‘All you need is... entrepreneurial attitudes’: a deeper look into the propensity to start a business during the COVID-19 through a gender comparison (GEM data)

Dafna Kariv*

Adelson School of Entrepreneurship,
Reichman University (IDC),
Herzliya, Israel
Email: dafna.kariv@post.idc.ac.il
*Corresponding author

Rico J. Baldegger

School of Management Fribourg (HEG-FR),
University of Applied Sciences and Arts Western
Switzerland (HES-SO), Chemin du Musée 4,
CH-1700 Fribourg, Switzerland
Email: rico.baldegger@hefr.ch

Gavriela Kashy-Rosenbaum

Multidisciplinary Department of Social Sciences,
Ashkelon Academic College,
Hashikma 236, Kfar-Hanagid, Israel
Email: kashyg@netvision.net.il

Abstract: The COVID-19 captured entrepreneurs by surprise, and shocked in the first months of the pandemic, especially women entrepreneurs; yet, the initial stages of the ‘shock’ that crises induce, are still underexplored in the entrepreneurial research, though critical for the further venture creation act. The genders’ perceptions of opportunity, fear of failure and motivations before and during the pandemic, are employed to predict propensity to start a business during this crisis. Results comparing the Global Entrepreneurship Monitor (GEM) datasets between 2019 and 2020 suggest that while pandemic has been found to affect women more severely than men, women’s perceived availability of opportunities during COVID-19 emerged more tightly related to financial motivations, as their main impetus to start a business. These findings reinforce the relevance of the theory of planned behaviour and bricolage to the contexts of gender and crises. Implications for research and practice are discussed.

Keywords: entrepreneurship; female entrepreneurship and pandemic; entrepreneurial motivation; crisis and shocks; new ventures under crises.

Reference to this paper should be made as follows: Kariv, D., Baldegger, R.J. and Kashy-Rosenbaum, G. (2022) ‘“All you need is... entrepreneurial attitudes”: a deeper look into the propensity to start a business during the COVID-19 through a gender comparison (GEM data)’, *World Review of Entrepreneurship, Management and Sustainable Development*, Vol. 18, Nos. 1/2, pp.195–226.

Biographical notes: Dafna Kariv is full-time faculty member, Head of the dual-degree Entrepreneurship-Business Administration and the Chair of the School's research Commission. She is also Affiliate Professor at HEC, Montreal, Canada. She is the author of six academic books, published with Routledge UK, NY and Edward Elgar, UK. She has published numerous papers in entrepreneurship in academic journals, with research teams from Canada, Europe and the USA. She is a recipient of several prized funds including the European Commission funds; she is involved in academic boards, and she is an Ambassador at GINSUM (German Israeli Network of Startups & Mittelstand).

Rico J. Baldegger is Dean and Professor of Entrepreneurship, Strategy and Innovation at the School of Management Fribourg (HEG-FR), Switzerland. His regular activities include keynotes and teaching in Europe, the USA, Singapore, and Australia. In addition, he is team leader for the Global Entrepreneurship Monitor Switzerland and responsible for the SIES, a survey concerning the internationalisation of SMEs. He has more than a hundred publications, including several books. His research focuses on the innovation process of entrepreneurs, the internationalisation process of start-ups and SMEs, new venture creation, and growth management. His broad professional experience in entrepreneurship and management includes the fields of leadership, human resources, IT, and branding. He has created several start-ups in Europe and the USA and was the founder and CEO of a management consultant company. Today, he is on the board of several companies, acting as a Business Angel and supporting the entrepreneurial ecosystem in Switzerland.

Gavriela Kashy-Rosenbaum is a senior lecturer, a full-time faculty member, and the head of the Education Section in the Multidisciplinary Department of Social Sciences, Ashkelon Academic College. She is a mentor at the research program for graduate students, at the School of Business Administration, the College of Management Academic Studies in Rishon Lezion, Israel. She has published papers in academic journals in various and multidisciplinary areas, such as in the Psychological field – trauma and post trauma; positive psychology, motivation, and emotions, Education field – the 21st Century Skills, learning; and in the Cyber field – Cyberbullying.

1 Introduction

Global crises, such as COVID-19, are thought to disrupt entrepreneurs' control of their businesses' regular management (Medvedeva et al., 2016; Panyavina et al., 2017), due to uncertainties in both an indefinite 'deadline' for the crisis and its potentially wide-ranging, destructive effects on their businesses (Elliott et al., 2002). Crises are unexpected, unpredictable events of large significance and severe consequences that can produce dramatic global changes (Lagadec, 2009; Topper and Lagadec, 2013; Winston, 2020), causing susceptible effects to systemic shocks in various groups (Brown et al., 2020; DesJardine et al., 2019; Kwong et al., 2019). Crises are classified in the entrepreneurship literature through different typologies, with measures such as essence (e.g., natural disaster, financial crisis, terrorism), predictability, scale, origin, evaluative concepts such as major or minor impact, etc. (Doern et al., 2019; Hannah et al., 2009). COVID-19 seems to fall into several of these classifications, i.e., health and social crisis, financial disruption, unpredictable, evaluated as a major disaster, spanning the entire

global economy (Goodell, 2020), encompassing all sectors and industries. Its gravity is deemed to have fundamentally disrupted the recognised business platforms, e.g., finance, customer behaviour, working structures, etc. (Baker et al., 2020; Howell et al., 2020). One of the responses to a disruptive crisis' effects is to launch a new business during the crisis (Davidsson and Gruenhagen, 2020; Maritz et al., 2020), because it provides a source of employment for those who have closed their businesses or lost their jobs due to the crisis, as well as opportunities to respond to new and emerging needs that have been raised by the crisis (Devece et al., 2016; Jafari-Sadeghi, 2020; Peris-Ortiz et al., 2014).

The full impact of COVID-19 on entrepreneurial launches is still unknown as we are in the midst of the crisis, and the actual launches will continue in the following years; yet, recent studies have already demonstrated findings on the already marked effects of the pandemic on entrepreneurial businesses, that may impede future entrepreneurs entering the entrepreneurial adventure; for example Salamzadeh and Dana (2021) through their exclusive review of existing research and in-depth interviews of co-founders of fifteen startups listed some current challenges startups encountered, e.g., in attracting financial support, handling human resources related challenges such as dismissals of the valuable experts, or managing the business while contracts with stakeholders for support are cancelled; overall the pandemic fallouts are found in businesses difficulties in generating resources and constructing business models to create complex systems that assist in adapting and co-evolving in disruptive situations (Pereira et al., 2021).

Nevertheless, it is critical to assess the entrepreneurial response to the pandemic through new launches during this unique crisis (Doern et al., 2019; Wenzel et al., 2020). As such, the antecedents of the actual act of launching a business can be employed to predict the opening of entrepreneurial businesses during COVID-19. Of the measures that predict the actual act of launching a business, entrepreneurial motivations, and perceived opportunities and hindrances are predominant and are considered robust. In research, entrepreneurial motivations have been found to be effective predictors of an individual starting a business in a specific context (Carsrud and Brännback, 2011; Krueger et al., 2000; Van Gelderen et al., 2015); perceptions of opportunities have been shown to trigger new business creation, by deploying the perceived available resources (Krueger et al., 2000; Peterman and Kennedy, 2003); and perceived hindrances, often reflected in a fear of failure (FoF) (Cacciotti and Hayton, 2015; Van Gelderen et al., 2015), are robust predictors of not launching a business, especially during crises, as the perception of a cascade of failures discourages the act of starting a business (Giotopoulos et al., 2017a, 2017b).

While pivotal to business launches in normal times, these antecedents seem to be even more impactful in predicting actual launches in the context of crises. This under-researched area therefore warrants a more thorough investigation, especially as research has shown that small and entrepreneurial businesses are at a disadvantage during and after crises: few open, and many of them close or go bankrupt (Demirgüç-Kunt et al., 2020). This vulnerability can be even more pronounced among women-led entrepreneurial businesses, which are depicted in the literature as smaller and less growth-oriented than those led by men (Arenius and Minniti, 2005; Brush et al., 2017; Nikou et al., 2019). Moreover, the outbreak of the Covid-19 represents a 'shock', which is echoed more pronouncedly among women, that typically are facing more business-related constraints than men, such as other vulnerable groups, e.g., immigrants, people of colour, among others (Davidsson and Gordon, 2016; Vorobeva and Dana, 2021).

The theory of planned behaviour (TPB) (Ajzen, 1991) and bricolage (Baker and Nelson, 2005) are applied in this study to provide a theoretical conceptualisation of entrepreneurial business launches during the COVID-19 pandemic. Drawing on the global databases of the Global Entrepreneurship Monitor (GEM) for 2019 and 2020, representing 32 countries and therefore covering a large geographical scope of entrepreneurial dynamics (e.g., Bosma et al., 2020), this article delves into women's and men's motivations to start a business, their perceptions of opportunities for starting a business, and FoF, as proxies for the act of starting a new business, through a comparative assessment of pandemic (2020) and pre-pandemic (2019) years.

This paper contributes to the literature in four ways. First, it assesses new launches during the COVID-19 pandemic, an unexpected and unique ongoing crisis that is typified by its vast impact on multiple areas. Existing assessments of the opening of new businesses during crises are unable to capture the whole picture, as some are in still in progress, and will continue as such as long as the crisis persists. This paper's contribution is in employing robust antecedents that capture the fullness of business launches from the individual's perspective. In so doing, the paper also validates the role of the included antecedents in advancing a more realistic query into new business launches during crises. Past research has tended to draw on the effects of crises on existing businesses (e.g., closures, problems with liquidity, bankruptcy) to evaluate new launches (Jones and Murtola, 2012; Runyan, 2006); although both reflect entrepreneurial dynamics during crises, starting a business in times of crisis entails different resources than the reopening or recovery of an existing one. The second contribution is in being fortunate to generate data in the initial stages of the crisis, the shock phase; then when the crisis effects endure, individuals get used and the shocking response decreases. Studies show that entrepreneurs hold attitudes that promote a more efficient respond more to shocks that result from crises, and are depicted as flexible, adaptable and innovators, and these yield an improved management of shocks (Smallbone et al., 2012; Cowling et al., 2020), which can be echoed in the vibrant act of starting a business. The third contribution lays in establishing our key assumptions through the theoretical conceptualisation of the TPB and bricolage, with their complementary concepts regarding entrepreneurial launches in times of crisis. As such, this contribution goes beyond the exclusive value of each model in understanding the entrepreneurial act of starting a business; rather, these two models are used together as a conceptual umbrella to examine business launches in times of crisis. To date, entrepreneurial research has made use of conceptual models, such as crisis management and resilience, often taken from cases of large businesses (e.g., Booth, 2015; Chong, 2004). The TPB and bricolage models are more pertinent to entrepreneurial businesses and more apt to conceptualise the results of our study, and provide a more fine-grained understanding of the differences in personal propensities (i.e., motivations, perceived opportunities and FoF) to launch a new business in times of crisis. The fourth is in delving into the gender differences in potential business launches, beyond normal times, by exploring the genders' perceptions of the crisis as a platform to start or avoid starting a new business. Our findings could provide fertile ground for implications in research and practice. Finally, due to its global and large coverage of countries, this paper will be informative and useful to a large scope of entrepreneurs worldwide.

1.1 Crises and entrepreneurship

History is replete with examples of successful businesses that were created during, or immediately after global crises, e.g., Dropbox, Uber, Airbnb, WhatsApp, Groupon, and Pinterest (OECD, 2020b); and some of the most successful entrepreneurs have attributed their success to the crises themselves (Elkins, 2017; Montag, 2018). Thus, crises may present opportunities, stimulated by the adversity (Apedo-Amah et al., 2020; Deb et al., 2019), that allow entrepreneurs to recover from the hardships caused by the crisis (Giones et al., 2020). In fact, over the last decade, interest in crises has substantially increased in entrepreneurship research; the outbreak of the COVID-19 pandemic has introduced an opportunity for a fresh look at this topic (e.g., Bullough et al., 2014; Davidsson and Gordon, 2016; Williams and Vorley, 2015). COVID-19 is a unique crisis that has introduced key changes in the global economy and the entrepreneurial realm, touching upon every part of the global economy and affecting a multitude of businesses across countries through their closure, and inability to find new opportunities due to lockdowns. According to the Congressional Research Service[1] (2021), entrepreneurs are more likely to go out of business and may take years to recover, if at all. Moreover, the data generation enabled 'catching' the respondents in a unique and rare momentum, when the crisis fallouts are still uncertain, confusion is high and individuals face the phase of shock; drawing on Corley and Gioia (2011) the originality and utility of this research are introduced in attempting to both eliciting new insights, refuting existing ones, on the drivers stimulating new venture creation among women in crisis times, especially when the disruptive occurrences are still shocking. Deciphering the factors that trigger women and men to start a business under the unique crisis events, is value-adding as these factors may differ from the enablers that are disclosed in regular times, hence promoting to the validity and reliability of theory with this regard; both the Theory of Planed Behaviour and the Bricolage, that are employed as conceptual premises to this study do not address crisis times, and our results can advance their relevance to such times. Yet, theory should be implicated and useful, thus this study endeavours to fortify utility by advancing the existing theory of crisis performance within the entrepreneurial realm a step forward and disseminate the new insights. By capturing both a large scope of attitudes, that can potentially impede (i.e., FoF) or stimulate (i.e., opportunity perceptions, motivation) the act of starting a business in crisis times along with the global range introduced by the GEM data, that resonates the included, entrepreneurial attitudes among individuals across the globe, the conclusions and implications of our study have may redress the knowledge gained on women's propensity to start businesses, and push to valid practical implications relevant to crisis events.

