Diagnosing Training Needs in European Tourism SMEs: The TC-NAV Project for Managing and Overcoming Virulent Crises

Emmanuel Soriano Flores[1], Thomas Andre Prola[2], Íris Hrund Halldórsdóttir[3], Steve Taylor[4]

Abstract

This research aims to gather opinions from experts in the European tourism sector regarding training needs to address severe crises, such as Covid, in Small and Medium-Sized Enterprises (SMEs) across five countries: Spain, Iceland, Ireland, Scotland, and Germany. This study was conducted within the scope of the European TC-NAV project, which is funded by the European Union. The ultimate goal of this project is to develop training solutions for European SMEs Most existing literature on tourism crises primarily examines the impact on destinations as a whole rather than on individual tourism enterprises. Thus, this research is both relevant and timely The methodology employed was qualitative, and data being collected using a 9-question interview guide. This guide underwent validation by experts, achieving a Cronbach's Alpha value of 0.7. In total, 30 individuals were interviewed: 5 civil servants, 9 company directors, 5 university professors, 6 researchers, and 5 entrepreneurs. Some notable findings include the importance of innovation for change, promoting sustainable tourism, fostering informal partnerships among regional companies, the essential role of government support, the benefits of flexible planning and service digitisation, and the ongoing need for training and upskilling.

Introduction

This research was conducted within the framework of the European TC-NAV Project. The project's aim is to develop a curriculum for Higher Education Institutions (HEIs), a vocational education and training package, open access educational resources, and an innovative learning application. All these elements are designed to assist tourism SMEs (Small and Medium-sized Enterprises) in gaining the necessary knowledge and management competencies to navigate and overcome crises and build resilience.

The primary outcome outlined in the TC-NAV Project, and the main objective of this research, relates to identifying the primary international needs in tourism crisis management for SMEs and serve as the foundation for the development of a competency framework, which in turn will be the starting point for:

1. Developing materials aligned with the other TC-NAV project objectives
2. Providing guidance on the use of project resources
3. Focusing efforts on specific challenges addressed within the TC-NAV project

[1] European University of the Atlantic, Santander, Spain, Universidad Internacional Iberoamericana, Campeche, Mexico, Email: emmanuel.soriano@uneatlantico.es, https://orcid.org/0000-0002-8747-5679
[2] Universidad Internacional Iberoamericana, Arecibo, Puerto Rico, USA, Fundación Universitaria Iberoamericana Colombia, Bogotá, Colombia, European University of the Atlantic, Santander, Spain, Email: thomas.prola@uneatlantico.es, https://orcid.org/0000-0002-1929-1659
[3] Icelandic Tourism Research Centre, Email: irish@rmf.is, https://orcid.org/0000-0002-5888-7068
[4] University of the Highlands and Islands, Emal: Steve.Taylor.whc@uhi.ac.uk, https://orcid.org/0000-0003-3386-1555

While business crises in general have been widely studied, notable gaps remain, particularly concerning the unique needs of tourism SMEs grappling with severe crises, especially in light of disruptions like Covid-19. Because SMEs in the tourism sector possess distinct characteristics and are notably vulnerable to crises, it's vital to approach their challenges with specialized solutions.

Literature Review

Running a tourism business involves a great deal of uncertainty. The history of tourism is replete with events that have instigated major shifts in both tourism supply and demand (Hall, 2010). Factors range from seasonal variations, volcanic eruptions, political instability, economic shifts, to wars and more. It's crucial for business leaders to mitigate the adverse impacts of such uncertainties and respond in ways that minimally harm their company, society, economy, and the environment.

Crisis has been defined as a "situation that individuals, groups or organisations must face that they cannot cope with using traditional business practices" (Booth, 1993): 85-86 in Cushnahan, 2004). As a result, companies have to resort to unconventional methods to survive.

The strategies employed can vary widely, and different crises necessitate different approaches Crises can manifest gradually, periodically, or suddenly, influenced by the intensity and duration of their effects (Backer & Ritchie, 2017; Ritchie & Jiang, 2019), dictating the requisite interventions. The uncertainty inherent in crises complicates all efforts and planning geared towards survival (Sharma, Leung, Kingshott, Davcik, & Cardinali, 2020).

