From complexity to evolution: Mapping resilience management practices in the hospitality industry during the COVID-19 crisis

Osman Ahmed El-Said [a,b,*], Michael Smith [a], Yasser Al-Yafaei [a], Shekha Aal Abdul Salam [a]

[a] *Department of Logistics, Tourism, & Service Management, Faculty of Business and Economics, German University of Technology in Oman (GUtech), Oman*
[b] *Department of Hotel Management, Faculty of Tourism and Hotels, Alexandria University, Egypt*

ARTICLE INFO

ABSTRACT

The COVID-19 pandemic has severely affected the hospitality industry. Many have treated the crisis as a temporary shock. However, there are those who see it as a turning point. Treating the hospitality industry as a complex adaptive system, this research uses the organizational resilience framework to investigate how hospitality organizations responded to the crisis. A mixed methods approach was employed, and two studies were conducted. A sample of managers from Omani hotels were interviewed and a content analysis was performed on the websites and annual reports of a sample of international hotel brands. The results revealed that the Omani industry's response was mostly limited to coping, whereas the international industry was active in anticipating, coping, and adapting to the pandemic. Strong support is provided for the notion of the pandemic as a turning point. An action framework has been developed to support firms in keeping pace with the industry's evolution.

1. Introduction

When viewed through the lens of complex adaptive systems theory, the hospitality industry can be appreciated as a vast web of interrelated organizations, where the actions of a single firm can ripple across local markets and affect organizations across the globe. In the last decade, this web has been rapidly and steadily expanding, to the point that the hospitality industry represents one of the major pillars of the global economy (Singal, 2015). However, much of the industry's activity is geared towards offering "non-essential" recreational and leisure experiences. This makes hospitality an inherently fragile industry that is especially susceptible to market disruptions (Foroudi et al., 2021). The COVID-19 pandemic represents one such disruption. First reported in Wuhan, China, in December 2019, the virus quickly spread to the rest of the world, with over one million confirmed infections by April 2020 (WHO, 2022). The effects on the hospitality industry were disastrous, and businesses everywhere faced dwindling revenues (Baum and Hai, 2020; Clark et al., 2021). Determined to get the industry back on track, many have called out to the academic community to develop practical solutions to help businesses recover from the crisis (e.g., Sigala, 2020).

In response, researchers have been quick to investigate the effects of the pandemic on hospitality businesses in various locations (e.g., Abhari et al., 2021; Altuntas and Gok, 2021; Gupta and Sahu, 2021; Ntounis et al., 2022). Yet, research examining the reactions of hospitality organizations in the Arab Gulf states has been quite limited (e.g., Vij et al., 2021). This is especially the case for the Sultanate of Oman, which has only recently targeted hospitality as a major economic sector. Similarly, there has been much less dedicated examination of international hospitality firms. While they have been included or targeted in investigations focusing on specific destinations (e.g., Bonfanti et al., 2021; Hahang et al., 2022), most of these studies have examined individual properties in isolation from their brands, neglecting the international contexts that define them. This lack of attention is curious, given that such organizations are arguably more capable (Meira et al., 2019) and have a wider impact (Sheresheva et al., 2018) than individual properties in specific destinations.

Much of the early research on the pandemic's effects on the hospitality industry has concentrated on the negative impacts and firm reactions (e.g., Aigbedo, 2021; Baum and Hai, 2020). Often, these studies have treated the pandemic as a temporary shock (e.g., Abhari et al., 2021; Ntounis et al., 2022), assuming an eventual return to normality. So far, few studies have considered the COVID-19 pandemic as a turning

point for the hospitality industry (e.g., Cuomo et al., 2022; Nofre et al., 2020). One with permanent, systemic changes requiring fundamental transformations to firm structure and behavior. Similarly, many preceding studies have sought to support firms' recovery by proposing strategies for returning to pre-crisis conditions (e.g., Garrido-Moreno et al., 2021; Sobiah et al., 2021). Yet, if COVID-19 does represent a turning point, such advice may be ineffective in improving firm performance. As such, it is critical that managers and owners are provided with a roadmap for re-shaping and re-positioning their organizations appropriately.

According to Miles' (2017) taxonomy, the limited attention given to the COVID-19-related responses of the hospitality industry in the Arab Gulf states and the lack of research on the reactions of international hospitality firms to the COVID-19 virus both represent population research gaps. In addition, the scarcity of studies discussing the potential long-term effects of the pandemic on the hospitality industry represents a theoretical research gap. Moreover, as the long-term perspective has been neglected, scarcely any resources have been developed to support hospitality business owners and managers prepare for potentially permanent changes to the industry. To address these gaps, this research paper adopts four questions:

1) "How has the Omani hospitality industry responded to the COVID-19 crisis?".
2) "How has the international hospitality industry responded to the COVID-19 crisis?".
3) "How has the COVID-19 crisis led to an evolution in the hospitality industry?".
4) "How can hospitality firms keep up with the industry-wide changes brought on by the COVID-19 pandemic?".

Duchek's (2020) organizational resilience construct is a useful framework for answering these questions. It uses a process-oriented approach for identifying an organization's responses to a crisis, differentiating between the actions taken to anticipate, cope with, and adapt to a disruptive event. As such, the construct allows for a clear distinction to be made between the short-term survival strategies of an organization and its permanent transformations. At the same time, complex adaptive systems theory provides an effective lens to understand how the pandemic-related actions taken by individual firms affect the relationships between different actors, change the structure of the market, and reshape the industry as a whole.

In this research paper, we intend to use the organizational resilience construct to measure the hospitality industry's responses to the COVID-19 pandemic in two separate studies. The first will be a qualitative exploratory study on a sample of managers from hotels in the Sultanate of Oman, and the second will be a content analysis of the websites and annual reports from a sample of international hotel brands. In this way, the first and second research questions will be answered from the direct results of the first and second studies, respectively. Then, the third and fourth research questions will be answered by isolating and consolidating the long-term changes and adaptations identified in the results of both studies.