1.1.1 Entrepreneurs under crises

The main pursuit of research into crises is twofold: to understand entrepreneurs' actions in the face of the crisis (Simón-Moya et al., 2016), and to delineate entrepreneurs' strategies for recovering from the crisis (e.g., Davidsson and Gordon, 2016; Doern, 2016; Runyan, 2006; Smallbone et al., 2012). These studies draw on two main theoretical perspectives: 'crisis management', which refers to the role of the ecosystem in mitigating the impact of crises and bringing the disrupted system back into alignment (Caponigro, 2000; Spillan and Hough, 2003), and 'resilience', representing the business' ability to bounce back (Linnenluecke, 2017; Shin et al., 2012; Williams et al., 2017). The

implication of both perspectives for entrepreneurship, i.e., crisis management (e.g., Davidsson and Gordon, 2016; Doern, 2016; Runyan, 2006; Smallbone et al., 2012) and resilience (e.g., Bullough et al., 2014; Martinelli et al., 2018; Williams and Vorley, 2015; Williams and Shepherd, 2016), lies in adjusting the business' processes to achieve recovery by deploying all available resources (Hobfoll, 2001; Williams et al., 2017). This implication seems to be consistent with the entrepreneurial bricolage concept of "making do by applying combinations of the resources at hand to new problems and opportunities" (Baker and Nelson, 2005, p.333). Yet, despite its relevance to existing businesses' recovery (Tsilika et al., 2020), research has barely explored the quest of starting a new business in times of crisis through a bricolage framework; rather, it has mainly looked at the recovery of damaged entrepreneurial businesses, despite the fact that new launches are crucial to convalescing from the effects of a crisis (e.g., Smallbone et al., 2012; Williams and Vorley, 2015). Previous studies have shown that different forms of bricolage are required in different contexts, based on the variety and availability of resources in the environment (de Bruin et al., 2017; Kwong et al., 2017; Tasavori et al., 2018); the common thread in all of these forms is the deployment of resources (Stinchfield et al., 2013), and improving the efficiency of exploiting and using existing, available resources (Garud and Karnøe, 2003; Kariv and Coleman, 2015; Stinchfield et al., 2013) to create a new basis of mutual support in the start-up community, access to capital and the fostering of financial capabilities (Williams et al., 2017).

In fact, a reduction in the number of new business, even in a single year, has sizable, long-term effects on the lower number of new businesses across countries, in addition to other social and economic outcomes (OECD, 2020a, 2020b). Thus, the opening of new ventures during a crisis is indispensable for economic recovery. Since starting a new business is contingent upon the environmental conditions (Arrighetti et al., 2016; Turker and Selcuk, 2009; Virick et al., 2015), and crises entail restrictions in available resources, the individual's capacity to 'see' opportunities, especially in the first stages of the crisis effects, the shock (Bowen et al., 2020) and exploit them and start a business deteriorates (Klapper and Love, 2011; Paulson and Townsend, 2004). Moreover, the observable negative effects of crises on entrepreneurial businesses, such as business failures, resource losses, difficulties accessing funding, liquidity complications, etc. (Bartik et al., 2020; Bosio et al., 2020), and the businesses' consequent responses, e.g., closure, temporarily 'pausing' activities, layoffs, among others (Balla-Elliott et al., 2020; Hallward-Driemeier and Rijkers, 2013), have a substantial negative effect on entrepreneurial motivation (Angulo-Guerrero et al., 2017; Segal et al., 2005) and opportunity exploitation under turbulent conditions (Bullough et al., 2014); while at the same time enhancing perceptions associated with hindrances to starting a business, and perceiving the environment as dangerous (King et al., 2003; Kollmann et al., 2017). Conroy (2001) defined FoF as an appraisal of threats leading to the aversive consequence of failing; in the entrepreneurial literature, FoF is deemed to hinder entrepreneurial behaviour (Bosma et al., 2007). According to the TPB, individuals are often affected by FoF and adopt a behaviour of avoidance if success is not guaranteed (Ajzen, 1991). Hence, FoF is in essence a doubt that can hinder or delay a behaviour, and it is quite damaging to entrepreneurial behaviour (Gartner and Liao, 2012; Lipshitz and Strauss, 1997). When they envisage inhibitors and develop FoF, potential and early-stage entrepreneurs will not start a business (Ekore and Okekeocha, 2012; Kong et al., 2020; Wennberg et al., 2013).

Gender perspective. Changes in these essential measures may be more pronounced among women. Research continually shows that in normal times, the gender gap in entrepreneurial motivation and perceptions related to starting a business, including women's perceived gender-specific barriers (Verheul et al., 2012), put women at a disadvantage (Ahl, 2006; Mueller and Dato-on, 2013; Schlaegel and Koenig, 2014). Crises represent stressors with negative effects on the workforce, and more so on women than on men (Giorgi et al., 2015; Giotopoulos et al., 2017a, 2017b) because the former tend to be more negatively affected in terms of physical and mental health than the latter (Daly et al., 2020; Drydakis, 2015; Kuhn et al., 2021). These effects are further reflected in gender differences in entrepreneurial intentions, perceptions and attitudes (Kariv et al., forthcoming; Zampetakis et al., 2017). Moreover, in times of crisis, women are more likely to engage in low-quality entrepreneurial endeavours compared to men, due to limited income choices (Arenius and Minniti, 2005; Paul and Sarma, 2013), and difficulties in accessing funding (Cowling et al., 2020; Paul and Sarma, 2013). As a result, while overall, the actual rate of business creation during crises declines (Klapper and Love, 2011; Paulson and Townsend, 2004), this drop is more pronounced among women entrepreneurs. World statistics show that new businesses are more likely to be started by men, although it should be noted that the gender gap has been narrowing in recent years (Elam et al., 2019). The COVID-19 pandemic seems to be having an amplified impact on women's readiness to start new businesses (Fairlie, 2020; Naudé, 2020).

The TPB (Ajzen, 1991) is used by researchers to decipher intentions (e.g., Kautonen et al., 2015; Krueger et al., 2000); it is also often used as a framework for predicting entrepreneurial motivation (Haus et al., 2013; Maes et al., 2014; Schlaegel and Koenig, 2014). Along with bricolage, the TPB is employed in this article as a conceptual skeleton to probe the role of COVID-19 in changes in the antecedents of a business' launch. The TPB (Ajzen, 1991) is determined by three motivational constructs: (a) attitude toward the action, relevant to this study in reflecting individuals' positive or negative considerations of starting a business; (b) perceived behavioural control, entailing the quantity of perceived hindrances to starting a business, hence relevant to this study's purposes; and (c) subjective norm, indicating the degree of perceived social expectations of significant others; this construct will not be addressed in this article. Findings emanating from the TPB framework have demonstrated gender differences in entrepreneurial motivations, associated with women's perceiving greater hindrances than men to starting a new business (Digan et al., 2019; Haus et al., 2013; Maes et al., 2014). This has been reinforced by another group of studies that revealed that women have a higher degree of FoF than men (Cacciotti and Hayton, 2015; Morgan and Sisak, 2016; Tsai et al., 2016), possibly due to their perception of hindrances; this type of fear intensifies in times of crisis.

Bricolage (Baker and Nelson, 2005) adds to conceptually enfolding the prediction of launches during crises, by women and men, because they are forced to create new combinations and make new uses of the available resources, making this theory most relevant to disruptive times. The TPB (Ajzen, 1991) seems to complement this effort by delving into the antecedents of the act of launching a business, through identification of the motivations to start a business, which are contingent, at least in part, on the environment's availabilities; attitude toward the behaviour, which seems to be associated with interpreting the existing resources as opportunities, thus reflecting individuals'

positive or negative consideration to start a business; and perceived behavioural control, which echoes the perceived hindrances to starting a business, and can be represented in the FoF.

1.2 Motivations to start a business during a crisis

Research deriving from the TPB stresses that "Intentions are assumed to capture the motivational factors that influence a behavior; they are indications of how hard people are willing to try, of how much of an effort they are planning to exert, in order to perform the behavior" (Ajzen, 1991, p.181); accordingly, motivations have a significant impact on the subsequent "… target behavior of starting a business" (Krueger, 1993, p.6); the motivation stems from an individual's interpretation of the available resources as opportunities or hindrances, which can be either deployed, or risked, for the pursuit of launching a business (Carsrud et al., 2017). COVID-19 has imposed unique restrictions, including lockdowns, social isolation, restrictions on travelling, working remotely, global shifts to a virtual space, and increased digitalisation, along with a decrease in personal contact (e.g., Fairlie, 2020; Liguori and Winkler, 2020); thus, the perceptions of available resources as opportunities and hindrances and the motivations to start a business are expected to change (Locke and Schattke, 2019; Nikou et al., 2019; Shahriar, 2018; Zampetakis et al., 2017).

The desire to start a business arises from various types of motivations, recapped in research through two of the most widespread taxonomies as (A) intrinsic/extrinsic motivations – intrinsic motivations involve attaining personal achievements and fulfilling internal desires, and can be manifested in starting a business to make a difference in the world; to follow a vision, or a family tradition, etc.; extrinsic motivations embody the desire for tangible and financial gains (e.g., Benabou and Tirole, 2003; Carsrud and Brännback, 2011; Carsrud et al., 2017; Cooper and Jayatilaka, 2006). This categorisation has produced relatively few publications in the contexts of crises and gender; of the existing publications, one study found that in times of crisis, intrinsic motivations outweigh extrinsic ones, the latter involving mainly wealth-seeking motives among highly educated individuals (Giotopoulos et al., 2017a, 2017b), and are mostly confined to high-income economies (Fernández-Serrano and Romero, 2013; Rani and Desiana, 2019). Research on intrinsic/extrinsic motivations in relation to crises, and the gender perspective, is scarce and warrants a meticulous investigation; (B) necessity/opportunity motivations[2] reflecting the concept of being pushed or pulled into entrepreneurship (Angulo-Guerrero et al., 2017; Block and Wagner, 2010; Hechavarria and Reynolds, 2009; Williams and Williams, 2014), and relevant to crisis conditions. The act of starting a business can stem from either: (I) reasons of necessity associated with having no other choice (Hilson et al., 2018), a need to escape unemployment, a lack of viable financial alternatives, or other forms of hardship (Dawson and Henley, 2012; Van der Zwan et al., 2016); these are typical to external conditions that introduce lower availability of resources, and are therefore relevant to crisis situations (Jafari-Sadeghi, 2020; Mason and Hruskova, 2021). Research has posited necessity as the main driver to starting a business under disruptive conditions (Hechavarria and Reynolds, 2009; Wennekers et al., 2005), whereas necessity-driven entrepreneurial businesses have been depicted as having lower growth prospects during turbulent times (Devece et al., 2016); or (II) reasons of opportunity, exhibited in exploiting or developing new opportunities (Brünjes and Diez, 2013; Hechavarria and Reynolds, 2009; Van Gelderen et al., 2005), and comprising

motivations such as contributing to the world, independence, autonomy, etc. (Segal et al., 2005; Shane et al., 1991, 2003). Research has shown that the likelihood of being an entrepreneur in times of crisis is greater for opportunity vs. necessity entrepreneurs (Jafari-Sadeghi, 2020), and this is reinforced by Zahra's (2021) findings on the extended processes involving business digitalisation, innovation, and remote work, situations that necessitate responding to new needs. Other, contrasting findings suggest that tumultuous episodes weaken the entrepreneurial intent to start a business, and that this is more pronounced among opportunity compared to necessity entrepreneurs (Arrighetti et al., 2016). Both types of motivation, when arising in times of crisis, can be attributed to the unusually large business void due to the typically larger number of business closures during crises, which calls for new entrants to fill that void; hence, when materialised into an actual launch, both types of motivations enable entrepreneurs to benefit from opening new windows of opportunity (Jones and Murtola, 2012).

This study addresses the scarcity of observations on business launches during the COVID-19 pandemic, as the crisis is ongoing and we do not yet have a complete picture; and the deficient research in this area tackling gender and crises, by capturing the key changes in the genders' antecedents of the act of starting a business, between the year of the COVID-19 outbreak (2020) and the pre-pandemic year (2019).