Ritchie & Jiang (2019) reviewed 142 papers published between 1960 and 2018 on risk, crisis and disaster management in tourism. The papers were grouped into three main categories reflecting the main focus of the literature: 1) preparation and planning 2) response and recovery 3) resolution and reflection. The response and recovery category were the most frequent at 55%, preparation and planning followed at 13%, and a mere 6% fell under resolution and reflection. About 15% of the articles covered all these stages.

The last category centred on crisis-related organizational learning, knowledge management, and resilience at both business and destination levels. The limited representation of this category suggests a need for more research on the lessons tourism businesses and destinations derive from crisis scenarios. Articles under the response and recovery umbrella primarily delve into strategies from governmental, industrial/sectoral, and individual business standpoints. The preparedness and planning category emphasises crisis management planning and strategies.

Crisis management is the decisions and tactics companies take to avoid or minimise the effect of a crisis. The aim of crisis management is either to pre-empt the crisis or mitigate its impact, thereby reducing its adverse effects on the company's operations, revenue, or workforce (Santana, 2004).

Research in the coping strategies that businesses adopt in times of crisis prominently features studies on business resilience. In this context, business resilience typically denotes a business 's capability to endure, adapt, and maintain its operations amidst tumultuous changes (Ates & Bititci, 2011). Research on resilience focuses on three main elements: 1) adjustment capacity, 2) resilience and 3) adaptation. A detailed literature review by Hall, Prayag and Amore (2017) on tourism business resilience research states that there are three basic factors involved in tourism business resilience: human resources (personnel are important for business

resilience), processes (preparedness and planning) and networks (the collaboration capacity of stakeholders during crises) (Hall et al., 2017). Thus, academia has long concentrated on how the tourism sector manages and prepares for crises. However, given the multifaceted nature of tourism, scholarly discourse on tourism crises often leans more towards destinations in their entirety rather than individual businesses.

It's widely acknowledged that small businesses constitute a significant portion of the tourism industry. Furthermore, tourism SMEs are perceived as more crisis-vulnerable compared to their larger counterparts due to their restricted risk mitigation capacity. They're often perceived as lacking the comprehensive resources (financial or advisory) of bigger enterprises to address crises effectively (Cushnahan, 2004; Zeng, Carter and De Lacy, 2005).

With other businesses, improve individual crisis response, andHowever, their potential for flexibility and swift decision-making, pivotal for survival, often surpasses that of larger organizations (International Trade Centre, 2020, June; Irvine & Anderson, 2004). This flexibility is a key factor in the resilience of small businesses (Williams and Vorley, 2014). The ability of small businesses to be flexible and creative is an important factor in their resilience.

Methodology

The methodology employed is qualitative, involving 30 in-depth interviews with officials, managers, professors, researchers, and entrepreneurs across five countries: Ireland, Iceland, Germany, Scotland, and Spain. The TC-NAV project partners come from these 5 countries. Each partner carried out at least five interviews. The selection method was non-probabilistic random sampling, with a stipulation to select at least two experts from different fields. This was done to prevent focusing on a specific profile and to ensure a diversity of opinions.

Table 1: Profile of experts interviewed by country

Country	Officials	Company Director or Manager	Subject teacher	Researcher	Entrepreneur (SME owner)	Total
Ireland	3	2	0	1	0	6
Iceland	0	0	3	3	0	6
Germany	1	4	0	0	1	6
Scotland	1	2	0	0	2	5
Spain	0	1	2	2	2	7
Total	5	9	5	6	5	30

The results were collated and analysed to identify key themes derived from the questions. Additionally, selected quotes were incorporated to provide deeper insights and to highlight the perspectives of the participants. All responses were anonymous.

Instrument Creation and Validation

Each partner proposed a minimum of 15 questions. Through expert consensus and using Cronbach's Alpha, the instrument was then validated with an internal consistency of 0.7, which means that the instrument is reliable. Below are the questions from the applied interview guide:

1. Can crises represent an opportunity for innovation or a different approach?

2. Could closer cooperation, for example with other businesses, improve individual crises response and, if so, how?

3. Are you aware of any strategies or examples from other regions that can assist tourism businesses during crises?

4. To what extent is the tourism sector prepared for crises?

5. If a major crisis, such as Covid-19, were to happen again, would tourism businesses be better prepared to respond than before the pandemic?

6. Thinking beyond Covid-19, what other types of crises can substantially affect tourism businesses?

7. What unique challenges can a crisis introduce to the tourism industry? Are certain sub-sectors, such as lodging, hospitality, or experience providers, more adversely affected?