Consequently, this research paper will have four main contributions. First, by shedding light on the situation in a country and a region that has so far been overlooked, this research will bring new knowledge to the growing body of literature on the effects of the pandemic. Second, by examining how international organizations have responded to the pandemic, this research will paint a more complete picture of how different types of hospitality organizations have dealt with the disruptions caused by the COVID-19 virus. Third, by exploring the potentially long-lasting ramifications of the pandemic on the hospitality industry, this research will present the crisis from an original angle and, therefore, make a valuable theoretical contribution. Fourth, by developing an action framework based on the pandemic-induced adaptations identified in the results, this research will provide recommendations to guide

hospitality firms in adjusting to the systemic changes caused by the crisis and, therefore, make a valuable contribution to managerial practice.

2. Literature review

2.1. Complex adaptive systems and the hospitality industry

It is generally accepted that a system is simply a set of parts that relate to each other in some way (Hall and Fagen, 2017). In a complex adaptive system, these parts behave autonomously and with local knowledge only and are therefore treated as "agents" (Carmichael and Hadžikadić, 2019). These agents tend to be highly interconnected and interdependent. For this reason, the structure and behavior of complex adaptive systems are difficult to explain and predict (Thurner et al., 2018). Complex adaptive systems exhibit signs of self-organization, non-linearity, and adaptation (Fieguth, 2017). Self-organization refers to the spontaneous emergence of system-wide patterns, despite an apparent lack of central control and coordination (Carmichael and Hadžikadić, 2019). Non-linearity concerns the unpredictable and disproportionate effects that minor changes can have on entire systems (Fieguth, 2017). Adaptation denotes the ability to adjust to changing conditions and learn (Carmichael and Hadžikadić, 2019). Feedback loops are a noteworthy mechanism within complex adaptive systems, where outputs are recirculated back into the system as inputs (Thurner et al., 2018).

Researchers have previously treated the tourism and hospitality industries as complex adaptive systems (e.g., Hartman, 2018; Yang et al., 2019). These studies highlight how, altogether, the individual businesses that compose these industries exhibit dynamic economic and spatial effects. In this regard, the hospitality industry can be appreciated as a complex adaptive system from two different viewpoints. An individual property can be an agent in a local destination and an international brand can be an agent in the global hospitality market.

At the local level, firm decisions are purely self-serving (Liu, Tong et al., 2021). Likewise, firms compete and cooperate with other hospitality firms (Xu and Gursoy, 2015). Moreover, it can be argued that a locality is more attractive to consumers if it has a greater concentration of different hospitality organizations (Rodríguez-Victoria et al., 2017). The same forces that motivate individual properties transcend to the international level. Managers act in a way that benefits the financial health of their brand (Brida et al., 2015). International brands compete and collaborate with other international brands (Ge et al., 2018). Brands seek to mimic or differentiate themselves from others (Lam et al., 2015). Therefore, they are autonomous, interconnected, and interdependent. Self-organization is represented by business associations (Buhalis and Leung, 2018), non-linearity by the market effects of new entrants (Brida et al., 2015), adaptation by the distinctions between agents in different destinations (Lado-Sestayo et al., 2016), and feedback by the recirculation of revenues into a firm (Ding et al., 2022).

2.2. Crisis management and organizational resilience in the hospitality industry

A crisis is an adverse event that seriously and urgently endangers the basic and life-sustaining structures of a system (Boin et al., 2018). Crisis management is typically approached as a process involving the three stages of pre-crisis, crisis, and post-crisis (Coombs and Laufer, 2018). With respect to crisis management in organizations, the organizational resilience framework has been highlighted by researchers (e.g., Bundy et al., 2017). Although its definition and conceptualization has received diverse treatment, it is largely accepted that organizational resilience refers to the way in which organizations successfully respond to disruptions (Hillmann and Guenther, 2021). In keeping with the crisis management literature, Duchek (2020) presents a process-oriented model for organizational resilience that involves the three successive stages of anticipation, coping, and adaptation.

The emergency plan is perhaps the most basic procedure that a hospitality organization can develop in ***anticipation of a crisis***. It outlines the immediate steps to be taken to protect the safety of customers and employees in the face of a dangerous situation (Fang et al., 2020). Hospitality organizations prepare for emergencies by applying the emergency plan in regular practice exercises (Chandrasekera and Hebert, 2018). The contingency plan and the crisis management plan are anticipatory measures that are frequently employed by hospitality organizations (Ghaderi et al., 2021). It is recommended that crisis management teams are appointed, and that staff are given crisis management training in advance of any disruptive events (Liu et al., 2015). Furthermore, it is suggested that stakeholder perspectives be included in all anticipatory planning activities (Leta and Chan, 2021).

With respect to the COVID-19 pandemic, previous researchers have reported that the hospitality industry had an overall low level of preparedness (e.g., Yacoub and ElHajjar, 2021). For those enterprises that did prepare for the pandemic, building cash reserves was the most frequently mentioned activity (Atsız and Cifci, 2021; Bressan et al., 2022; Shukla et al., 2022). In addition to this, as Sobaih et al.'s (2021) study suggests, some hospitality enterprises anticipated the COVID-19 virus by monitoring for early-warning signs, testing emergency plans, setting crisis priorities, and planning for the unexpected.

Planning continues to be an important crisis management activity even after a crisis has already begun. Organizations develop long-term ***coping strategies*** (Pappas and Brown, 2020) and set small targets to direct efforts towards the most salient challenges (Fang et al., 2020). Hospitality organizations tend to focus on reducing costs, and maintaining revenues during times of crisis (Leta and Chan, 2021). Shortening the working week and repositioning manpower are creative ways of reducing costs and launching festivals and limited one-off events are creative ways of maintaining revenues (Broshi-Chen and Mansfeld, 2021; Fang et al., 2020; Pappas, 2015). It is recommended that hospitality organizations look to their emotional, professional, and institutional social networks for resources (Coles et al., 2021), and maintain communication with guests through social media (Liu et al., 2015) during crises. Hospitality organizations also tend to engage in socially responsible activities during crises (Leta and Chan, 2021), by making financial contributions and offering products and services to affected communities (Dobie et al., 2018).