2 Hypotheses

H1a. FoF to start a business[3] will be higher during the COVID-19 pandemic year than during the pre-pandemic year.

H1b. Perceptions of opportunities to start a business[4] will be fewer during the COVID-19 pandemic year than during the pre-pandemic year.

H2. There will be differences in entrepreneurial motivations (e.g., making a difference in the world, building great wealth, continuing the family tradition, and earning a living because jobs are scarce[5]) between the year of the COVID-19 pandemic and the pre-pandemic year.

H3a. There will be gender differences in FoF during the COVID-19 pandemic year compared to the pre-pandemic year.

H3b. There will be gender differences in perceptions of opportunities during the COVID-19 pandemic year compared to the pre-pandemic year.

H3c. There will be gender differences in the general approach to opportunity exploitation during the COVID-19 pandemic year compared to the pre-pandemic year.

H3d. There will be gender differences in entrepreneurial motivations during the COVID-19 pandemic year compared to the pre-pandemic year.

H4. Relationships between the separate motivation constructs and FoF and perceptions of opportunity will strengthen during the pandemic, among both women and men.

3 Method

3.1 Data, participants and process

We used the GEM[6] 2019 and 2020[7] database from 32[8] (out of 37) countries selected for the current study to represent countries with two levels of total income, based on the Global Competitiveness Report (Schwab and Zahidi, 2020).[9] GEM provides a comprehensive view of entrepreneurship across the globe by measuring the attitudes of a population, and the activities and characteristics of individuals involved in various phases and types of entrepreneurial activity. One of the key purposes of GEM is to provide reliable data on entrepreneurship that will be useful over time in making meaningful comparisons, both internally and between economies. For this reason, all participating economies make use of standard research instruments. The GEM data are gathered annually and are derived from the following two main sources: the National Experts Survey (NES) which provides insights into the entrepreneurial start-up environment of the national ecosystem in each economy, and the Adult Population Survey (APS). Each participating economy conducts a survey of a random representative sample of at least 2000 adults (aged 18 years and older). The surveys are conducted at the same time of year (generally between April and June), using a standardised questionnaire developed by the GEM consortium. The raw data are sent directly to the GEM data team for inspection and uniform statistical calculations before being made available to the participating economies.

The sample data for this study were extracted from the results of the APS Global National Level Data from 2019 and 2020. They represent the percentage of respondents in each country's labour force (aged 18 to 64 years) who responded to the questions addressed to them in the affirmative.

4 Measures

4.1 Motivations to start a business

Based on the GEM (2020) operationalisation, the motivation to start a business is gauged by four constructs: building great wealth (BGW); lack of suitable employment alternatives and need to earn a living (EAL); contributing to making a difference in the world (MAD); and continuing the family tradition (FT). In this study, these four constructs were considered to represent the conceptual categorisation of motivations as follows:

Extrinsic – BGW and EAL, and intrinsic – MAD and FT; necessity – EAL, and opportunity – BGW, MAD and FT.

Perceived opportunity to start a business was assessed by the following statement: "*Good conditions to start a business in the next 6 months in my area*".

FoF was considered in this study to represent the perceived hindrances to starting a business; it was measured by the following statement: "*Fear of failure would prevent me from starting a business*". People who agreed with this statement were those experiencing more FoF, hence deemed as perceiving more hindrances to starting a business.

The combined index of opportunity exploitation was comprised of two measures: FoF and perception of opportunities, with a reversal scale for the former. In the scale reversal used to construct the index, a high score for opportunity exploitation represented a positive perception of the situation, i.e., better perception of opportunities and lower FoF. Examination of the correlations between variables for each of the scales, separately for 2019 and 2020, showed no significant correlation between the variables in 2019 (r = .07, p = .323), and a negative correlation between the variables in 2020 (r = –.28, p = .047). This indicated that during the COVID-19 pandemic, there was a decline in perceptions of opportunities to start a business which was significantly related to an increase in FoF.

Period of time. The study variables were measured in two phases: the first measurement was performed in 2019, before the outbreak of COVID-19, and the second measurement was performed in 2020, in the midst of the COVID-19 pandemic.

The description of all variables is presented in Table 1.

5 Data analysis

To test H1a and H1b on the FoF in starting a business and perceptions of opportunities to start a business in the pre-pandemic compared to the pandemic period, a two-way repeated measures analysis of variance (ANOVA) (2 x 2) with two within-subject effects was conducted. To investigate H2 on the respondents' motivations to start a business in the two periods, a two-way repeated measure ANOVA (2 x 4) with two within-subject effects was employed, using the four constructs of motivation. H3a, H3b and H3c on gender differences in FoF and perceptions of opportunity compared by time period were assessed by three separate two-way repeated measures ANOVAs (2 x 2) of gender x time (within-subject effects), one for the percentage of the combined index representing opportunity exploitation, one for FoF, and one for perceptions of opportunity. H3d on gender differences in entrepreneurial motivations between the two time periods was evaluated by four separate two-way repeated measures ANOVAs (2 x 2) of gender x time (within-subject effects), with the percentage of respondents expressing each of the four constructs of motivation. To test H4, the relationships between the motivation constructs and FoF and perceptions of opportunity, separately, in the two periods, among women and men, Pearson correlations between the variables were calculated, for each year separately, as well as for women and men separately in each year. To examine the significance of the differences in the correlations' strength between 2019 and 2020, Fisher Z scores were calculated. Fisher Z is used to find differences between correlations, by transforming the sampling distribution of Pearson's correlation coefficient to a normal distribution, so that the significance of the differences can be examined using the Z scores.

6 Results

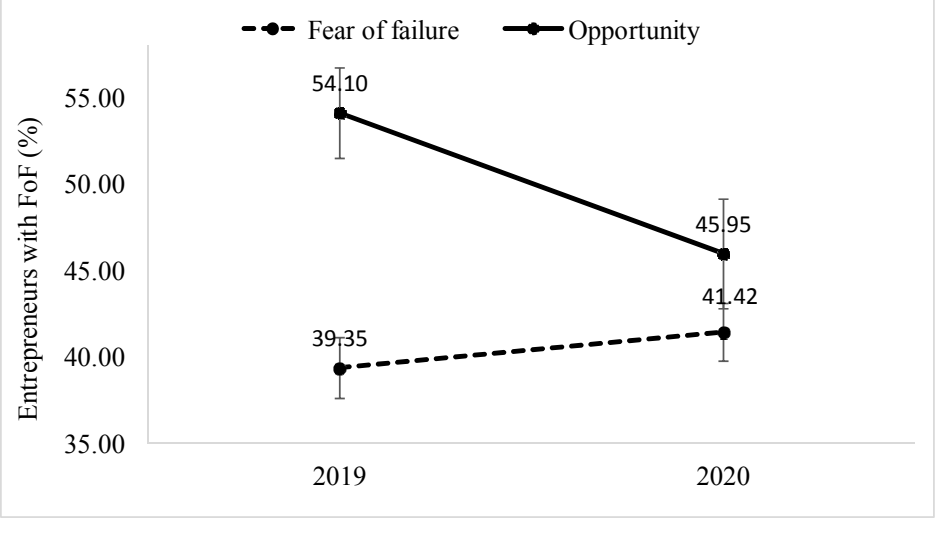
6.1 The whole sample

FoF and perceptions of opportunity. Consistent with the H1a and H1b study hypotheses ANOVA findings revealed a significant main effect of time, $F(1, 31) = 18.83$, $p < .001$, $\eta^2 = .378$. The combined index of opportunity exploitation values decreased significantly

in the COVID-19 year (mean (M) = 52.27%, standard error (SE) = 1.75, 95% confidence interval (CI) = 48.69% to 55.84%) compared to the pre-pandemic year (M = 57.37%, SE = 1.50, 95% CI = 54.31% to 60.43%). This means that on average, a lower percentage (5.11%; SE = 1.18, 95% CI = 2.71% to 7.51%) of individuals saw opportunity exploitation as less favourable during the pandemic compared to the pre-pandemic year.

The interaction of the two scales (FoF and perception of opportunities) with time revealed an overall different pattern of changes in FoF in starting a business, and of perceptions of opportunities to start a business, $F(1, 31) = 4.32$, $p = .046$, $\eta^2 = .122$ (Figure 1). To check for the source of the variation in the significant interaction, a simple main effect analysis and t-test pair comparisons between 2019 and 2020 follow-up analyses were performed for each of the two scales separately. In accordance with the H1a study hypothesis the t-test pair results showed a significant increase from 2019 to 2020 in FoF in the sample of respondents perceiving opportunities to start a business, $t(31) = 1.62$, $p = .05$, and in line with the H1b study hypothesis a significant decrease in perceptions of opportunities to start a business, $t(31) = 3.50$, $p = .001$. These findings imply that on average, 2.1% (SE = 1.28, 95% CI = 4.67% to 0.54%) more respondents stated that FoF would prevent them from starting a business, even while perceiving opportunities to start a business, in the pandemic year compared to the pre-pandemic year. An average 8.14% (SE = 2.33, 95% CI = 3.40% to 12.89%) less respondents perceived the pandemic year as providing opportunities to start a business compared to the previous year.

Figure 1 Percentage of entrepreneurs with fear of failure (FoF) in starting a business during COVID-19 (2020) compared to the pre-pandemic year (2019)



Entrepreneurial motivations. Contrary to the H2 study hypothesis ANOVA findings showed no significant main effect of time, $F(1, 31) = 1.85$, $p = .184$, $\eta^2 = .056$, indicating that there were no significant changes in entrepreneurs' overall motivations to start a business between the pre-pandemic and pandemic years. In addition, the motivation main effect was significant, $F(3, 93) = 30.97$, $p < .001$, $\eta^2 = .500$, indicating that there were

significant differences among the motivations; a review of the means and Bonferroni analyses, aimed at examining the source of the differences between the motivations, gave the following order of motivations to start a business: EAL > BGW > MAD > FT, with no significant difference between the latter two. The averages are listed in Table 1.

Table 1 Means, standard errors (SE), and confidence intervals (CI) of early-stage entrepreneurs' motivations to start a business

Motivations	*Mean*	*SE*	*95% CI*	
			Lower bound	*Upper bound*
MAD	45.42	2.55	40.22	50.62
BGW	56.26	3.09	49.95	62.57
FT	30.11	2.31	25.40	34.83
EAL	61.02	3.24	54.42	67.62

Notes: BGW, building great wealth; EAL, need to earn a living; MAD, making a difference; FT, continuing the family tradition.

Table 2 Means, standard errors of the mean (SEM), Pearson correlations (*r*), and confidence intervals (CI) of early-stage entrepreneurs' motivations between the years 2019 and 2020

Motivations		*Mean*	*SEM*	*r*	*Mean difference*	*SEM*	*95% CI*	
							Lower	*Upper*
MAD	2019	46.04	2.76	.69***	–1.23	2.18	–3.21	5.68
	2020	44.81	2.79					
BGW	2019	54.02	3.43	.76***	4.49	2.29	0.19	9.17
	2020	58.50	3.17					
FT	2019	31.03	2.93	.56***	–1.83	2.52	–3.31	6.97
	2020	29.20	2.30					
EAL	2019	58.12	3.61	.75***	5.81	2.44	0.82	10.78
	2020	63.93	3.29					

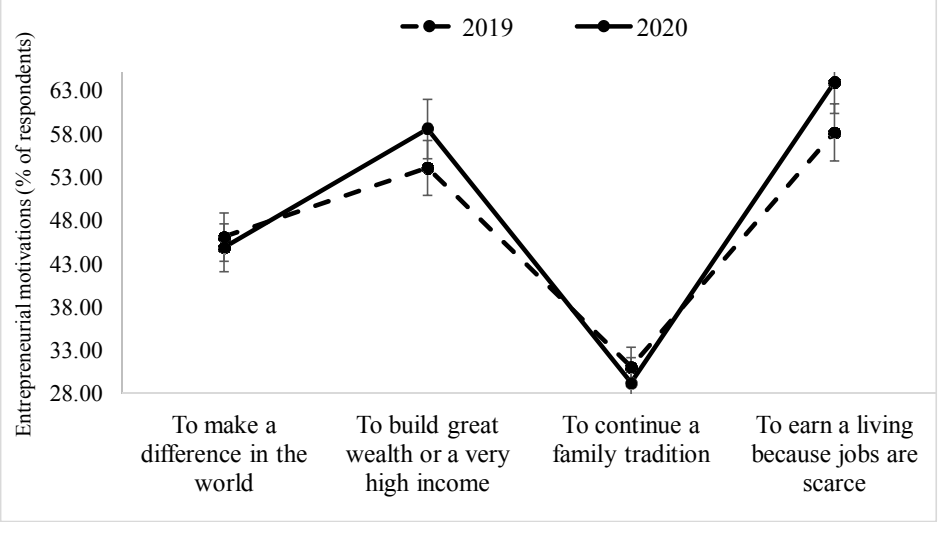
Notes: BGW, building great wealth; EAL, need to earn a living; MAD, making a difference; FT, continuing the family tradition.