8. Are there any regional nuances, particularly any distinctions between urban and rural settings?

9. Are you familiar with any existing courses or training materials on crisis management? Have you utilized them? If so, have they been useful? Why or why not?

Results and Discussion

The analysis that follows delves deeply into the responses from experts, civil servants, researchers, professors, and tourism SME entrepreneurs. Regarding whether crises can offer a chance to innovate or pivot, the majority of respondents believed that such opportunities stemmed from enforced changes in business models or operating protocols due to the crisis.

Many even opined that the Covid crisis might have an ultimately positive impact on businesses, as the forced adaptations fostered flexibility, innovation, and creativity. It also offered them a chance to restructure or pursue ventures they hadn't previously considered. Research suggests that business model innovation can bolster the performance of tourism companies during challenging periods (Breier et al., 2021; Cheah, Ho, & Li, 2018; Kraus et al., 2020). During crises, the foundational business models of companies are often disrupted Formulating innovative (Veliz-Cuba et al,.2022) business models might be a part of the solution for adapting and emerging from such crises (Kraus et al., 2020).

A Scottish interviewee expressed that while a crisis should not be leveraged as an excuse for change, occasionally, dramatic disruptions can lead to epiphanies about the necessity for change.

Notably, many viewed the forthcoming decline of numerous tourism enterprises as a potential boon for emerging entrepreneurs. Traits typical of entrepreneurs are especially valuable during crises. Characterized by specific behaviours, entrepreneurs often embody resilience attributes. A proactive, flexible, and resilient entrepreneur can positively influence their business's robustness (Branicki et al., 2018).

Many highlighted the pivot to digitalisation as a prime opportunity. However, there was also a sentiment that one company's opportunity could spell disaster for another if the latter wasn't primed for such a shift. An Icelandic respondent highlighted a company transitioning to digital tourism, capitalising on the current trend and its workforce to modernize a traditionally operated agency. Sustainable tourism, in terms of growth and environmental impact, was

another recurrent topic. While there was consensus about the presence of opportunities, some dissent was noted: A German interviewee remarked, "I don't see any real opportunities for our industry." Others perceived opportunities but believed external assistance was crucial for their realization: "It's an incredibly nice idea to make a list of what we want the tourism industry to look like when it starts up again after Covid. But who is going to do it?" said an interviewee from Iceland. An Irish respondent expressed a wish for more proactive governmental support to seize these opportunities.

In response to the proposition of leveraging collaborations with other businesses for enhanced crisis management, many underscored the value of informal collaborations, primarily focused on mutual support and information dissemination. One German interviewee illustrated this sentiment, stating, "We catch up on who has information, on what might be planned."

However, some interviewees believed that these partnerships often lacked clear direction, potentially attributed to the absence of leadership within the collaborating entities. "It would have been very useful, especially if we could have talked and decided what to do after the news announcements," said one interviewee from Ireland (Oliveira et al,.2022).

Often, a business's resilience during crises hinges on its relational networks. Interpersonal and inter-business relationships are pivotal for effective crisis navigation. Businesses operate within societal frameworks, and their stakeholders, like managers and staff, are intertwined with larger societal networks. Being part of a wider network can be instrumental in tapping into social capital to attain objectives. The idea behind social capital is that networks can be an asset for accessing important resources (Bourdieu, 1986). In a crisis, companies often rely on established partnership survive and rebuild. Being socially integrated offers access to the necessary resources for revitalization and recovery (Zhang et al,.2017).

Cooperation in competition can be important for improving business performance (Peiró-Signes, Segarra-Oña, Miret-Pastor, & Verma, 2014). Cluster theory takes the idea of relationships to imply that competing businesses can, through collaborations, improve their performance. Porter (2000, p. 15) defines a cluster as a "Geographical concentration of interconnected firms, specialized suppliers and service providers, firms in related industries, and associated institutions in particular fields that compete but also cooperate" (p.) . In crisis

scenarios, clusters can provide distinct advantages, such as improved access to essential resources (Skalholt and Thune, 2014).

A recurring element in successful collaborations was their organic formation, with organisations naturally joining forces to support, communicate with, and learn from one another. "It was beneficial once they began discussing the problem," noted an interviewee from Scotland.