The most obvious reaction to the COVID-19 pandemic was an increased concern for health and safety, which prompted many hospitality organizations to apply strict hygiene procedures (Alonso et al., 2020; Atsız and Cifci, 2021; Colmekcioglu et al., 2022; Gupta and Sahu, 2021; Liu, Wang et al., 2021; Shukla et al., 2022; Youssef et al., 2022) and launch dedicated training programs for staff (Alonso et al., 2020; Gupta and Sahu, 2021; Liu, Wang et al., 2021). The pandemic had a negative impact on consumer demand for hospitality products and services, which forced many businesses to cut costs. Common measures included firing staff (Alonso et al., 2020; Bajrami et al., 2021; Hemmington and Neill, 2022; Youssef et al., 2022), reducing salaries (Liu, Wang et al., 2021), suspending services and facilities (Alonso et al., 2020; Soliku et al., 2021), and implementing a temporary closure (Jafari et al., 2021). In some cases, hospitality businesses implemented employee rotation schemes to deal with the reduced manpower (Alonso et al., 2020). There are few examples of enterprises that did not layoff any staff (e.g., Liu, Wang et al., 2021). This meant that employees had to deal with greater job insecurity while being required to do more work. To make employees feel safer and less stressed, some organizations began communicating with employees on a more regular basis (Hahang et al., 2022; Shukla et al., 2022; Yacoub, and ElHajjar, 2021).

Frequently mentioned activities to maintain revenues included offering new services or products (e.g., take-away; delivery; new food items) (Alonso et al., 2020; Hemmington and Neill, 2022), reaching out to new source markets (e.g., domestic market) (Bressan et al., 2022; Liu, Wang et al., 2021; Yacoub, and ElHajjar, 2021; Youssef et al., 2022), converting facilities (e.g., rooms as private dining rooms; quarantine facilities; rooms as offices) (Youssef et al., 2022), and applying more flexible booking and cancellation policies (Yacoub, and ElHajjar, 2021; Youssef et al., 2022). Curiously, McCartney et al. (2021) found that the Macao hospitality industry focused on its core business rather than looking for new sources of income. With almost universal restrictions on face-to-face contact, hospitality organizations appear to have migrated their marketing functions (Colmekcioglu et al., 2022; Hemmington and Neill, 2022), and sometimes even their products and services (Atsız and Cifci, 2021; Hemmington and Neill, 2022), to online channels (e.g., social media; virtual events; online ordering).

In certain countries, the hospitality industry's efforts were enhanced with the availability of government support schemes (financial aid, consulting services, tax breaks) (Allaberganov et al., 2021; Alonso et al., 2020; Liu, Wang et al., 2021; McCartney et al., 2021; Sanabria-Díaz et al., 2021). In contrast, however, several researchers have reported a lack of government support in some destinations (Atsız and Cifci, 2021; Jafari et al., 2021; Soliku et al., 2021). Interestingly, some hospitality organizations engaged in corporate social responsibility practices during the pandemic (e.g., donating PPE to charities; investing in green certification; providing cash gifts for staff) (Colmekcioglu et al., 2022; Liu, Wang et al., 2021). In this regard, Yeon et al. (2021) state that engaging in socially responsible activities mitigates the effects of the pandemic.

2.2.1. Adaptation and learning

are among the least studied dimensions of crisis management (Leta and Chan, 2021). Pappas (2015) provides the example of the Greek hospitality industry, which reacted to the economic crisis of 2008 by permanently shifting from traditional to IT-based marketing. Other examples can be drawn from the wider literature on destination management. Jones (2016) discusses the Toya-Usa Geopark in Japan, which, after repeated volcanic eruptions, was transformed into a heritage park. Management shifted from being entirely government-led to including local stakeholders as well. Liu et al. (2015) recommend that managers revise and update their crisis management plans after a crisis. In their study, Ghaderi et al. (2021) explain how a hotel had experienced such a wide range of different crises that scenario-based planning was deemed ineffective. Rather, it emphasized preparing employees for the unexpected by coaching them on positive thinking and proactive problem solving.

Previous research has suggested that the COVID-19 pandemic has led to a permanent change in the hospitality industry (e.g., Baloch et al., 2022; Colmekcioglu et al., 2022; Sigala, 2021). Most of these studies found that the crisis pushed hospitality businesses to embrace technology (Baloch et al., 2022; Hemmington and Neill, 2022; Shukla et al., 2022; Yacoub and ElHajjar, 2021). This includes the use of virtual technologies (Colmekcioglu et al., 2022; Youssef et al., 2022), artificial intelligence (Colmekcioglu et al., 2022), new online payment systems (Alonso et al., 2020), an improved online presence (Alonso et al., 2020; Bressan et al., 2022), and using technology to improve hygiene procedures (Pillai et al., 2021). Some researchers found that hospitality organizations made permanent changes to their business model in response to the pandemic (Shukla et al., 2022). This includes a greater focus on domestic tourism (Baloch et al., 2022; Soliku, 2021), the introduction of new products and services (Alonso et al., 2020; Soliku, 2021), and a greater attention to personal contact with customers (Hemmington and Neill, 2022; Youssef et al., 2022). Hospitality organizations have also been restructured since the pandemic, with the decentralization of power (Yacoub and ElHajjar, 2021), the increasing flexibility and multi-skilled nature of hospitality work (Huang et al., 2021; Shukla et al., 2022), and remote working and distance learning (Alonso et al., 2020). Lastly, a few researchers noticed a greater concern for corporate social responsibility (Sigala, 2021) and environmental management (Gupta and Sahu, 2021) in the hospitality industry since the crisis.