***$p \leq .001$.

The interactions of the four motivation constructs with time revealed differences in the pattern of changes between 2019 and 2020 for the different types of entrepreneurial motivations, $F(3, 93) = 3.00$, $p = .035$, $\eta^2 = .088$ (Figure 2). To check for the source of the variation in the significant interaction, a simple main effect analysis and t-test pair comparisons between 2019 and 2020 follow-up analyses were performed for each of the four constructs separately. In line with H2 study hypothesis, the t-test pair results showed a significant increase from 2019 to 2020 in two constructs: BGW, $t(31) = 1.96$, $p = .030$; and EAL, $t(31) = 2.38$, $p = .012$. The findings indicated that an average 4.49% (SE = 2.25, 95% CI = 0.19% to 9.17%) more respondents stated BGW as a motivation to start a business in the COVID-19 year compared to the previous year; and an average 5.81% (SE = 2.44, 95% CI = 0.83% to 10.79%) more respondents were motivated by EAL during the pandemic vs. pre-pandemic year. But in contrary to the hypothesis, no

significant changes between the two years emerged for the constructs MAD, $t(31) = 0.57$, $p = .576$, or FT, $t(31) = 0.73$, $p = .474$, as demonstrated in Table 2 and Figure 2. Furthermore, a review of the correlations obtained for the entrepreneurial motivations between the years 2019 and 2020 (Table 2) indicated strong correlations for the motivations MAD, BGW and EAL, and a relatively weaker correlation for FT.

Figure 2 Percentage of respondents claiming each of the four entrepreneurial motivation constructs during COVID-19 (2020) compared to the pre-pandemic year (2019)



6.2 Gender differences

Combined index of opportunity exploitation. The results revealed a significant main effect of gender, $F(1, 31) = 39.69$, $p < .001$, $\eta^2 = .561$. Significantly more male than female entrepreneurs (4.07%, SE = 0.65, 95% CI = 2.75% to 5.39%) expressed higher levels of perceptions of opportunity exploitation (males: M = 55.62%, SE = 1.54, 95% CI = 52.46% to 58.78%; females: M = 51.55%, SE = 1.80, 95% CI = 47.88% to 55.22%).

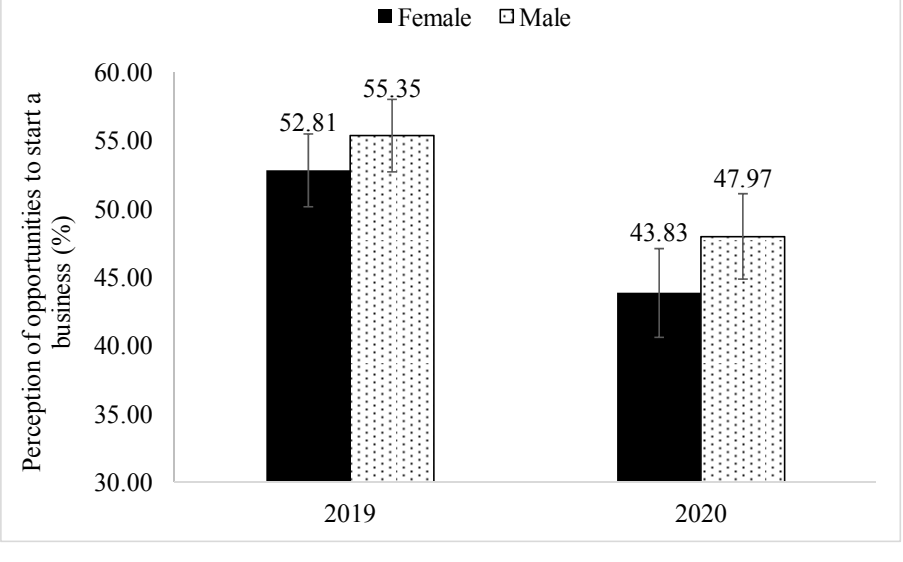
Furthermore, in accordance with the previous findings of H1c hypothesis, a significant main effect of time emerged, $F(1, 31) = 17.76$, $p = .009$, $\eta^2 = .364$, while in the contrary to H3c study hypothesis, the interaction between gender and time was not significant, $F(1, 31) = 2.14$, $p = .154$, $\eta^2 = .064$. This indicates that gender differences in the perceptions of opportunity exploitation did not change during COVID-19. The perceptions of opportunity exploitation decreased significantly among both genders in the pandemic year (M = 50.73%, SE = 2.04, 95% CI = 46.58.42% to 54.88%) compared to the pre-pandemic year (M = 56.45%, SE = 1.49, 95% CI = 53.42% to 59.48%). There was a decrease of 7.72% (SE = 1.36, 95% CI = 2.95% to 8.49%) in respondents expressing their perceptions of opportunity exploitation during COVID-19 compared to the previous year.

FoF. The results revealed a significant main effect of gender, $F(1, 31) = 38.60$, $p < .001$, $\eta^2 = .555$. Significantly more female than male entrepreneurs (4.80%, SE = 0.77, 95% CI = 3.23% to 6.38%) expressed higher levels of FoF (females:

M = 46.21%, SE = 1.74, 95% CI = 42.67% to 49.75%; males: M = 41.41%, SE = 1.44, 95% CI = 38.48% to 44.35%), The findings revealed a significant main effect of time, $F(1, 31) = 7.85$, $p = .009$, $\eta^2 = .202$, but in contrary with the H3a study hypothesis, the interaction between gender and time was not significant, $F(1, 31) = 0.02$, $p = .879$, $\eta^2 = .001$, indicating that gender differences in FoF did not change during the pandemic relative to the previous year. These findings suggest that the differences between genders in FoF, were regardless of COVID-19. The FoF among both genders increased significantly in the pandemic year (M = 45.44%, SE = 1.69, 95% CI = 42.01% to 48.88%) compared to the pre-pandemic year (M = 42.19%, SE = 1.62, 95% CI = 38.89.31% to 45.49%). There was a 3.26% increase (SE = 1.16, 95% CI = 0.89% to 5.63%) in the number of respondents expressing FoF in the pandemic year compared to the previous year.

Perceived opportunity. There was a significant main effect of gender, $F(1, 31) = 15.68$, $p < .001$, $\eta^2 = .336$. Women perceived significantly less opportunities to start a business (M = 48.32%, SE = 2.74, 95% CI = 42.73% to 53.90%) than men (M = 51.66%, SE = 2.64, 95% CI = 46.27% to 57.05%), during both time periods. A higher percentage of men (3.34%, SE = 0.84; 95% CI = 1.62% to 5.06%) than women perceived opportunities for starting a new business. A significant main effect of time was found, $F(1, 31) = 12.49$, $p = .001$, $\eta^2 = .287$. The perception of opportunities to start a business decreased significantly during COVID-19 (M = 45.90%, SE = 3.16, 95% CI = 39.46% to 52.34%) compared to the pre-pandemic year (M = 54.08%, SE = 2.61, 95% CI = 48.75% to 59.41%); a higher percentage (8.18%, SE = 2.31; 95% CI = 3.64% to 12.90%) of entrepreneurs perceived less opportunities during the COVID-19 year relative to the previous year.

Figure 3 Perceptions of opportunities to start a business during (2020) and before (2019) COVID-19, by gender



In line with hypothesis H3b the interaction between gender and time was significant, $F(1, 31) = 3.38$, $p = .038$, $\eta^2 = .098$ (Figure 3). To check for the source of the variation in the significant interaction, a simple main effect analysis and t-test pair comparisons between female and male follow-up analyses were performed for 2019 and 2020, separately. The t-test pair results showed significant differences between female and male respondents in perceptions of opportunity in 2019, $t(31) = 2.51$, $p = .017$, and in 2020, $t(31) = 4.68$, $p < .001$; an average of 2.54% (SE = 1.01, 95% CI = -0.48% to 4.60%) more men than women stated that they perceived opportunities to start a business in 2019. In 2020, despite the decline among both gender groups in the perceptions of opportunity relative to 2019, the gender difference increased significantly to 4.14% (SE = 0.89, 95% CI = 2.38% to 5.95%) more men than women.

6.3 Motivations and gender differences

MAD. There was a significant main effect of gender, $F(1, 31) = 41.43$, $p < .001$, $\eta^2 = .572$, with men expressing significantly higher levels of the motivation MAD (M = 7.16%, SE = 1.00, 95% CI = 5.12% to 9.20%) than women (M = 5.74%, SE = 0.87, 95% CI = 3.96% to 7.53%), for both time periods; an average 1.41% of men (SE = 0.22, 95% CI = 0.97% to 1.86%) expressed higher levels of this construct than women. Contrary to the H3d study hypothesis the interaction between gender and time was not significant, $F(1, 31) = 0.37$, $p = .548$, $\eta^2 = .012$; gender differences did not seem to change between the year of COVID-19 and the previous year.

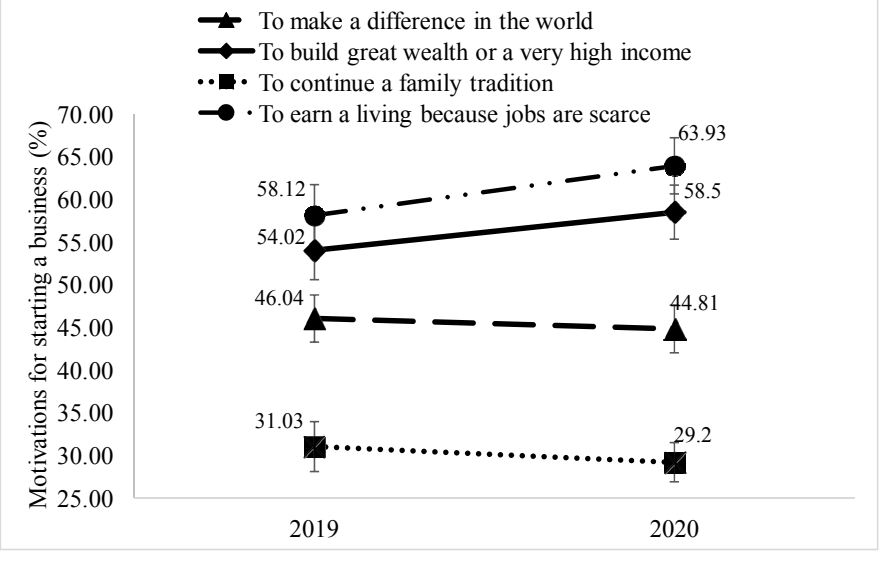
BGW. There was a significant main effect of gender, $F(1, 31) = 102.04$, $p < .001$, $\eta^2 = .767$; men stated significantly higher levels of motivation related to BGW (M = 8.74%, SE = 0.86, 95% CI = 7.00% to 10.49%) than women (M = 5.88%, SE = 0.74, 95% CI = 4.38% to 7.39%), regardless of the pandemic; an average 2.86% of men (SE = 0.28, 95% CI = 2.29% to 3.44%) expressed higher levels of this motivation than women. The interaction between gender and time was not significant, $F(1, 31) = 0.19$, $p = .670$, $\eta^2 = .006$, indicating that gender differences did not change between the two time periods.

FT. There was a significant main effect of gender, $F(1, 31) = 50.83$, $p < .001$, $\eta^2 = .621$; men ranked the FT motivation significantly higher (M = 4.76%, SE = 0.63, 95% CI = 3.48% to 6.05%) than women (M = 3.54%, SE = 0.57, 95% CI = 2.37% to 4.72%); an average 1.22% of men (SE = 0.17, 95% CI = 0.87% to 1.57%) expressed higher levels of this construct than women. The interaction between gender and time was not significant, $F(1, 31) = 0.01$, $p = .933$, $\eta^2 = .000$, suggesting that gender differences did not change in 2020 compared to 2019.

EAL. There was a significant main effect of gender, $F(1, 31) = 46.59$, $p < .001$, $\eta^2 = .600$; men ranked the EAL motivation significantly higher (M = 9.49%, SE = 1.25, 95% CI = 6.94% to 12.05%) than women (M = 7.64%, SE = 1.16, 95% CI = 5.27% to 10.00%), in both time periods; an average 1.86% of men (SE = 0.27, 95% CI = 1.30% to 2.41%) expressed higher levels of this motivation construct than women. According to the H3d research hypothesis the interaction between gender and time was significant ($p < .10$), $F(1, 31) = 1.72$, $p = .099$, $\eta^2 = .053$, i.e., gender differences in EAL changed in the year of COVID-19 relative to the previous year. To check for the source of the variation in the significant interaction, a simple main effect analysis and t-test pair comparisons between women and men follow-up analyses were performed for 2019 and

2020, separately. The t-test pair results showed significant differences between women and men entrepreneurs in EAL in 2019, $t(31) = 5.98$, $p < .001$, and a significant and larger difference between women and men, favouring men, in 2020, $t(31) = 7.46$, $p < .001$. An average 1.64% (SE = 0.28, 95% CI = 1.09% to 2.22%) more men than women claimed EAL as their motivation to start a business in 2019; and this gender difference increased significantly in 2020 to 4.07% (SE = 0.55, 95% CI = 2.96% to 5.18%) in favour of men (Figure 4).