When asked about examples or experiences from other places that might aid tourism businesses in crisis management, several unique responses were received:

• Owners repurposing their facilities for entirely different businesses

• People working on different projects

• Use of free time for community projects

• Food industries diversifying into take-away, delivery or targeting new customers
Some of these responses are worth quoting directly:

"We engaged in numerous Zoom calls and training but lacked guidance on seizing opportunities or making a suitable response," commented a respondent from Ireland. In

contrast, another from Germany stated: "We exchange ideas, but this is of no use in the current situation. In the end it's every man for himself," said one interviewee from Ireland.

General responses included:

• Changing customer relationship methods

• Use of e-commerce

• Digitisation

• Broadening the company's geographic reach through online platforms

• Creative adaptation of products

"Many organizations have significantly elevated their engagement and creativity levels with their members," an interviewee from Scotland noted, while another from Iceland said: "It's a lot of fun because i people in tourism are generally extremely creative. They remain creative despite difficulties".

Some feedback concentrated on the perceived effectiveness or shortcomings of governmental actions. A respondent from Spain felt that foreign countries offered better support to their tourism sectors. Meanwhile, a couple of Scottish respondents believed their government had formulated a commendable plan.

Regarding the tourism sector's preparedness for the crisis, the feedback was polarized, spanning from very positive to extremely negative. Several plainly stated the preparation was "abysmal." An Irish respondent articulated, "much was overlooked," echoed by another from Scotland. Conversely, some saw evidence of resilience and historical adaptability: "The tourism sector has faced health crises before and the data shows that tourism has not only survived, but has recovered," said a respondent from Spain.

Optimistic feedback emphasized the sector's diverse business nature, demand seasonality, rapid response to shifts in demand, and the enduring human yearning to travel. An Icelandic respondent believed: "But people are incredibly prepared for a crisis because of this flexibility. I think it is due to seasonality. This flexibility in operations and a risk-tolerant investment approach due to seasonal variances is notable.

On the other hand, some criticisms pointed to specific accounting practices that compromised resilience. A respondent from Germany stated: "Now that many customers are cancelling their trips, deposits need to be refunded. Many colleagues are not in a position to do so. They have no reserves and have already spent their money". Yet, alongside these challenges, human resilience emerged as a silver lining. Resilient employees are considered to be better equipped in navigating a turbulent and stressful workplace (Hall et al., 2017). Firms that prioritize flexibility, support, and the well-being of their workforce are more adept at crisis management (Hall et al., 2017; Prayag, Spector, Orchiston, & Chowdhury, 2020).

Employee resilience refers to the "ability of employees, bolstered and supported by their organisation, to use resources to cope, adapt and thrive positively in response to changing work circumstances" (Näswall et.al., 2015 in Tonkin et al., 2018, pp. 8-9). Such employees can be proactive problem-solvers, leveraging both personal and professional networks, which are vital during tumultuous periods. Their capacity and authority to be able to respond effectively to a crisis is important (Gámez, Ivanova, & Campiranon, 2014; Lee, Vargo, & Seville, 2013). Moreover, open communication between employees and management in times of crisis is an important factor for the survival of companies (Mansour, Holmes, Butler, & Ananthram,

2019). In turbulent times, it is essential to prioritize maintaining employment relationships over Regarding the next question on whether companies are ready in case of another major crisis like Covid-19, the general view of the interviewees was that they were not best placed to answer, but that perhaps the simple experience of having gone through the Covid-19 crisis had created some self-learning. "Basically, you should always try to learn from crises and prepare accordingly. But it is difficult to prepare for the unpredictable," said an interviewee from Germany.

Conversely, there's growing concern that the sector, due to its current financial constraints, might be even more susceptible than before. "The sector is under immense financial strain, with many businesses teetering on the brink of collapse. Their primary challenge is to stay solvent. Presently, garnering substantial reserves or seeking additional resources is nearly impossible due to limited financial capacity and stamina," observed a respondent from Scotland.

As we have previously stated, a crisis often presents scenarios that businesses can't manage using conventional operational methods (Booth, 1993): 85-86 in Cushnahan, 2004). Thus, it becomes imperative for companies to harness creativity and innovation during crises, ensuring they can navigate complex and unfamiliar challenges (Branicki, Sullivan-Taylor, & Livschitz Sarah, 2018).

To cope and rebuild in a crisis, it isn't always about introducing new products or services. Different types of innovation can be valuable. An array of innovative measures can synergise, propelling subsequent innovations and mitigating the impacts of uncertainty on business performance (Verreynne, Williams, Ritchie, Gronum and Betts, 2019).