2.3. Conceptual model

In his work, Hartman (2018) uses complex adaptive systems theory to explore how the tourism industry develops in times of changing circumstances. He explains that progress involves a series of small local adjustments over time as agents explore a space of possibilities in the face of new environmental constraints, which leads to fundamental changes in the industry's structure and organization. Along these lines, the hospitality industry is treated as a complex adaptive system in this research paper. The COVID-19 pandemic is seen as a crisis that has considerably disrupted the normal functioning of this system. In this respect, the organizational resilience framework provides a basis for understanding the gradual responses of individual agents to the crisis. By examining the aggregation of these responses, it is therefore possible to view how the system, as a whole, has been affected by and responded to the crisis. The conceptual model for this research is illustrated in Fig. 1.

3. Study 1: the Omani hospitality industry

3.1. Methodology

3.1.1. Sampling

The aim of conducting this study was to answer the first research question, "How has the Omani hospitality industry responded to the COVID-19 crisis?". Purposive sampling was employed, and four- and five-star hotels in Oman were targeted. These were chosen for their stronger competencies (Razumova et al., 2015) and being better able to respond to the COVID-19 pandemic. From these, only managers who had a role in the day-to-day operations and future strategies of their hotel or department were interviewed, as these individuals were the most involved in their hotel's COVID-19-related responses. At the time of data collection, there were a total of 24 four-star and 26 five-star hotels across Oman (NCSI, 2020). To obtain a representative sample, the researchers sent a cover letter to all 50 hotels, explaining the purpose of the study, the interview topics, and the person(s) eligible to participate. Afterwards, the human resources managers of each hotel were

contacted by telephone to guarantee a good response rate. Overall, 25 managers from 18 different hotels agreed to participate, and interviews were conducted between April and June 2021. The participants' details are displayed in Table 1.

3.1.2. Data collection

Due to the exploratory nature of the research question, as well as the lack of information on the resilience strategies of Omani hotels during the COVID-19 pandemic, a qualitative approach was deemed appropriate for this study. It was anticipated that this method would allow the researchers to gain in-depth knowledge of the participants' experiences and opinions (Miles et al., 2014). Data was collected through semi-structured interviews, which were recorded with an audio recording device. Questions were open-ended and framed as "why", "what", and "how", as recommended by Pajo (2018). The average interview duration was 35 min. At the start of each interview, the

Table 1
Study 1 participants' details.

| NO.	Hotel	No. of Interviewees	Type	Stars	Location
1	(A)	1	Chain	5	Muscat
2	(B)	2	Chain	5	Muscat
3	(C)	4	Chain	5	Muscat
4	(D)	1	Chain	5	Muscat
5	(E)	1	Chain	4	Salalah
6	(F)	1	Chain	4	Muscat
7	(G)	2	Independent	4	Muscat
8	(H)	1	Independent	4	Muscat
9	(I)	2	Independent	4	Muscat
10	(J)	1	Chain	5	Muscat
11	(K)	1	Independent	5	Dakhiliyah
12	(L)	1	Chain	5	Muscat
13	(M)	1	Independent	4	Musandam
14	(N)	1	Independent	4	Duqm
15	(O)	1	Independent	4	Masirah
16	(P)	1	Chain	5	Muscat
17	(Q)	1	Chain	5	Muscat
18	(R)	2	Independent	5	Muscat
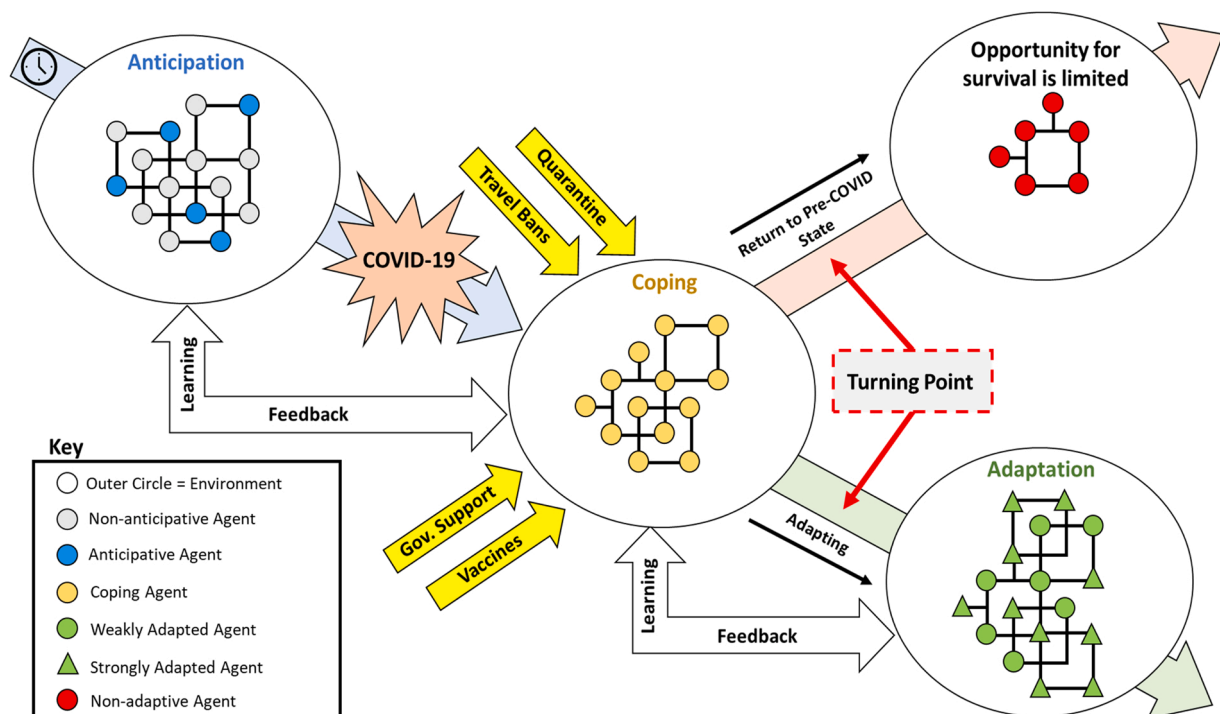
Fig. 1. Conceptual model.

researchers stated the purpose of the study and obtained the participants' consent to be recorded. Participants were assured that their data would be kept confidential, that they could leave the interview if they felt uncomfortable, and that their participation was entirely voluntary. All the interviews were conducted on-site, at each of the participants' hotels, in full accordance with the relevant health and safety protocols.