Figure 4 Percent of motivations during COVID-19 (2020) compared to the pre-pandemic year (2019)



6.4 Relationships between the motivation constructs and: FoF, perception of opportunities to start a business and opportunity exploitation index

In line with H4 hypothesis, Pearson correlations between the motivation constructs and FoF and perceptions of opportunity to start a business in 2019 and 2020 showed an overall strengthened relationship between the variables in 2020. An in-depth examination of the relationships between the variables, distinguishing between the gender groups and each construct separately, revealed these strengthened relationships, especially among women. Significantly stronger relationships were found for both the perceptions of opportunity and opportunity exploitation index with motivation constructs BGW and EAL, among women, suggesting a positive and significant relationship between perception of opportunities to start a business and both BGW and EAL in 2020. Correlation between variables and Fisher Z scores are listed in Table 2. It can be concluded that H4 study hypothesis was fully confirmed for both gender groups, although to a greater extent for women relative to men.

Table 3 presents the summary of the study findings. A review of the results summarised in Table 3 show that the research hypotheses were largely confirmed. H1a and H1b study hypotheses were fully confirmed. A decrease in FoF was found and an

increase in the perception of opportunity following the plague. In light of this, in comparison between the years 2019 and 2020, there was an increase in opportunity exploitation among entrepreneurs. In addition, study H2 hypothesis was partially confirmed. The hypothesis was confirmed for the increase of BGW and for EA types of entrepreneurial motivations according the Covid19 pandemic, but was not confirmed for the MED and FT types of entrepreneurial motivations. Furthermore, findings for H3a to H3d hypotheses partly contributed study hypotheses. In this context, the research hypothesis H3b regarding differential changes in perceptions of opportunity for male and female during the COVID-19 pandemic was fully confirmed. It was found that males see in the pandemic year as more of an opportunity for entrepreneurship than females, relative to the period preceding the pandemic. Hypothesis H3a, H3c, and H3d regarding differential changes in opportunity exploitation, *FoF*, and motivations for entrepreneurship, between gender groups during the COVID-19 pandemic have not been confirmed, except to a partial confirmation for H3d hypothesis that linked to gender differential changes in the EAL motivation. Gender difference increased, from 2019 to 2020, in the favour of men, in the claimed of EAL as a motivation to start a entrepreneurial business. Examining the differences between gender groups in general, independent of the Covid19 pandemic, showed that entrepreneurial men are more likely than entrepreneurial women to see opportunities for entrepreneurship, less afraid of failures, and report more motivation to start a business for the reasons of MAD, BGW, FT, and EAL.

Table 3 Summary of study findings

	Changes between 2019 and 2020	*Gender differences*	*Gender difference x time*
Opportunity exploitation index	2019 > 2020	Male > Female	No significant interaction
FoF	2019 < 2020	Male < Female	No significant interaction
Perceived opportunity	2019 > 2020	Male > Female	2019: Male > Female 2020: Male > Female
Motivation constructs:			
MAD	=	Male > Female	No significant interaction
BGW	2019 < 2020	Male > Female	No significant interaction
FT	=	Male > Female	No significant interaction
EAL	2019 < 2020	Male > Female	2019: Male > Female 2020: Male > Female
MAD x FoF	Positive, 2019 > 2020, not significant	2019: No gender differences 2020: No gender differences	No gender differences over time

Table 3 Summary of study findings (continued)

	Changes between 2019 and 2020	*Gender differences*	*Gender difference x time*
BGW x FoF	No difference between years	2019: No gender differences 2020: No gender differences	No gender differences over time
FT x FoF	Positive, 2019 > 2020, not significant	2019: No gender differences 2020: No gender differences	No gender differences over time
EAL x FoF	No correlation, no difference between years	2019: No gender differences 2020: No gender differences	No gender differences over time
MAD x perceived opportunity	Positive correlation, 2019 > 2020, not significant	2019: No gender differences 2020: No gender differences	Male: Non-significant positive correlation in 2020 Female: Significant positive correlation in 2020 No gender differences over time
BGW x perceived opportunity	No significant correlation, 2019 negative ≠ 2020 positive, no significant difference	2019: No gender differences 2020: Female > Male	Male: Significant positive correlation in 2020, 2019 < 2020 Female: Significant positive correlation in 2020, 2019 < 2020, significant difference
FT x perceived opportunity	Positive, significant correlation, 2019 = 2020	2019: No gender differences 2020: Female > Male	Both genders: stronger positive correlation in 2020 than in 2019, not significant
EAL x perceived opportunity	Negative 2019 ≠ positive 2020, significant difference	2019: No gender differences 2020: Female > Male	Male: Significant positive correlation in 2020, 2019 < 2020 Female: Significant positive correlation in 2020, 2019 < 2020, significant difference

Notes: FoF, fear of failure; BGW, building great wealth; EAL, need to earn a living; MAD, making a difference; FT, continuing the family tradition.

7 Discussion and conclusions

Research has shown that launching new businesses is a critical response for recovery from crises; this is especially true for the COVID-19 pandemic due to its substantial global and diverse effects on the economy (Doern et al., 2019; Wenzel et al., 2020). Moreover, recent research has emphasised the need to rely on entrepreneurship for global recovery (Ratten, 2020). Business launches in times of crisis are even more important for women-led entrepreneurial businesses, as these are depicted as smaller and less growth-oriented than those run by men in normal times (Arenius and Minniti, 2005; Brush et al., 2017; Nikou, et al., 2019), emphasising their vulnerability during crises. Combined with women's more intense perceptions of hindrances to starting their businesses during periods of crisis (Drydakis, 2015; Giorgi et al., 2015), and their generally lower rates of business launches relative to men (Elam et al., 2019), there is a lower propensity for opening businesses among women entrepreneurs during periods of turbulence. This is true even though crises present exploitable opportunities (Apedo-Amah et al., 2020; Deb et al., 2019; Elkins, 2017; Giones et al., 2020) and hasten success through new ventures; i.e., crises bring about opportunities and impediments for starting a business in tandem. In practice, the full impact of COVID-19 on entrepreneurial launches is still unknown, as we are still in the midst of the pandemic. Nevertheless, an assessment of the extent of business launches during the crisis in comparison to previous years is vital for further recovery operations. To fill this gap and promote research on business launches during crises, this study delves into the prospect of business openings during the COVID-19 pandemic by assessing changes in the antecedents of the act of launching a business, i.e., FoF, perceived opportunities, and motivations to start a business represented by four constructs (BGW, MAD, FT, EAL), among women and men entrepreneurs, during two time periods: pre-pandemic (2019) and during the COVID-19 pandemic (2020). Evaluating these antecedents using the global GEM data from 2019 and 2020 shed light on both the direction and magnitudes of the changes during the pandemic among the genders. This information may serve to predict business launches. In addition, the interconnectedness of the antecedents was re-evaluated in the context of the pandemic, suggesting an intertwined concept that could predict future business' launches as the crisis persists.

Our findings revealed several points of interest. First, overall, the included variables, i.e., the antecedents of the act of starting a business, gave significant results, proving their relevance in the context of business launches during a crisis. COVID-19 is considered a major disaster, affecting the entire global economy (Baker et al., 2020; Goodell, 2020; Howell et al., 2020), and endeavours to elicit more empirical insights on entrepreneurs' projected conduct under this exceptional phenomenon are critical; this is especially true for business launches (Davidsson and Gruenhagen, 2020; Maritz et al., 2020), which are essential to economic recovery (Isenberg and Schultz, 2020). Decoding these antecedents, which are pertinent to COVID-19, therefore contributes greatly to research and practice. However, while our statistical analyses revealed findings that were consistent with previous research studies, with regard to the decrease in perceived opportunities to start a business (see Klapper and Love, 2011; Paulson and Townsend, 2004) and the increase in FoF (see Ekore and Okekeocha, 2012; Kong et al., 2020; Wennberg et al., 2013) during the pandemic, indicating a lower probability of starting a business at this time, the picture changes when motivations are assessed. Motivations to start a business are robust predictors of the act itself (Kautonen et al., 2015; Krueger et

al., 2000). Our study revealed a change in extrinsic motivations, i.e., BGW and EAL, in 2020 vs. 2019; in contrast, intrinsic motivations MAD and FT did not emerge as significant over time, indicating no change during the pandemic compared to the previous year. From the necessity/opportunity perspective, changes were revealed in both categories. Overall, the main changes in motivation were associated with extrinsic and necessity motives, and extrinsic and opportunity motives. Whereas previous research has yielded limited and inconsistent results on motivations to start a business during crises from both intrinsic/extrinsic (Giotopoulos et al., 2017a, 2017b; Soininen, 2013) and necessity/opportunity (Arrighetti et al., 2016; Jafari-Sadeghi, 2020; Zahra, 2021) perspectives, our findings refute some of these previous study findings on crises' effects on motivation (Segal et al., 2005); they also reorganise and hone our understanding of motivations in times of crisis by providing a thorough look at both categorisations. Specifically, COVID-19 introduces a new realm in which the financial aspect, i.e., extrinsic motives, is substantial, yet takes on both necessity and opportunity forms, implying that entrepreneurs can 'see' beyond the necessity of making money for a living to the finance-related opportunities introduced by COVID-19. This perspective underpins the pertinence of bricolage in the context of the pandemic, specifically, by suggesting that entrepreneurs during the pandemic generate existing and available resources, not only to make a living in the here and now, but also to increase their wealth in the future, through the creation of new businesses, considered a way of exploiting resources (Garud and Karnøe, 2003; Stinchfield et al., 2013) to foster their financial capabilities (Williams et al., 2017). In addition, our results reveal a significant finding of no change in intrinsic motivations during the pandemic, disproving the few previous studies in this area on the dominance of intrinsic motivations in times of crisis, although those studies linked intrinsic motivations to educated entrepreneurs (Giotopoulos et al., 2017a, 2017b) and to high-income economies (Fernández-Serrano and Romero, 2013; Rani and Desiana, 2019). The entrepreneurship literature in the context of crises suffers from a paucity of research on the intrinsic/extrinsic dichotomy. Our results therefore enrich this research by embedding the intrinsic/extrinsic classification in the necessity/opportunity model and providing a richer and more refined basis to understand the motivations for starting a business during the COVID-19 pandemic.

The second point refers to the significant relationships found between the antecedents of launching a business in times of crisis; specifically, perceived opportunity and the index representing opportunity exploitation[10] were found, separately, to have stronger relationships with the motivation constructs during COVID-19, and these were more pronounced among women. Accordingly, lower levels of perceived opportunity during 2020 were significantly related to lower levels of all motivation constructs, mainly among women, and lower values for the opportunity exploitation index were related to lower levels of BGW and FT. One aspect of these findings aligns with bricolage: the relationship between interpretation of the availability of resources to be deployed within the business and the impetus to mobilise those resources was represented, at least in part, in the perceived opportunity and opportunity exploitation index (i.e., available resources), and mobilisation of the resources (i.e., the motivations to act and launch a business) (Digan et al., 2019; Garud and Karnøe, 2003). The findings also harmonise with the TPB, in connecting the perception of control to this context, which is prevalent in this theory and represented in our study by the opportunity exploitation index's association with motivations (Ajzen, 1991; Haus et al., 2013; Krueger et al., 2000; Maes et al., 2014; Schlaegel and Koenig, 2014). While past research treated these antecedents

in isolation, this study highlights the value of an intertwined, integrated structure of antecedents in bolstering their relevance in assessing the propensity for launching a business. This contribution is even more pronounced among women. Moreover, orchestrating the variables into a 'bundle of precursors' that can be used to predict business launches in future and ongoing crises is imperative, and merits further probing.