Regarding the subsequent question about other crises that might significantly impact tourism businesses besides Covid-19, the feedback was categorized into five domains:

- Air conditioning
o Climate change
o Natural disasters
- Transport
o Travel regulations, bans or restrictions
o Border controls, Brexit
o Costs
- Man-made
o Financial crisis
o World War
o Terrorism
o Political downfall
- Zoonotic diseases/ drug resistant bacteria
- Unsustainable rapid growth of tourism

Tourism is an activity particularly susceptible to the effects of climate change. Some types of

tourism (sun and beach, snow, big cities) are highly vulnerable to global warming, and its associated processes. Rising temperatures and decreased precipitation have been the primary mediums through which the effects of climate change have manifested, especially in mid-latitudes, and notably in the Mediterranean region (Olcina, 2012).

When the subsequent question addressed specific challenges for different tourism areas, many participants voiced concerns about staff loss or the looming threat of it in various sectors. This is believed to potentially affect quality assurance or hinder hiring when businesses resume. A notable point of concern was the perceived lack of foresight and planning by tourism companies. Efficient response and continuity during calamities hinge upon proactive planning. Implementing the right strategies can mitigate the fallout of crisis events. However, research has shown that many tourism businesses are not well prepared for crises (Anderson, 2006; Coles, 2003; Volo, 2008).

A number of models and frameworks have been developed for tourism crisis and disaster management (Paraskevas & Arendell, 2007; Ritchie, 2004; Stafford, Yu, & Kobina Armoo, 2002). Faulkner (2001) developed a widely cited tourism disaster management framework. This framework underscores the necessity of collaboration and comprehensive discussions among various tourism stakeholders. However, it's been highlighted that small-scale businesses ought to be included in the conversation around tourism crisis planning, as existing models might not cater to their unique needs (Cioccio & Michael, 2007).

Academics have struggled to understand the lack of preparedness and planning within the tourism industry. Several reasons underpin this gap, including, notably, time and resource constraints, especially in smaller enterprises (Ritchie & Jiang, 2019). Prominent research topics include risk perception among tourism entrepreneurs and preparedness strategies (Lihui, Hayashi, & Dun, 2019; Orchiston, 2013; Prideaux, 2004) and even the potential to predict impending crises (Paraskevas & Altinay, 2013).

However, some findings suggest that certain tour operators don't view disaster planning as integral. Especially if they have few encounters with disasters/crisis (Prideaux, 2004). Several factors, such as age, gender, education, psychological aspects, and learning from past incidents, influence disaster readiness. Thus, those who have experienced crises are considered to be better prepared for the next incident (Ghaderi, Som and Wang, 2014).

In additional feedback on unique challenges faced by the tourism sector, a recurring theme was the anxiety over losing markets and the uphill task of re-establishing these connections. The consensus was that entities or nations reliant on foreign tourists would face the most significant market loss. Because Spain is so dependent on international tourism, this has had a profound effect, said an interviewee from Spain.

From a financial point of view, smaller, perhaps rural-based accommodation businesses, seem to have coped better due to reduced overheads, flexibility, and their ability to run at full capacity during momentary easing of restrictions. "The hotels in the capital area in particular. Their challenges are much greater than perhaps the smaller hotels in rural areas" said one interviewee from Iceland. Another from Scotland observed that "A smaller organisation is more agile: we can accept bookings as and when, because our initial outlay is not as big."

Specific sub-sectors that were found to be disproportionately affected include:

- Travel agencies

- Sea voyages

- Residential sectors

- Business travel companies

- Recreational tourism

The post-Covid-19 environment is seen as an emerging opportunity to reshape the global tourism system in alignment with the UN's 2030 Sustainable Development Goals (SDGs). A post-pandemic surge in this sector is anticipated. Traditional travel agencies are being left out of this trend and may be the most affected business type (García & Ruíz, 2020).

Concerning the subsequent question on regional distinctions, there was a general presumption that rural businesses tend to be smaller, while urban ones are larger. Regarding the impact of COVID-19, there was no consensus as to whether urban or rural areas were more affected.

Rural regions, known for pronounced seasonal tourism shifts, were perceived to have the capacity to weather complete shutdowns and then pivot to cater to new domestic markets upon the easing of restrictions. However, the lower population density means difficulties in finding staff and a lower influx into local markets. Rural areas also grapple with connectivity issues, be it inferior internet access or limited transport links.