Questions were asked in three sets based on the stages of anticipation, coping, and adaptation in Duchek's (2020) organizational resilience model. The first set of questions focused on the pandemic's impact and the various coping strategies implemented by the hotels. For example, "What are the main challenges faced by your hotel?", "How did the hotel respond to these challenges?" and "how did you maintain or keep your brand in the minds of customers?". The second set of questions focused on the anticipation and long-term adaptation strategies adopted by the hotels. For example, "Did you have any strategies for predicting, evaluating, and responding to crises?", "what are the innovative/adaptation strategies developed by the hotel to respond to the COVID-19 crisis?", and "Why did the hotel choose these strategies in particular?". Lastly, before concluding the interview, the participants were asked, "Is there anything else you want to add regarding your hotel's response to the COVID-19 pandemic?".

3.1.3. Analysis

The data was analyzed thematically in three stages, as recommended by Pajo (2018). First, the sound recordings were transcribed into text. Second, the text was thoroughly examined and coded according to predefined codes developed from the literature. New codes were created for portions of text that did not fit these predefined codes. Third, codes were grouped together under the three themes of anticipation, coping, and adaptation.

3.2. Results

3.2.1. Anticipation strategies

Observation and identification. Most of the interviewed hotels did not have any contingency, crisis management, or emergency plans for any kinds of epidemics. Two of the interviewees did discuss having previous experience with crises, namely the 2007 cyclone in Oman and the 2008 terror attacks in Mumbai. However, they explained that the aftermath of these events on business performance had been relatively short-lived.

"Previously we had Gonnu in Oman, where most of the roads were blocked and things were destroyed. Companies, businesses, and stores were affected, but still, we didn't have anything in hand if such a thing would happen again in the future." (Hotel C, General Manager, 5-star hotel).

Preparation for crises. Prior to the pandemic, most of the examined hotels did not budget or set any funds aside for emergencies or financial downturns. With the onset of the pandemic, there was widespread non-acceptance of the virus. More than half of the interviewed hoteliers admitted that, even as the coronavirus spread to other countries and continents, they still believed that Oman would be safe.

"To begin with I said, 'no, come on its far away… it's in China'. Then, when it started here in Oman I thought 'it's ok… it's only one person'. And then the numbers started getting higher and higher. Unfortunately, we have still mental people that, until now, think that this is not true, and this is just made up!" (Hotel C, HR Manager, 5-star hotel).

3.2.2. Coping strategies

COVID-19 response planning. According to several of the interviewees, the government guidelines for managing the COVID-19 pandemic in hospitality firms were issued fairly late. During this time, only 7 of the 18 hotels examined, all from international chains, engaged in any kind of response planning based on their chain's guidelines. Most

of these same hotels conducted other activities, such as COVID-19 awareness training, creating virus-related budgets, and assigning dedicated COVID-19 compliance agents. One hotel showed uncommon initiative in applying hygiene measures at an early stage.

"We were ready before the Ministry came back to us with [the Guidelines] because we contacted other countries like Dubai and Saudi Arabia to find out what they had done. The governments there were faster than us here to implement social distancing, outlet capacities, and sanitizing procedures." (Hotel C, General Manager, 5-star hotel).

Safety and hygiene programs. The government guidelines set out the mandatory hygiene measures for hospitality establishments (i.e., use of personal protective equipment, temperature checking, reducing guest capacity, etc.). It seems that only six hotels, all from international chains, went beyond the basic measures presented in these guidelines. These measures included placing special hygiene kits in guest rooms, obtaining third party hygiene and safety certifications, investing in new sanitizing equipment, and installing digital noticeboards.

"Before we opened the hotel, the staff went through special training for the pandemic. We have also set-up a glass shield… And then, when the guests come to the hotel, we give them a kit and a small bag, which has masks and sanitizers and so on." (Hotel B, General Manger, 5-star hotel).

Flexible sales strategies and quick wins. All the examined hotels employed flexible sales strategies, engaged in promotional activities, and established social media marketing strategies. Five of the hotels created videos of their hygiene and sanitation measures and posted them online. All the hotels had to appeal to new markets. Ten of the 18 hotels converted their rooms into isolation facilities for quarantine purposes. Eight of the hotels launched limited offers, and only four organized limited events.

We tried a few things to attract local people. We made a "Day pass" offer where people enjoy all our luxurious facilities for the whole day at an affordable price. The period between September to November is known for whale sharks, so we started to cooperate with sea diving coaches to teach and promote this activity. (Hotel B, General Manager, 5-star hotel).

Cost reduction. All the interviewed hotels reduced operating and personnel costs to some degree. Temporary property closures and employee layoffs were common measures. Expatriate workers were mostly targeted for the layoffs. However, this had negative consequences, and many of the hotels had to rely on outsourcing, employee multi-tasking, and extensive overtime.

"Because we were so short-staffed, we had to do a lot of cross training. So someone from admin, for example, can support a front desk team member during rush hours or help check guest temperatures." (Hotel C, Training Manager, 5-star hotel).

Seeking support. Two independent hotels received a bank loan, another independent hotel relied on the owner's personal resources, and two hotels from international chains made use of dedicated funds established by their groups. To provide some financial relief, the Omani government declared that hotels were exempt from paying the tourism tax for 2020 and 2021. Few hotels were comfortable discussing the available government support.