The third and fourth points focus on the genders. Gender differences emerged across all included variables in 2019, portraying women as perceiving lower levels of opportunity, as well as of each of the motivation constructs, and higher levels of FoF. Our interaction analyses over time showed no significant effect of the pandemic on the gender differences, except in two variables: perceived opportunity and EAL. This suggests that the pandemic has not affected women more severely than men, for most of the included variables, refuting previous research depicting crises' more pronounced effects on women than on men (Daly et al., 2020; Drydakis, 2015; Kuhn et al., 2021; Zampetakis et al., 2017). The consequent fourth point refers to the strengthened relationships, revealed among women, of perceived opportunity with EAL and BGW, separately, during the pandemic year. These gender differences can be understood through previous research showing crises' negative effects on the workforce, and pointing to a more severe impact on women than men (Giorgi et al., 2015), for example, in terms of layoffs and losing jobs, and difficulties in accessing finances (Cowling et al., 2020; Paul and Sarma, 2013), and overall, in the actual decline in business creation among women entrepreneurs in times of crisis (Fairlie, 2020; Klapper and Love, 2011; Naudé, 2020). These can explain the financial aspects, embodied in EAL and BGW, which become more difficult to address, with the decrease in perceived opportunities. Combined with the more pronounced crisis effects on women's physical and mental health compared to men (Drydakis, 2015) and on their perceptions of barriers (Verheul et al., 2012), women may more strongly link unavailability of opportunities and lower finance-based motivations to start a business during a crisis. These findings are significant in tapping into the main essence of women entrepreneurs' challenges in times of crisis, reinforcing the relevance of the TPB in such times and connecting it to gender, a barely touched-upon niche in the context of this theory. The findings suggest that during the COVID-19 pandemic, the perceived availability of opportunities has been more tightly related to financial motivations, as both a necessity and opportunity motive, and these two relationships differ between the genders; other changes in the antecedents' relationships apply to both genders. As such, the findings touch upon the complementarity of the TPB and bricolage: they support the relationships between motivations and perceived opportunities and opportunity exploitation index, in line with the TPB; and the role of perceived opportunity as a driver to act, as represented by financial motivation, in line with bricolage.

7.1 Implications and limitations

The global focus of this study enables painting a more complete picture of entrepreneurial launches, which is especially relevant to the COVID-19 pandemic that is affecting the entire world. A general outlook that demonstrates the connection between perceptions of opportunity and motivations for starting a business is a key contribution in the generation of empirical data to learn more about entrepreneurial conduct during the pandemic. Research-wise, our findings provide insights to some future research angles, which include a closer probe of the role of socioeconomic and sociocultural components

in the relationships found in our study. Specifically, future analyses should include nationality, sector of activity, and household income or family status to refine the effects of the intertwined relations of perceptions of opportunity and the different motivations (necessity/opportunity; intrinsic/extrinsic) on the propensity to start a business in times of crisis. Such angles are particularly important to research on the genders' conduct during crisis episodes, as fertile future research will reinforce the relevance of this study's effort (among others) to refute previous findings on women's lower propensity to start businesses in crises; future analyses can be steered toward conditions in which both women and men see more opportunities and are motivated to start a business.

Our findings are valuable to practice, in providing information for institutions that are dedicated to entrepreneurship, such as governmental and private companies and associations, accelerators and academic institutions, to monitor, prepare and implement programs that tap into the motivations that drive entrepreneurs, and wanna-preneurs, to start a business during crises, as well as equip entrepreneurs and wanna-preneurs with the skills and mind sets to exploit opportunities that arise, sometimes even more saliently, during crises.

It should be noted, however, that some of the GEM measures may be too simple to represent the complex constructs, and the cross-cultural and economic development-based differences among the countries in the sample are a major limitation. The cross-sectional nature of the data does not always allow for one-sided causal interpretations for entrepreneurial behaviour. One of the principal measures used by GEM is Total early-stage Entrepreneurial Activity (TEA),[11] which indicates the percentage of individuals involved in the early stages of a venture project. Subsequently, it suffers from limitations, such as that there is no indication on the survival rate or entrepreneurial success of the businesses that have been created, rather, the act of starting business solely appears; as such our findings can be useful to decode only the initial part of the new venture creation, though, theoretically, the new venture created may not survive for a long time; future research should strive to generate data on the business' survival rates as well. Yet, data generation that includes the business' survival rate would draw on responses on previous attitudes obtained, at least two years ago,[12] to verify the business' success, and by doing so the reliability rates of the attitudes would decrease.[13] In similar vein another limitation refers to lack of data on any entrepreneurial activity taking place in established, more mature businesses, or new business spinoffs sponsored by parent companies. Therefore, direct application of TEA as an overall measure of entrepreneurial behaviour in a country has limitations and should not be used as a simple ranking of entrepreneurship among nations.

Future research should also consider qualitative efforts, especially as entrepreneurship is culture-bound; specifically, this research caters implication for policy in crisis episodes, which are culture-specific. Future research should focus on the *how* rather than the *if* the entrepreneurial action, such as starting a business is fostered in different environments, and a holistic-inductive qualitative perspective can be valuable to generate insights of entrepreneurs fears, perceptions of opportunity and motivations vis-à-vis the crisis fallouts, especially when the shock-response is still dominant; Dana and Dana (2005) discuss thoroughly and in depth perspectives of non-quantitative methodologies that can assist in extracting the salient and most insightful attitudes from entrepreneurs, hence most relevant to a study on attitudes occurring in a timely crisis event. Finally, there is a substantial need to delve into the county-level to extract factors

of significance to this study's findings, such as, country's income level, government endowment to starting new businesses, entrepreneurial culture, among others; future efforts should tackle these factors in the context of starting new businesses during crises.

References

Ahl, H. (2006) 'Why research on women entrepreneurs needs new directions', *Entrepreneurship Theory and Practice*, Vol. 30, No. 5, pp.595–621.

Ajzen, I. (1991) 'The theory of planned behavior', *Organizational Behavior and Human Decision Processes*, Vol. 50, No. 2, 179–211.

Angulo-Guerrero, M.J., Pérez-Moreno, S. and Abad-Guerrero, I.M. (2017) 'How economic freedom affects opportunity and necessity entrepreneurship in the OECD countries', *Journal of Business Research*, Vol. 73, pp.30–37.

Apedo-Amah, M.C., Avdiu, B., Cirera, X., Cruz, M., Davies, E., Grover, A. et al. (2020) *Unmasking the impact of covid-19 on businesses: Firm level evidence from across the world*, Policy Research Working Paper no. 9434, World Bank, Washington, DC.

Arenius, P. and Minniti, M. (2005) 'Perceptual variables and nascent entrepreneurship', *Small Business Economics*, Vol. 24, No. 3, pp.233–247.

Arrighetti, A., Caricati, L., Landini, F. and Monacelli, N. (2016) 'Entrepreneurial intention in the time of crisis: a field study', *International Journal of Entrepreneurial Behavior & Research*, Vol. 22, No. 6, pp.835–859.

Baker, S.R., Bloom, N., Davis, S.J. and Terry, S.J. (2020) *Covid-induced economic uncertainty*, NBER working paper no. 26983, National Bureau of Economic Research, Cambridge, MA.

Baker, T. and Nelson, R.E. (2005) 'Creating something from nothing: resource construction through entrepreneurial bricolage', *Administrative Science Quarterly*, Vol. 50, No. 3, pp.329–366.

Balla-Elliott, D., Cullen, Z.B., Glaeser, E.L., Luca, M. and Stanton, C.T. (2020) *Business re-opening during the COVID-19 pandemic*, NBER working paper no. w27362, National Bureau of Economic Research, Cambridge, MA.

Bartik, A.W., Bertrand, M., Cullen, Z.B., Glaeser, E.L., Luca, M. and Stanton, C.T. (2020) *How are small businesses adjusting to COVID-19? Early evidence from a survey*, NBER working paper no. w26989, National Bureau of Economic Research, Cambridge, MA.

Benabou, R. and Tirole, J. (2003) 'Intrinsic and extrinsic motivation', *The Review of Economic Studies*, Vol. 70, No. 3, pp.489–520.

Block, J.H. and Wagner, M. (2010) 'Necessity and opportunity entrepreneurs in Germany: characteristics and earnings differentials', *Schmalenbach Business Review*, Vol. 62, No. 2, pp.154–174.

Booth, S.A. (2015) *Crisis Management Strategy: Competition and Change in Modern Enterprises*, Routledge, London.

Bosio, E., Djankov, S., Jolevski, F. and Ramalho, R. (2020) *Survival of firms during economic crisis*, World Bank Policy Research Working Paper no. 9239, World Bank, Washington DC.

Bosma, N., Acs, Z.J., Autio, E., Coduras, A. and Levie, J. (2008) *Global Entrepreneurship Monitor 2008 Executive Report*, GEM, London.

Bosma, N., Hill, S., Ionescu-Somers, A., Kelley, D., Levie, J. and Tarnawa, A. (2020) *Global Entrepreneurship Monitor 2019/2020 Global Report*, GEM, London.

Bosma, N., Jones, K., Autio, E. and Levie, J. (2007) *Global Entrepreneurship Monitor 2007 Executive Report*, GEM, London.

Bowen, T., Del Ninno, C., Andrews, C., Coll-Black, S., Johnson, K., Kawasoe, Y. et al. (2020) *Adaptive social protection: Building resilience to shocks*, World Bank Publications.

Brown, R., Rocha, A. and Cowling, M. (2020) 'Financing entrepreneurship in times of crisis: exploring the impact of COVID-19 on the market for entrepreneurial finance in the United Kingdom', *International Small Business Journal*, Vol. 38, No. 5, pp.380–390.

Brünjes, J. and Diez, J.R. (2013) ''Recession push' and 'prosperity pull' entrepreneurship in a rural developing context', *Entrepreneurship & Regional Development*, Vol. 25, Nos. 3/4, pp.251–271.

Brush, C., Ali, A., Kelley, D. and Greene, P. (2017) 'The influence of human capital factors and context on women's entrepreneurship: which matters more?' *Journal of Business Venturing Insights*, Vol. 8, pp.105–113.

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.

Cacciotti, G. and Hayton, J.C. (2015) 'Fear and entrepreneurship: a review and research agenda', *International Journal of Management Reviews*, Vol. 17, No. 2, pp.165–190.

Caponigro, J.R. (2000) *The Crisis Counselor: A Step-by-Step Guide to Managing a Business Crisis*, McGraw-Hill., New York

Carsrud, A. and Brännback, M. (2011) 'Entrepreneurial motivations: What do we still need to know?' *Journal of Small Business Management*, Vol. 49, No. 1, pp.9–26.

Carsrud, A., Brännback, M., Elfving, J. and Brandt, K. (2017) 'Motivations: the entrepreneurial mind and behavior', in Brännback, M. and Carsrud, A.L. (Eds): *Revisiting the Entrepreneurial Mind*, Springer, Cham, pp.185–209.

Chong, J.K.S. (2004) 'Six steps to better crisis management', *Journal of Business Strategy*, Vol. 25, No. 2, pp.43–46.

Conroy, D.E. (2001) 'Progress in the development of a multidimensional measure of fear of failure: the Performance Failure Appraisal Inventory (PFAI)', *Anxiety, Stress and Coping*, Vol. 14, No. 4, pp.431–452.

Cooper, R.B. and Jayatilaka, B. (2006) 'Group creativity: the effects of extrinsic, intrinsic, and obligation motivations', *Creativity Research Journal*, Vol. 18, No. 2, pp.153–172.

Corley, K.G. and Gioia, D.A. (2011) 'Building theory about theory building: what constitutes a theoretical contribution?' *Academy of Management Review*, Vol. 36, No. 1, pp.12–32.

Cowling, M., Marlow, S. and Liu, W. (2020) 'Gender and bank lending after the global financial crisis: are women entrepreneurs safer bets?' *Small Business Economics*, Vol. 55, No. 4, pp.853–880.

Daly, M., Sutin, A.R. and Robinson, E. (2020) 'Longitudinal changes in mental health and the COVID-19 pandemic: evidence from the UK household longitudinal study', *Psychological Medicine*. DOI: 10.1017/S0033291720004432.

Dana, L.P. and Dana, T.E. (2005) 'Expanding the scope of methodologies used in entrepreneurship research', *International Journal of Entrepreneurship and Small Business*, Vol. 2, No. 1, pp.79–88.

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.

Davidsson, P. and Gruenhagen, J.H. (2020) 'Fulfilling the process promise: a review and agenda for new venture creation process research', *Entrepreneurship Theory and Practice*, Vol. 45, No. 8, 1042258720930991.

Dawson, C. and Henley, A. (2012) '"Push" versus "pull" entrepreneurship: an ambiguous distinction?' *International Journal of Entrepreneurial Behavior & Research*, Vol. 18, No. 6, pp.697–719.

de Bruin, A., Shaw, E. and Lewis, K.V. (2017) 'The collaborative dynamic in social entrepreneurship', *Entrepreneurship & Regional Development*, Vol. 29, Nos. 7/8, pp.575–585.

Deb, P., David, P., O'Brien, J.P. and Duru, A. (2019) 'Attainment discrepancy and investment: effects on firm performance', *Journal of Business Research*, Vol. 99, pp.186–196.

Demirgüç-Kunt, A., Peria, M.S.M. and Tressel, T. (2020) 'The global financial crisis and the capital structure of firms: was the impact more severe among SMEs and non-listed firms?' *Journal of Corporate Finance*, Vol. 60, 101514.