An interviewee from Iceland observed that "When it comes to larger companies, there are often more assets. Burning assets are a buffer before the effects start to have a more direct effect on homeowners. But there are examples where homeowners have had to mortgage their house to cover this fire. And when it comes to the larger companies, they have considerable assets that they can counterbalance. Even though their losses might be substantial, the personal toll on the owner isn't direct."

Larger urban entities usually boast more resources and easier financial access, but they also shoulder heftier operational expenses. Discrepancies in the crisis's direct toll on individuals seemed to pivot around the urban-rural divide. As smaller rural firms are often owner-operated, the financial repercussions of closures hit harder and resonate more within the community.

Reduced population densities typically correlated with fewer infection cases. However, as businesses resume and attract more visitors, there's apprehension over potential spikes in infections. Interestingly, the pandemic has cultivated a growing scepticism towards urban areas, with many now gravitating towards more rural or sparsely populated destinations.

The measures executed by tourism entities during this tumultuous period carry profound implications, especially in rural regions. However, the bulk of the research on tourism's response and recovery leans towards urban settings (Ritchie & Jang, 2019).

And with regard to training, addressed in the final question, most participants confessed their unfamiliarity with available training materials and usually turned to the internet for guidance. An Icelandic participant, while acknowledging the available training, critiqued the flawed discourse on available assistance on social media platforms.

The mentioned trainers or training courses include:

- The University Institute of Tourism and Sustainable Economic Development, affiliated with the University of Las Palmas de Gran Canaria, published insights into the performance of global tourist destinations amidst the COVID-19 crisis, from Spain

- BCN Safe City, BCN Safe Visit to Spain

- Turisme de Barcelona: training modules on health and safety, Spain

- Tourism of the Generalitat: online sessions on change management, from Spain

- Business Gateway: crisis management events, from Scotland

- Highlands and Islands Enterprise, Scotland

- ABTA: workshops on staff mental health support, Scotland

- PHAROS: crisis training and crisis management webinars, from Scotland

- Wild Scotland/Visit Scotland: scenario planning, from Scotland

- For Small Iceland: business consultancy firm, from Iceland

- The Icelandic Travel Industry Association (SAF), Iceland

- Ratsjáin, Iceland

In summing up the research, tourism SMEs that exhibited resilience, innovativeness, and exploited available resources stood their ground during crises. Most responses underscore the significance and relevance of the TC-NAV project for myriad SMEs throughout Europe. Vocational training emerges as a cornerstone in expertly navigating crises, a sentiment echoed by expert feedback. While the TC-NAV project was conceived in response to BREXIT's ripple effects on tourism SMEs, COVID-19's enduring impact has overshadowed it in respondents' perceptions. Broadening the research scope to include pivotal nations like England, France, Italy, and Germany would be beneficial. Nonetheless, the findings from the surveyed countries provide a robust foundational insight for the TC-NAV project.

References

Anderson, B. A. (2006). Crisis management in the Australian tourism industry: Preparedness, personnel and postscript. *Tourism Management, 27*(6), 1290-1297. doi: 10.1016/j.tourman.2005.06.007

Ates, A., & Bititci, U. (2011). Change process: a key enabler for building resilient SMEs. *International Journal of Production Research, 49*(18), 5601-5618. doi:10.1080/00207543.2011.563825

Backer, E., & Ritchie, B. W. (2017). VFR Travel: A Viable Market for Tourism Crisis and Disaster Recovery? *International Journal of Tourism Research, 19*(4), 400-411. doi:https://doi.org/10.1002/jtr.2102

Bourdieu, P. (1986). The Forms of Capital. In J. Richardson (Ed.), *Handbook of Theory and Research for the Sociology of Education* (pp. 241-258). Westport, CT: Greenwood.

Branicki, L. J., Sullivan-Taylor, B., & Livschitz Sarah, R. (2018). How entrepreneurial resilience generates resilient SMEs. *International journal of entrepreneurial behaviour & research, 24*(7), 1244-1263. doi:10.1108/IJEBR-11-2016-0396

Breier, M., Kallmuenzer, A., Clauss, T., Gast, J., Kraus, S., & Tiberius, V. (2021). The role of business model innovationin the hospitality industry during the COVID-19 crisis. *International Journal of Hospitality Management, 92*. doi: 10.1016/j.ijhm.2020.102723

Cioccio, L., & Michael, E. J. (2007). Hazard or disaster: Tourism management for the inevitable in Northeast Victoria. *Tourism Management, 28*(1), 1-11. doi: 10.1016/j.tourman.2005.07.015

Cushnahan, G. (2004). Crisis Management in Small-Scale Tourism. *Journal of Travel & Tourism Marketing, 15(4), 323-338. doi:10.1300/J073v15n04_06*

Cheah, S., Ho, Y.-P., & Li, S. (2018). Business model innovation for sustainable performance in retail and hospitality industries. *Sustainability, 10*(11), 3952.