Communication. All the hotels used social media to maintain regular communication with guests. Uniquely, two hotels from international chains engaged with their social media followers by hosting live sessions with activities such as yoga, home spa treatments, and cooking.

"Our recreation manager was doing yoga classes. She was sharing videos every other day. We also had team members showcasing their cooking, their makeup, and singing. Any staff who had a talent or something like that, we just took a video and shared it." (Hotel C, HR Manager, 5-star hotel).

Acting responsibly. One hotel from an international chain decided to reduce staff exposure to infection by stopping their outside catering service, and another lodged staff on-site to reduce the risk of exposing their families to infection. Interestingly, the only two hotels that did not fire any employees were local independent hotels. Very few of the hotels offered free accommodation to underprivileged persons requiring institutional quarantine.

"No no no no we paid salary to all employees, from my own pocket. Now you are working with me so I'm responsible of you, how you will feed your family? I must take care of you as long as you are working, as long as you are my employee." (Hotel I, General Manger, 4-star hotel).

3.2.3. Adaptation and learning strategies

Only 11 of the 18 hotels interviewed for this study exhibited some form of adaptation or learning:

Digital transformation. The shift towards digitalizing services was common. Nearly half of these 11 hotels had replaced physical services and amenities with digital technologies, including food delivery mobile applications, virtual and hybrid meetings, digital menus and room keys, and virtual tours.

"Like, before, we used to have 100 or 1000 people in the boardroom. With corona we couldn't do that anymore. So, we set up a studio for three to four, or five people. They are addressing the conference and we have a high-tech system to connect everybody in any country." (Hotel L, General Manger, 5-star hotel).

Re-designing the business model. Similarly, half of these hotels expressed their intention to continue appealing to diverse markets and offering a greater range of products and services, even when international travel resumes.

"After the pandemic it will be different. We will target local and international guests, and not only target the international. Because of COVID, there are some locals coming here and saying, "this hotel is nice, and we didn't know about this before."" (Hotel G, Marketing Manager, 4-star hotel).

Learning for the future. Most of the learning discussed by the interviewees concerned being more financially prudent by setting money aside and effectively controlling costs. They also discussed how the pandemic reemphasized the importance of human resources and expressed their intention to strengthen internal communication and support and to develop the emotional intelligence and personal resilience of staff. Lastly, the interviewees explained that the pandemic had led them to appreciate the importance of immediate acceptance of crises, anticipatory budgeting, and operational flexibility.

"The main change in all of this is being able to get the staff to understand that there is a change in your priorities. Having quick and accurate service is good and everything, but in these times, we see that people want to talk to you. They want to understand what's happening." (Hotel Q, General Manger, 5-star hotel).

4. Study 2: the international hospitality industry

4.1. Methodology

4.1.1. Sampling

The aim of conducting this study was to answer the second research question, "How has the international hospitality industry responded to the COVID-19 crisis?". The world's leading international hotel brands (IHBs) were targeted. These were chosen for their greater capabilities and resources (Meira et al., 2019), being better able to manage the effects of the COVID-19 pandemic. To this end, Brand Finance's (2021) top 50 most valuable hotel brands were selected for inclusion. The complete list of brands analyzed in this study can be found at https://brandirectory.com/rankings/hotels/table.

4.1.2. Data collection

Data was collected from the official websites and annual reports (2020–2021) of these 50 brands. The text from these media was extracted and compiled into Microsoft Word documents for each brand. Patton's (1999) process of triangulation was used to ensure consistency in the collection. The media collection and text extraction took place between December 2021 and February 2022.

4.1.3. Analysis

Bengtsson's (2016) four-stage approach was used for the analysis, as illustrated in Fig. 2. First, the extracted text in each Microsoft Word document (representing each brand) was broken down into meaning units. These meaning units were then summarized into condensed meaning units. Second, these condensed meaning units were coded. A hybrid coding approach, as described by Fereday and Muir-Cochrane (2006), was employed with both predefined codes and new codes developed from the texts. Afterwards, the original texts were revisited to confirm the validity of the codes. Third, the coded condensed meaning units were grouped under the three themes of anticipation, coping, and adaptation. To ensure the validity of the process, Burnard's (1995) method was employed. The codes and themes, along with examples of the condensed meaning units, were presented and evaluated by two colleagues who were uninvolved in the study. Fourth, the analyzed data was prepared for presentation by linking relevant quotes (from the extracted text) to the codes.

4.2. Results

4.2.1. Anticipation strategies

Observation and identification. The content analysis revealed that most of the IHBs had measures in place to predict, evaluate, and respond to a diverse range of crises. One of the most common strategies employed was risk mapping. In several of the analyzed IHBs, risk committees existed for the specific purpose of identifying crises.

"The Executive Committee carries out risk mapping where risks are identified and measured based on the probability that they will occur as well as the consequences of their occurrence on the Group's operations and financial position." (Scandic Hotels).

Preparation for crises. Most of the analyzed IHBs made extensive preparations to equip managers and employees with the tools and knowledge needed to anticipate and respond to a diverse range of crises, from adverse weather events to terrorist attacks. Many of the hotels had emergency preparedness guides, were active in scenario and business continuity planning, and had on-going emergency training for staff.

"All owned and managed hotels are also provided with a Wyndham Hotels & Resorts Emergency Preparedness Guide to assist them to prepare for and manage an emergency. The [Guide] establishes minimum requirements and provides a responsible managerial plan detailing the protection of life." (Wyndham).

4.2.2. Coping strategies

COVID-19 response planning. Most of the examined IHBs established specialized teams to deal with the pandemic (e.g., COVID Committees). These teams drew-up plans to handle the crisis and coordinate with different stakeholders. A few of the brands with a presence in China had developed COVID-19 response plans at an early stage based on the lessons learned there.

"We created a comprehensive pandemic response plan with clear objectives… To achieve this, we brought all the experience acquired in China in the initial months of the crisis before it became globally relevant." (Meliá Hotels).