DesJardine, M., Bansal, P. and Yang, Y. (2019) 'Bouncing back: building resilience through social and environmental practices in the context of the 2008 global financial crisis', *Journal of Management*, Vol. 45, No. 4, pp.1434–1460.

Devece, C., Peris-Ortiz, M. and Rueda-Armengot, C. (2016) 'Entrepreneurship during economic crisis: success factors and paths to failure', *Journal of Business Research*, Vol. 69, No. 11, pp.5366–5370.

Digan, S.P., Sahi, G.K., Mantok, S. and Patel, P.C. (2019) 'Women's perceived empowerment in entrepreneurial efforts: the role of bricolage and psychological capital', *Journal of Small Business Management*, Vol. 57, No. 1, pp.206–229.

Doern, R. (2016) 'Entrepreneurship and crisis management: the experiences of small businesses during the London 2011 riots', *International Small Business Journal*, Vol. 34, pp.276–302.

Doern, R., Williams, N. and Vorley, T. (2019) 'Special issue on entrepreneurship and crises: Business as usual? An introduction and review of the literature', *Entrepreneurship & Regional Development*, Vol. 31, Nos. 5/6, pp.400–412.

Drydakis, N. (2015) 'The effect of unemployment on self-reported health and mental health in Greece from 2008 to 2013: a longitudinal study before and during the financial crisis', *Social Science & Medicine*, Vol. 128(C), pp.43–51.

Ekore, J.O. and Okekeocha, O.C. (2012) 'Fear of entrepreneurship among university graduates: a psychological analysis', *International Journal of Management*, Vol. 29, No. 2, pp.515–524.

Elam, A.B., Brush, C.G., Greene, P.G., Baumer, B., Dean, M. and Heavlow, R (2019) *Global Entrepreneurship Monitor 2018/2019 Women's Entrepreneurship Report*, GEM, London.

Elkins, K. (2017) '11 of Warren Buffett's funniest and most frugal quirks', *CNBC Money*, 9 May. Available online at: https://www.cnbc.com/2017/05/09/11-of-warren-buffetts-funniest-and-most-frugal-quirks.html (accessed on 9 May 2017).

Elliott, D., Swartz, E. and Herbane, B. (2002) *Business Continuity Management: A Crisis Management Approach*, Psychology Press, Hove, UK.

Fairlie, R. (2020) 'The impact of COVID-19 on small business owners: evidence from the first three months after widespread social-distancing restrictions', *Journal of Economics & Management Strategy*, Vol. 29, No. 4, pp.727–740.

Fernández-Serrano, J. and Romero, I. (2013) 'Entrepreneurial quality and regional development: characterizing SME sectors in low income areas', *Papers in Regional Science*, Vol. 92, No. 3, pp.495–513.

Gartner, W. and Liao, J. (2012) 'The effects of perceptions of risk, environmental uncertainty, and growth aspirations on new venture creation success', *Small Business Economics*, Vol. 39, No. 3, pp.703–712.

Garud, R. and Karnøe, P. (2003) 'Bricolage versus breakthrough: distributed and embedded agency in technology entrepreneurship', *Research Policy*, Vol. 32, No. 2, pp.277–300.

Giones, F., Brem, A., Pollack, J.M., Michaelis, T.L., Klyver, K. and Brinckmann, J. (2020) 'Revising entrepreneurial action in response to exogenous shocks: considering the COVID-19 pandemic', *Journal of Business Venturing Insights*, Vol. 14, e00186.

Giorgi, S., Lockwood, C. and Glynn, M.A. (2015) 'The many faces of culture: making sense of 30 years of research on culture in organization studies', *Academy of Management Annals*, Vol. 9, No. 1, pp.1–54.

Giotopoulos, I., Kontolaimou, A. and Tsakanikas, A. (2017a) 'Antecedents of growth-oriented entrepreneurship before and during the Greek economic crisis', *Journal of Small Business and Enterprise Development*, Vol. 24, No. 3, pp.528–544.

Giotopoulos, I., Kontolaimou, A. and Tsakanikas, A. (2017b) 'Drivers of high-quality entrepreneurship: what changes did the crisis bring about?' *Small Business Economics*, Vol. 48, No. 4, pp.913–930.

Goodell, J.W. (2020) 'COVID-19 and finance: agendas for future research', *Finance Research Letters*, Vol. 35, 101512.

Hallward-Driemeier, M. and Rijkers, B. (2013) 'Do crises catalyze creative destruction? Firm-level evidence from Indonesia', *Review of Economics and Statistics*, Vol. 95, No. 1, pp.1788–1810.

Hannah, S.T., Uhl-Bien, M., Avolio, B.J. and Cavarretta, F.L. (2009) 'A framework for examining leadership in extreme contexts', *The Leadership Quarterly*, Vol. 20, No. 6, pp.897–919.

Haus, I., Steinmetz, H., Isidor, R. and Kabst, R. (2013) 'Gender effects on entrepreneurial intention: a meta-analytical structural equation model', *International Journal of Gender and Entrepreneurship*, Vol. 5, No. 2, pp.130–156.

Hechavarria, D.M. and Reynolds, P.D. (2009) 'Cultural norms & business start-ups: the impact of national values on opportunity and necessity entrepreneurs', *International Entrepreneurship and Management Journal*, Vol. 5, No. 4, pp.417–437.

Hilson, G., Hilson, A. and Maconachie, R. (2018) 'Opportunity or necessity? Conceptualizing entrepreneurship at African small-scale mines', *Technological Forecasting and Social Change*, Vol. 131, pp.286–302.

Hobfoll, S.E. (2001) 'The influence of culture, community, and the nested-self in the stress process: advancing conservation of resources theory', *Applied Psychology*, Vol. 50, No. 3, pp.337–421.

Howell, S., Lerner, J., Nanda, R. and Townsend, R.R. (2020) *Financial distancing: How venture capital follows the economy down and curtails innovation*. Harvard Business School Working paper no. 20-115, 12 May. Available online at: https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3594239 (accessed on 7 May 2020).

Isenberg, D. and Schultz, E.B. (2020) *Opportunities for Entrepreneurs in the Pandemic and Beyond*, Medium.com. 2020. Available online at: https://medium.com/@disen2/opportunities-for-entrepreneurs-in-the-pandemic-and-beyond-f92f5fa1997b (accessed on 28 May 2020).

Jafari-Sadeghi, V. (2020) 'The motivational factors of business venturing: opportunity versus necessity? A gendered perspective on European countries', *Journal of Business Research*, Vol. 113, pp.279–289.

Jones, C. and Murtola, A-M. (2012) 'Entrepreneurship, crisis, critique', in Hjorth, D. (Ed.): *Handbook on Organisational Entrepreneurship*, Edward Elgar Publishing, Cheltenham, UK, pp.116–133.

Kariv, D. and Coleman, S. (2015) 'Toward a theory of financial bricolage: the impact of small loans on new businesses', *Journal of Small Business and Enterprise Development*, Vol. 22, No. 2, pp.196–224.

Kariv, D., Kaplan, O., Ibanescu, M. and Cisneros, L. (forthcoming) 'From perceptions to performance to business intentions: what do women and men entrepreneurs really see?' *International Journal of Entrepreneurship and Small Business*, DOI: 10.1504/IJESB.2020.10034846.

Kautonen, T., Van Gelderen, M. and Fink, M. (2015) 'Robustness of the theory of planned behavior in predicting entrepreneurial intentions and actions', *Entrepreneurship Theory and Practice*, Vol. 39, No. 3, pp.655–674.

King, D.W., King, L.A. and Vogt, D.S. (2003) *Manual for the Deployment Risk and Resilience Inventory (DRRI): A Collection of Measures for Studying Deployment-Related Experiences of Military Veterans*, National Center for PTSD, Boston.

Klapper, L. and Love, I. (2011) 'The impact of the financial crisis on new firm registration', *Economics Letters*, Vol. 113, No. 1, pp.1–4.

Kollmann, T., Stöckmann, C. and Kensbock, J.M. (2017) 'Fear of failure as a mediator of the relationship between obstacles and nascent entrepreneurial activity – an experimental approach', *Journal of Business Venturing*, Vol. 32, No. 3, pp.280–301.

Kong, F., Zhao, L. and Tsai, C.H. (2020) 'The relationship between entrepreneurial intention and action: the effects of fear of failure and role model', *Frontiers in Psychology*, Vol. 11, p.229.

Krueger Jr, N.F., Reilly, M.D. and Carsrud, A.L. (2000) 'Competing models of entrepreneurial intentions', *Journal of Business Venturing*, Vol. 15, Nos. 5/6, pp.411–432.

Krueger, N. (1993) 'The impact of prior entrepreneurial exposure on perceptions of new venture feasibility and desirability', *Entrepreneurship Theory and Practice*, Vol. 18, No. 1, pp.5–21.

Kuhn, U., Klaas, H.S., Antal, E., Dasoki, N., Lebert, F., Lipps, O., Monsch, G-A., Refle, J-E., Ryser, V-A., Tillmann, R. and Voorpostel, M. (2021) 'Who is most affected by the Corona crisis? An analysis of changes in stress and well-being in Switzerland', *European Societies*, Vol. 23(suppl. 1), pp.S942–S956.

Kwong, C., Tasavori, M. and Wun-mei, C.C. (2017) 'Bricolage, collaboration and mission drift in social enterprises', *Entrepreneurship & Regional Development*, Vol. 29, Nos. 7/8, pp.609–638.

Kwong, C.C., Cheung, C.W., Manzoor, H. and Rashid, M.U. (2019) 'Entrepreneurship through Bricolage: a study of displaced entrepreneurs at times of war and conflict', *Entrepreneurship & Regional Development*, Vol. 31, Nos. 5/6, pp.435–455.

Lagadec, P. (2009) 'A new cosmology of risks and crises: time for a radical shift in paradigm and practice', *Review of Policy Research*, Vol. 26, No. 4, pp.473–486.

Liguori, E. and Winkler, C. (2020) 'From offline to online: challenges and opportunities for entrepreneurship education following the COVID-19 pandemic', *Entrepreneurship Education and Pedagogy*, Vol. 3, No. 4, pp.346–351.

Linnenluecke, M.K. (2017) 'Resilience in business and management research: a review of influential publications and a research agenda', *International Journal of Management Reviews*, Vol. 19, No. 1, pp.4–30.

Lipshitz, R. and Strauss, O. (1997) 'Coping with uncertainty: a naturalistic decision-making analysis', *Organizational Behavior and Human Decision Processes*, Vol. 69, No. 2, pp.149–163.

Locke, E.A. and Schattke, K. (2019) 'Intrinsic and extrinsic motivation: time for expansion and clarification', *Motivation Science*, Vol. 5, No. 4, pp.277–290.

Maes, J., Leroy, H. and Sels, L. (2014) 'Gender differences in entrepreneurial intentions: a TPB multi-group analysis at factor and indicator level', *European Management Journal*, Vol. 32, No. 5, pp.784–794.

Maritz, A., Perenyi, A., de Waal, G. and Buck, C. (2020) 'Entrepreneurship as the unsung hero during the current COVID-19 economic crisis: Australian perspectives', *Sustainability*, Vol. 12, No. 11, 4612.

Martinelli, E., Tagliazucchi, G. and Marchi, G. (2018) 'The resilient retail entrepreneur: dynamic capabilities for facing natural disasters', *International Journal of Entrepreneurial Behavior & Research*, Vol. 24, No. 7, pp.1222–1243.

Mason, C. and Hruskova, M. (2021) 'The impact of Covid-19 on entrepreneurial ecosystems', in McCann, P. and Vorley, T. (Eds): *Productivity and the Pandemic*, Edward Elgar Publishing, Cheltenham, UK, pp.59–72.

Medvedeva, L.N., Kozenko, Y.K. and Komarova, P.O. (2016) 'Environment quality management in green cities', *European Research Studies Journal*, Vol. 19, No. 2, pp.34–45.

Montag, A. (2018) 'Here's why Jeff Bezos still drove a Honda long after he was a billionaire', *CNBC*, 19 January. Available online at: https://www.cnbc.com/2018/01/18/why-amazons-jeff-bezos-drove-a-honda-after-he-was-a-billionaire.html (accessed on 15 April 2020).

Morgan, J. and Sisak, D. (2016) 'Aspiring to succeed: a model of entrepreneurship and fear of failure', *Journal of Business Venturing*, Vol. 31, No. 1, pp.1–21.

Mueller, S.L. and Dato-on, M.C. (2013) 'A cross cultural study of gender-role orientation and entrepreneurial self-efficacy', *International Entrepreneurship and Management Journal*, Vol. 9, No. 1, pp.1–20.

Naudé, W. (2020) *Entrepreneurial recovery from COVID-19: Decentralization, democratization, demand, distribution, and demography*, IZA DP No. 13436, IZA Institute of Labor Economics, Bonn.

