104820.

Stone, M. (1974), "Cross-validatory choice and assessment of statistical predictions", *Journal of the Royal Statistical Society: Series B (Methodological)*, Vol. 36 No. 2, pp. 111-133, doi: 10.1111/j.2517-6161.1974.tb00994.x.

Suharto, E. (2009), *Poverty and Social Protection in Indonesia*, Alfabeta, Bandung.

Tippins, M.J. and Sohi, R.S. (2003), "IT competency and firm performance: is organizational learning a missing link?", *Strategic Management Journal*, Vol. 24 No. 8, pp. 745-761, doi: 10.1002/smj.337.

Tugade, M.M. and Fredrickson, B.L. (2004), "Resilient individuals use positive emotions to bounce back from negative emotional experiences", *Journal of Personality and Social Psychology*, Vol. 86 No. 2, pp. 320-333, doi: 10.1037/0022-3514.86.2.320.

Venkatraman, N. (1994), "IT-enabled business transformation: from automation to business cope redefinition", *Sloan Management Review*, Vol. 35 No. 2, pp. 73-78.

Ventura, E. and Satorra, A. (2015), "A multiple indicator model for panel data: an application to ICT area-level variation", *Telecommunications Policy*, Vol. 39 No. 10, pp. 830-847, doi: 10.1016/j.telpol.2015.07.002.

Williams, L.J., Gavin, M.B. and Hartman, N.S. (2004), "Structural equation modeling methods in strategy research: applications and issues", in Ketchen, D.J.Jr and Bergh, D.D. (Eds), *Research Methodology in Strategy and Management*, Elsevier, Oxford, Vol. 1, pp. 303-346.

Williams, T.A., Gruber, D.A., Sutcliffe, K.M., Shepherd, D.A. and Zhao, E.Y. (2017), "Organizational response to adversity: fusing crisis management and resilience research streams", *Academy of Management Annals*, Vol. 11 No. 2, pp. 733-769, doi: 10.5465/annals.2015.0134.

Zahra, S.A. (2021), "International entrepreneurship in the post Covid world", *Journal of World Business*, Vol. 56 No. 1, 101143, doi: 10.1016/j.jwb.2020.101143.

Further reading

Davidsson, P. and Gordon, S.R. (2012), "Panel studies of new venture creation: a methods-focused review and suggestions for future research", *Small Business Economics*, Vol. 39 No. 4, pp. 835-875, doi: 10.1007/s11187-011-9325-8.

(The Appendix follows overleaf)

Appendix

Table A1.
Items used to measured variables analyzed

Variable	Item
Impact of COVID-19:	
Effect of COVID-19 on nascent entrepreneurs' activity	– Continue working in person – Continue teleworking – Closed temporarily due to an administrative decision – Closed temporarily although I am authorized to continue activity – Closed permanently – Transferred it
Has the effect on access to financing been affected by the health crisis?	– Yes – No, we continue to receive the financing planned – Our financial resources have increased – We did not have any type of financing planned
Has the demand for your products/services been affected during lockdown?	– Increased considerably – Increased slightly – Remained constant – Significantly reduced – No demand because my business remains completely closed
ICTCs	
Technological media used in the new venture during the pandemic	– Video conferencing – Cloud file sharing platforms – Virtual internal network – Same technology as in the face-to-face situation – Others
Degree of digitalization in during the COVID-19 pandemic	– Yes, it has been decisive – No
The extent to which the crisis once over will	
Strategy response – Adaptation Affect your business plans	– Launch new products/services – Enter new markets – Work with new clients
Strategy response – Compensation Affect your business plans	– Hire new employees – Invest in infrastructure/technology/other investments
Strategy response – Disengagement Affect your business plans	– Reduce staff – Close or transfer the activity – Change our main activity

Source(s): Own elaboration based on Batista Canino *et al.* (2020)

Corresponding author
Marina Estrada-Cruz can be contacted at: mestrada@umh.es