Safety and hygiene programs. All the studied IHBs implemented enhanced cleanliness programs. These typically included new more rigorous hygiene standards, more thorough cleaning procedures and products, strict inspections, the appointment of dedicated cleanliness monitors (e.g., Clean Captains), and special hygiene training for staff.

"Our We Clean, We Care, We Welcome, commitment… builds on existing protocols and complements exhaustive mandatory preventive measures… A Hygiene Ambassador in each hotel will ensure that our employees are trained with the latest processes and procedures to enhance guest safety." (Millennium Hotels).

Flexible sales strategies and quick wins. All the studied IHBs implemented flexible sales strategies, engaged in promotional activities, and actively pursued short-term opportunities to maintain revenues. The
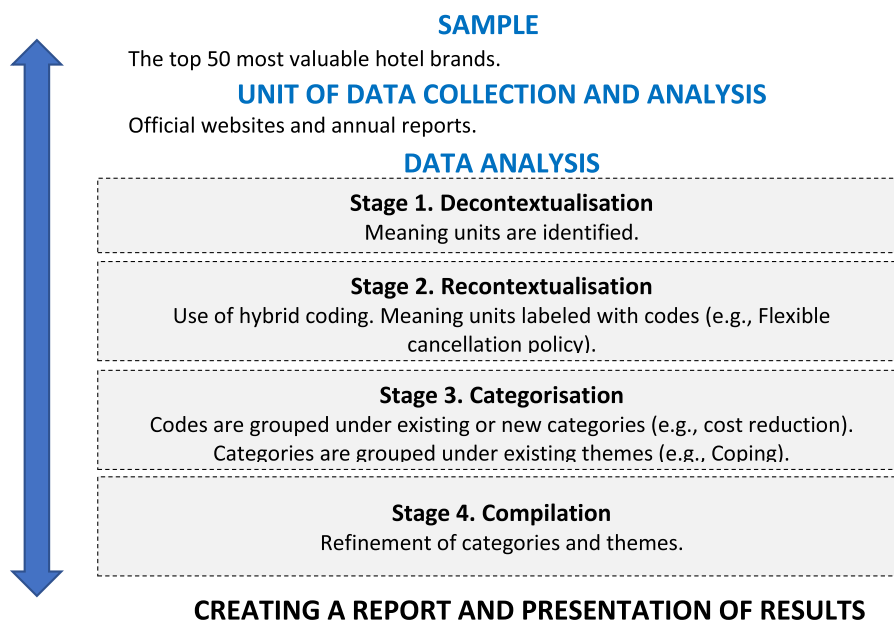
The top 50 most valuable hotel brands.
UNIT OF DATA COLLECTION AND ANALYSIS
Official websites and annual reports.
DATA ANALYSIS

Stage 1. Decontextualisation
Meaning units are identified.

Stage 2. Recontextualisation
Use of hybrid coding. Meaning units labeled with codes (e.g., Flexible cancellation policy).

Stage 3. Categorisation
Codes are grouped under existing or new categories (e.g., cost reduction). Categories are grouped under existing themes (e.g., Coping).

Stage 4. Compilation
Refinement of categories and themes.

CREATING A REPORT AND PRESENTATION OF RESULTS

Fig. 2. : Stages of data analysis for study 2.

most common strategies were "book now, pay later" schemes, flexible cancellation and refund policies, and enhanced rewards for loyalty program members. Moreover, all IHBs actively pursued short-term opportunities to maintain revenues. These tended to involve new or innovative food and beverage items and "limited-time-only" service bundles. All the IHBs refocused their attention on local communities and residents. Moreover, the repurposing of hotel facilities (e.g., workspaces, vaccination centers, student accommodations, quarantine accommodations) was common practice.

"*Our marketing teams have also been focused on generating demand, enticing guests with many creative offerings such as staycation packages and encouraging guests to take their remote work to our hotels using Day Pass, Stay Pass and Play Pass packages.*" (Marriott).

Cost reduction. Without exception, all the IHBs analyzed in this study adopted cost cutting measures. Common ways to reduce personnel costs included employee layoffs, furloughs, hiring freezes, and clustering and centralizing management functions. Popular ways of reducing operating costs included using cheaper materials and suppliers, eliminating non-essential expenses, implementing temporary property closures, and minimizing utility expenses.

"*We reduced our hotel operating expenses this year by undertaking the following initiatives: renegotiating the contracts entered into with various vendors... leveraging shared services, closure of hotels during times of low demand, re-routing demand to a single hotel in a city.*" (Taj Hotels).

Financing and liquidity. The analyzed IHBs took various steps to strengthen their financial position. Applying for bank loans, taking advantage of government support programs, making use of credit facilities, issuing new shares, and selling non-core assets were among the most common practices. In addition, most of the examined brands preserved their liquidity by suspending share repurchases, dividend distributions, new projects, non-priority contracts, and non-essential renovations.

"*We initiated an early dialogue with our principal owners and lending banks, the result of which was that we were able to carry out a new share issue of approximately 1765 MSEK in June with preferential rights to our existing shareholders.*" (Scandic Hotels).

Communication. Maintaining communication with guests and followers was an important factor for all the examined IHBs. Typical activities included communicating hygiene standards, offering safety advice on official websites and social media channels, and setting-up dedicated help lines or chat services. Most of the brands were preoccupied with improving the flow of information within and between their properties with weekly newsfeeds, emergency reporting services, and dedicated communication offices.

"*To further drive bottom-up communications and collaborations, we launched a Shangri-La Best Practice online group for our people to share how they had been innovating during the crisis.*" (Shangri-La).