Nikou, S., Brännback, M., Carsrud, A.L. and Brush, C.G. (2019) 'Entrepreneurial intentions and gender: pathways to start-up', *International Journal of Gender and Entrepreneurship*, Vol. 11, No. 3, pp.348–372.

OECD (2020a) 'Coronavirus (COVID-19): SME policy responses', *OECD Policy Responses to Coronavirus (COVID-19)*, OECD Publishing, Paris. Available online at: https://dx.doi.org/10.1787/04440101-en (accessed on 15 July 2020).

OECD (2020b) 'Start-ups in the time of Covid-19: facing the challenges, seizing the opportunities', *OECD Policy Responses to Coronavirus (COVID-19)*, OECD Publishing, Paris. Available online at: https://www.oecd.org/coronavirus/policy-responses/start-ups-in-the-time-of-covid-19-facing-the-challenges-seizing-the-opportunities-87219267/ (accessed on 13 May 2020).

Orhan, M. and Scott, D. (2001) 'Why women enter into entrepreneurship: an explanatory model', *Women in management review*.

Panyavina, E.A., Chirkova, M.B., Cheglakova, S.G. and Pankov, V.V. (2017) 'The role and place of the crisis traps in the development of the small business of the forest sector in the Russian economy', *European Research Studies Journal*, Vol. XX(3B), pp.478–487.

Paul, S. and Sarma, V. (2013) *Economic crisis and female entrepreneurship: Evidence from countries in Eastern Europe and Central Asia*, Discussion Paper no. 13/08, University of Nottingham, CREDIT.

Paulson, A.L. and Townsend, R. (2004) 'Entrepreneurship and financial constraints in Thailand', *Journal of Corporate Finance*, Vol. 10, No. 2, pp.229–262.

Pereira, J., Braga, V., Correia, A. and Salamzadeh, A. (2021) 'Unboxing organisational complexity: how does it affect business performance during the COVID-19 pandemic?' *Journal of Entrepreneurship and Public Policy*.

Peris-Ortiz, M., Fuster-Estruch, V. and Devece-Carañana, C. (2014) 'Entrepreneurship and innovation in a context of crisis', in Rüdiger, K., Peris-Ortiz, M. and Blanco-González, A. (Eds): *Entrepreneurship, Innovation and Economic Crisis*, Springer, Cham, pp.1–10.

Peterman, N.E. and Kennedy, J. (2003) 'Enterprise education: influencing students' perceptions of entrepreneurship', *Entrepreneurship Theory and Practice*, Vol. 28, No. 2, pp.129–144.

Rani, R. and Desiana, P. (2019) 'The impact of owners' intrinsic motivation and work-life balance on SMEs' performance: the mediating effect of affective commitment', *International Journal of Business*, Vol. 24, No. 4, pp.393–411.

Ratten, V. (2020) 'Coronavirus (covid-19) and entrepreneurship: changing life and work landscape', *Journal of Small Business & Entrepreneurship*, Vol. 32, No. 5, pp.503–516.

Reimer, M. and Matthes, B. (2007) 'Collecting event histories with TrueTales: techniques to improve autobiographical recall problems in standardized interviews', *Quality & Quantity*, Vol. 41, No. 5, pp.711–735.

Runyan, R.C. (2006) 'Small business in the face of crisis: identifying barriers to recovery from a natural disaster', *Journal of Contingencies and Crisis Management*, Vol. 14, No. 1, pp.12–26.

Salamzadeh, A. and Dana, L.P. (2021) 'The coronavirus (COVID-19) pandemic: challenges among Iranian startups', *Journal of Small Business & Entrepreneurship*, Vol. 33, No. 5, pp.489–512.

Schlaegel, C. and Koenig, M. (2014) 'Determinants of entrepreneurial intent: a meta-analytic test and integration of competing models', *Entrepreneurship Theory and Practice*, Vol. 38, No. 2, pp.291–332.

Schwab, K. and Zahidi, S. (2020) *Global competitiveness report: Special edition 2020*. World Economic Forum. Available online at: http://www3.weforum.org/docs/WEF_TheGlobal CompetitivenessReport2020.pdf

Segal, G., Borgia, D. and Schoenfeld, J. (2005) 'The motivation to become an entrepreneur', *International Journal of Entrepreneurial Behavior & Research*, Vol. 11, No. 1, pp.42–57.

Shahriar, A.Z.M. (2018) 'Gender differences in entrepreneurial propensity: evidence from matrilineal and patriarchal societies', *Journal of Business Venturing*, Vol. 33, No. 6, pp.762–779.

Shane, S., Kolvereid, L. and Westhead, P. (1991) 'An exploratory examination of the reasons leading to new firm formation across country and gender', *Journal of Business Venturing*, Vol. 6, No. 6, pp.431–446.

Shane, S., Locke, E.A. and Collins, C.J. (2003) 'Entrepreneurial motivation', *Human Resource Management Review*, Vol. 13, No. 2, pp.257–279.

Shin, J., Taylor, M.S. and Seo, M.G. (2012) 'Resources for change: the relationships of organizational inducements and psychological resilience to employees' attitudes and behaviors toward organizational change', *Academy of Management Journal*, Vol. 55, No. 3, pp.727–748.

Simón-Moya, V., Revuelto-Taboada, L. and Ribeiro-Soriano, D. (2016) 'Influence of economic crisis on new SME survival: reality or fiction?' *Entrepreneurship & Regional Development*, Vol. 28, Nos. 1/2, pp.157–176.

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.

Soininen, J. (2013) *Entrepreneurial orientation in Small and Medium-Sized Enterprises during economic crisis*, Lappeenranta University of Technology.

Spillan, J. and Hough, M. (2003) 'Crisis planning in small businesses: importance, impetus and indifference', *European Management Journal*, Vol. 21, No. 3, pp.398–407.

Stinchfield, B.T., Nelson, R.E. and Wood, M.S. (2013) 'Learning from Levi–Strauss' legacy: art, craft, engineering, bricolage, and brokerage in entrepreneurship', *Entrepreneurship Theory and Practice*, Vol. 37, No. 4, pp.889–921.

Tasavori, M., Kwong, C. and Pruthi, S. (2018) 'Resource bricolage and growth of product and market scope in social enterprises', *Entrepreneurship & Regional Development*, Vol. 30, Nos. 3/4, pp.336–361.

Topper, B. and Lagadec, P. (2013) 'Fractal crises: a new path for crisis theory and management', *Journal of Contingencies and Crisis Management*, Vol. 21, No. 1, pp.4–16.

Tsai, K.H., Chang, H.C. and Peng, C.Y. (2016) 'Refining the linkage between perceived capability and entrepreneurial intention: roles of perceived opportunity, fear of failure, and gender', *International Entrepreneurship and Management Journal*, Vol. 12, No. 4, pp.1127–1145.

Tsilika, T., Kakouris, A., Apostolopoulos, N. and Dermatis, Z. (2020) 'Entrepreneurial bricolage in the aftermath of a shock. Insights from Greek SMEs', *Journal of Small Business & Entrepreneurship*, Vol. 32, No. 6, pp.635–652.

Turker, D. and Selcuk, S.S. (2009) 'Which factors affect entrepreneurial intention of university students?' *Journal of European Industrial Training*, Vol. 33, No. 2, pp.142–159.

Van der Zwan, P., Thurik, R., Verheul, I. and Hessels, J. (2016) 'Factors influencing the entrepreneurial engagement of opportunity and necessity entrepreneurs', *Eurasian Business Review*, Vol. 6, No. 3, pp.273–295.

Van Gelderen, M., Kautonen, T. and Fink, M. (2015) 'From entrepreneurial intentions to actions: self-control and action-related doubt, fear, and aversion', *Journal of Business Venturing*, Vol. 30, No. 5, pp.655–673.

Van Gelderen, M., Thurik, R. and Bosma, N. (2005) 'Success and risk factors in the pre-startup phase', *Small Business Economics*, Vol. 24, No. 4, pp.365–380.

Verheul, I., Thurik, R., Grilo, I. and Van der Zwan, P. (2012) 'Explaining preferences and actual involvement in self-employment: gender and the entrepreneurial personality', *Journal of Economic Psychology*, Vol. 33, No. 2, pp.325–341.

Virick, M., Basu, A. and Rogers, A. (2015) 'Antecedents of entrepreneurial intention among laid-off individuals: a cognitive appraisal approach', *Journal of Small Business Management*, Vol. 53, No. 2, pp.450–468.

Vorobeva, E. and Dana, L.P. (2021) 'The COVID-19 pandemic and migrant entrepreneurship: responses to the market shock', *Migration Letters*, Vol. 18, No. 4, pp.477–485.

Wennberg, K., Pathak, S. and Autio, E. (2013) 'How culture moulds the effects of self-efficacy and fear of failure on entrepreneurship', *Entrepreneurship & Regional Development*, Vol. 25, Nos. 9/10, pp.756–780.

Wennekers, S., Van Wennekers, A., Thurik, R. and Reynolds, P. (2005) 'Nascent entrepreneurship and the level of economic development', *Small Business Economics*, Vol. 24, No. 3, pp.293–309.

Wenzel, M., Stanske, S. and Lieberman, M.B. (2020) 'Strategic responses to crisis', *Strategic Management Journal*, Vol. 41, pp.V7–V18.

Williams, N. and Vorley, T. (2015) 'The impact of institutional change on entrepreneurship in a crisis-hit economy: the case of Greece', *Entrepreneurship & Regional Development*, Vol. 27, Nos. 1/2, pp.28–49.

Williams, N. and Williams, C.C. (2014) 'Beyond necessity versus opportunity entrepreneurship: some lessons from English deprived urban neighbourhoods', *International Entrepreneurship and Management Journal*, Vol. 10, No. 1, pp.23–40.

Williams, T.A. and Shepherd, D.A. (2016) 'Building resilience or providing sustenance: different paths of emergent ventures in the aftermath of the Haiti earthquake', *Academy of Management Journal*, Vol. 59, No. 6, pp.2069–2102.

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.

Winston, A. (2020) 'Is the COVID-19 outbreak a black swan or the new normal?' *MIT Sloan Management Review*, 16 March. Available online at: https://sloanreview.mit.edu/article/is-the-covid-19-outbreak-a-black-swan-or-the-new-normal/ (accessed on 16 March 2020).

Zahra, S.A. (2021) 'International entrepreneurship in the post Covid world', *Journal of World Business*, Vol. 56, No. 1, 101143.

Zampetakis, L.A., Bakatsaki, M., Litos, C., Kafetsios, K.G. and Moustakis, V. (2017) 'Gender-based differential item functioning in the application of the theory of planned behavior for the study of entrepreneurial intentions', *Frontiers in Psychology*, Vol. 8, p.451.

Notes

1 See at: https://crsreports.congress.gov

2 This perspective is also known as push and pull contextual factors that associate business launches with either being pushed into entrepreneurship by negative external forces, i.e., the push factor; or seeking independence, self-fulfilment, i.e., the pull factor (Orhan and Scott, 2001).

3 Measured by: Frfail19/20 – Fear of failure would prevent starting a business

4 Measured by: Opport19/20 Good conditions to start business next 6 months in area I live

5 All measured by: TEA20MOT1/2/3/4

6 The GEM is the world's foremost body of research into entrepreneurship that provides customized special reports, expert opinions, and datasets. Its database is based on a homogeneous questionnaire that collects a wide range of primary data concerning entrepreneurial activities. It also defines the total early-stage entrepreneurial activity as the proportion of the adult population who are engaged in entrepreneurship (i.e., 18–64 year olds) in each country versus the established businesses that have had income for more than 42 months (Bosma et al., 2008).

7 See at: https://www.gemconsortium.org GEM data, GEM 2020 APS Global National Level Data; GEM 2019 APS Global National Level Data

8 As follows: 8 from Asia & Oceania (Iran, Israel, Oman, Qatar, Saudi Arabia, South Korea, Taiwan, United Arab Emirates), 5 from Latin America & the Caribbean (Brazil, Chile, Colombia, Guatemala, Panama), 17 from Europe (Croatia, Cyprus, Germany, Greece, Italy, Latvia, Luxembourg, Netherlands, Norway, Poland, Russia, Slovakia, Slovenia, Spain, Sweden, Switzerland, UK), and 2 from North America (Canada, USA).

9 https://www.weforum.org/reports/the-global-competitiveness-report-2020

10 This index combines perceived opportunity and FoF, as showed in the Measures section.

11 Percentage of adults aged 18–64 years who are either nascent entrepreneurs or owner-managers of a new business, i.e., the proportion of the adult population who are either starting or running a new business.

12 We assume that two years would enable assessing the business' success, at least from the survival perspective.

13 Responses on attitudes (e.g., perceptions of opportunity, fear of failure, motivations) from at least 2 years ago would probably contain interfering variables, hence harm the reliability, and potentially the validity of the research (Reimer and Matthes, 2007).