Coles, T. (2003). A local reading of a global disaster: Some lessons on tourism management from an Annus Horribilis in South West England. *Journal of Travel and Tourism Marketing, 15*, 173-197.

Gamez, A., Ivanova, A., & Campiranon, K. (2014). Tourism and economic crisis management within apec. cases: Phuket (THAILAND) and los cabos (MEXICO)1. *International Journal of Sustainable Development and Planning, 9*(2), 143-157.doi:10.2495/SDP- V9-N2-143-157

García, J. R., & Ruíz, R. P. (2020). towards a more sustainable tourism after covid-19? Perception of Spanish travel agencies. *Grand tour, journal of tourism research*, (21)

Ghaderi, Z., Som, A. P. M., & Wang, J. (2014). Organisational Learning in Tourism Crisis Management: An Experience from Malaysia. *Journal of Travel & Tourism Marketing, 31*(5), 627-648. doi:10.1080/10548408.2014.883951

Hall, C. M. (2010). Crisis events in tourism: subjects of crisis in tourism. *Current Issues in Tourism, 13*(5), 401-417. doi:10.1080/13683500.2010.491900

Hall, C. M., Prayag, G., & Amore, A. (2017). *Tourism and resilience: Individual, organisational and destination perspectives*: Channel View Publications.

Irvine, W., & Anderson, A. R. (2004). Small tourist firms in rural areas: agility, vulnerability and survival in the face of crisis. *International journal of entrepreneurial behaviour & research*.

Kraus, S., Clauss, T., Breier, M., Gast, J., Zardini, A., & Tiberius, V. (2020). The economics of COVID-19: initial empirical evidence on how family firms in five European countries cope with the corona crisis. *International journal of entrepreneurial behaviour & research, 26*(5), 1067-1092. doi:10.1108/ijebr-04-2020-0214

Lee, A., Vargo, J., & Seville, E. (2013). Developing a Tool to Measure and Compare Organisations' Resilience. *Natural Hazards Review, 14*, 29-41. doi:10.1061/(ASCE)NH.1527-6996.0000075

Lihui, W., Hayashi, H., & Dun, W. (2019). Tourism sector preparedness in zones with a high seismic risk: A case study of the capital region of Japan. *International Journal of Safety and Security Engineering, 9*(2), 166-181. doi:10.2495/SAFE-V9-N2-166-181

Mansour, H. E. L., Holmes, K., Butler, B., & Ananthram, S. (2019). Developing dynamic capabilities to survive a crisis: Tourism organisations' responses to continued turbulence in Libya. *International Journal of Tourism Research, 21*(4), 493-503. doi:10.1002/jtr.2277

Olcina, J. (2012). Tourism and climate change: a vulnerable activity that must adapt.

Orchiston, C. (2013). Tourism business preparedness, resilience and disaster planning in a region of high seismic risk: the case of the Southern Alps, New Zealand. *Current Issues in Tourism, 16*(5), 477-494. doi:10.1080/13683500.2012.741115

Oliveira, H. M., Stall, J., Coelho, K. M., Silva, V. C., & Franca, P. H. (2022). Evaluation of TP53 Gene Expression in Patients with Childhood Cancer in Northeast Santa Catarina, Brazil. *Jornal Brasileiro de Patologia e Medicina Laboratorial, 58*. doi:10.1900/JBPML.2022.58.448

Paraskevas, A., & Altinay, L. (2013). Signal detection as the first line of defence in tourism crisis management. *Tourism Management, 34*, 158-171. doi:https://doi.org/10.1016/j.tourman.2012.04.007

Paraskevas, A., & Arendell, B. (2007). A strategic framework for terrorism prevention and mitigation in tourism destinations. *Tourism Management, 28*(6), 1560-1573. doi: https://doi.org/10.1016/j.tourman.2007.02.012

Peiro-Signes, A., Segarra-Ona, M., Miret-Pastor, L., & Verma, R. (2014). The Effect of Tourism Clusters on U.S. Performance Hotel. *Cornell Hospitality Quarterly*. doi:10.1177/1938965514557354

Porter, M. E. (2000). Location, competition, and economic development: Local clusters Verreynnein a global economy. *Economic Development Quarterly, 14*(1), 15-34.

Prayag, G., Spector, S., Orchiston, C., & Chowdhury, M. (2020). Psychological resilience, organisational resilience and life satisfaction in tourism firms: insights from the Canterbury earthquakes. *Current Issues in Tourism, 23*(10), 1216-1233. doi:10.1080/13683500.2019.1607832

Prideaux, B. (2004). The Need to Use Disaster Planning Frameworks to Respond to Major Tourism Disasters. *Journal of Travel & Tourism Marketing, 15*(4), 281-298. doi:10.1300/J073v15n04_04

Ritchie, B. W. (2004). Chaos, crises and disasters: a strategic approach to crisis management in the tourism industry. *Tourism Management, 25*(6), 669-683. doi: 10.1016/j.tourman.2003.09.004

Ritchie, B. W., Bentley, G., Koruth, T., & Wang, J. (2011). Proactive Crisis Planning: Lessons for the Accommodation Industry. *Scandinavian Journal of Hospitality and Tourism, 11*(3), 367-386. doi:10.1080/15022250.2011.600591

Ritchie, B. W., & Jiang, Y. W. (2019). A review of research on tourism risk, crisis and disaster management: Launching the annals of tourism research curated collection on tourism risk, crisis and disaster management. *Annals of Tourism Research, 79*.doi: UNSP 10281210.1016/j.annals.2019.102812

Sharma, P., Leung, T. Y., Kingshott, R. P., Davcik, N. S., & Cardinali, S. (2020). Managing uncertainty during a global pandemic: An international business perspective. *Journal of Business Research, 116*, 188-192. Retrieved from https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7247500/pdf/main.pdf

Santana, G. (2004). Crisis Management and Tourism. *Journal of Travel & Tourism Marketing, 15*(4), 299-321. doi:10.1300/J073v15n04_05

Skalholt, A., & Thune, T. (2014). Coping with Economic Crises-The Role of Clusters. *European Planning Studies, 22*(10),1993-2010. doi:10.1080/09654313.2013.813909

Stafford, G., Yu, L., & Kobina Armoo, A. (2002). Crisis management and recovery how Washington, D.C., hotels responded to terrorism. *The Cornell Hotel and Restaurant Administration Quarterly, 43*(5), 27-40. doi:https://doi.org/10.1016/S0010-8804(02)80054-4

Thorgren, S., & Williams, T. A. (2020). Staying alive during an unfolding crisis: How SMEs ward off impending disaster. *Journal of Business Venturing Insights, 14*, e00187. doi:https://doi.org/10.1016/j.jbvi.2020.e00187

Tonkin, K., Malinen, S., Naswall, K., & Kuntz, J. C. (2018). Building employee resilience through wellbeing in organisations. *Human Resource Development Quarterly, 29*(2), 107-124.

Verreynne, M.-L., Williams, A. M., Ritchie, B. W., Gronum, S., & Betts, K. S. (2019). Innovation diversity and uncertainty in small and medium sized tourism firms. *Tourism Management, 72*, 257-269. doi:https://doi.org/10.1016/j.tourman.2018.11.019

Volo, S. (2008). Communicating Tourism Crises Through Destination Websites. *Journal of Travel & Tourism Marketing, 23*(2-4), 83-93. doi:10.1300/J073v23n02_07

Veliz-Cuba, A., Voss, S. R., & Murrugarra, D. (2022). Building model prototypes from time-course data. *Letters in Biomathematics*, 2022.2001. 2027.478080.

Williams, N., & Vorley, T. (2014). Economic resilience and entrepreneurship: lessons from the Sheffield City Region. *Entrepreneurship & Regional Development, 26*(3-4), 257-281.

Zeng, B., Carter, R. W., & De Lacy, T. (2005). Short-term perturbations and tourism effects: The case of SARS in China. *Current Issues in Tourism, 8*(4), 306-322.

Zhang, J., Chen, Y., & Li, Y. (2017). Analysis of genetically modified food induced international trade law issues. *Journal of Commercial Biotechnology*, *23*(1), 17-24. DOI: https://doi.org/10.5912/jcb774