Acting responsibly. The IHBs included in this study concentrated on employee safety, franchisee support, and local community needs. For employee safety, common activities included providing equipment to enable teleworking, controls to measure physical and mental health, extending health care benefits, and providing financial support. For franchisee support, the IHBs frequently differed fees, made standards more flexible, established outreach and education programs, collaborated with governments to provide relief packages, offered low-interest loans, and provided discounts on training and supplies. For local community needs, common initiatives included providing free accommodation and meals to essential workers, donating face masks to local people, converting hotels into hospitals, switching suppliers to support marginalized and vulnerable groups, and partnering with charities to establish funds for hospitals and families.

"*We therefore helped out during the emergency by allowing hotels to be converted into hospitals and also used to provide accommodation for essential workers, whose work we acknowledged through our "Nights for your days" campaign.*" (Meliá Hotels).

4.2.3. Adaptation and learning strategies

All the IHBs analyzed in this study demonstrated some form of adaptation or learning:

Re-designing the business model. Increasing and diversifying revenue sources was one of the most common adaptations. This included creating innovative food and beverage items, developing special menus for businesses, maintaining home delivery and catering services, and a more comprehensive long-term focus on corporate customers and nearby residents. In much the same way, several of the brands switched to using local suppliers to reduce expenses and ensure steady material sourcing.

"*The pandemic has pushed us to rethink and reimagine how we provide our guests with the services and experiences that they are looking for – resulting in high-end, to-go cocktails, expanded grab-n-go markets and personalized plating for meetings and events.*" (Hilton).

Digital transformation. Many of the examined IHBs made heavy

investments in digitalization to improve both guest experiences and hotel operational capabilities. The former included the creation of mobile applications (e.g., food delivery, room personalization, contactless check-in), virtual and hybrid meeting facilities, digital menus and room keys, enhanced website experiences, and the use of artificial intelligence and machine learning to improve personalization and optimize service delivery. The latter included technologies to support remote learning, online training platforms, contactless attendance systems, virtual communities for employees, and facilities for virtual site inspections.

"*Barceló Hotel Group has developed its own app which allows guests to complete simple procedures such as check in and check out, order food or even use the app as a room key to unlock doors to ensure maximum levels of hygiene in the hotel room.*" (Barceló Hotel Group).

Flexible and agile organizational structures. A clear adaptation undertaken by the studied IHBs is the acceptance of the pandemic and moving forward with the new normal. This can be seen in the maintenance of the enhanced hygiene programs and the new approaches to working. Some brands are clustering business functions and eliminating low-value positions, making use of multi-skilled employees who can work across departments instead. Other brands appear to be maintaining hybrid working arrangements.

"*Re-imagined ways of working in terms of a lean organisation structure, focus on multi-skilling and elimination of non-value-added activities by embracing digital [technologies]… through which our multi-skilled frontline workforce can contribute to multiple departments.*" (Taj Hotels).

Strategic partnerships. The studied IHBs appear to have appreciated the value of forming strategic partnerships and developing inter-industry cooperation. New cleanliness programs have been developed with leading organizations in relevant fields, medical services were made available through partnerships with hospitals and insurance companies, new digital solutions were developed cooperatively, new financing schemes were arranged with international banking consortiums, and community support programs were designed with non-governmental organizations.

"*Our complete approach to infection prevention includes a close association with Ecolab. This includes a new online resource hub available to franchisees, featuring operational best practices, training and resources from Ecolab's industry-leading experts.*" (Choice Hotels).

Learning for the future. Learning has been a key outcome for many of the IHBs investigated in this study. Among the most popular are the prioritization of customer safety, the need to innovate and reinvent quickly, and the importance of staff resilience. With the heightened reliance on digital solutions, many brands are becoming increasingly attentive of the need for data security and data analytics. The pandemic also reminded the brands of their financial fragility, and, as a result, preserving liquidity and maintaining strong balance sheets have been cited as critical strategies in the coming years.

"*[W]e have worked with Deloitte on a Resilience Coaching Programme where members of the Talent Pool reflect on how to face uncertain and complex situations, how to manage their own emotions and those of their teams, and how to develop collective resilience.*" (Meliá Hotels).

5. Discussion

Based on the hotels in our sample, the Omani hospitality industry was not active in anticipating the COVID-19 pandemic. This differs from how other hotels planned for other types of crises, as identified by previous researchers (e.g., Chandrasekera and Hebert, 2018; Fang et al., 2020; Ghaderi et al., 2021; Liu et al., 2015). With respect to the COVID-19 pandemic, this finding agrees with those of Yacoub and ElHajjar (2021). Unlike the situation reported in previous research, however, the Omani industry did not prepare cash reserves (e.g., Atsız and Cifci, 2021; Bressan et al., 2022; Shukla et al., 2022), and most enterprises ignored early warning signs (e.g., Sobaih et al., 2021). Based on our sample of IHBs, the international hospitality industry was well prepared to anticipate a variety of different crises. This agrees with the

practices examined in previous crises (e.g., Chandrasekera and Hebert, 2018; Fang et al., 2020; Ghaderi et al., 2021; Liu et al., 2015). Furthermore, there is little evidence to suggest that the brands included the perspectives of all their stakeholders in their crisis preparations, supporting Leta and Chan's (2021) statement. Concerning the COVID-19 pandemic, the preparedness of the IHBs is a finding that disagrees with Yacoub and ElHajjar's (2021) work. There was little evidence of any cash reserves, which also differs from the findings of previous researchers (e.g., Atsız and Cifci, 2021; Bressan et al., 2022; Shukla et al., 2022). However, the monitoring and mapping activities of the IHBs is a finding that agrees with Sobaih et al.'s (2021) study. Fig. 3 summarizes the hotel industry's crisis anticipation strategies based on the findings of Studies 1 and 2.

Agreeing with previous research (e.g., Leta and Chan, 2021; Pappas, 2015), the Omani industry appears to have concentrated the bulk of its efforts on common ways of maintaining revenues and reducing costs. However, different from Broshi-Chen and Mansfeld's (2021) and Fang et al.'s (2020) findings, more creative ways of maintaining revenues and reducing costs were only undertaken by a small minority of the hotels. With some exceptions, the industry did not really look to its social networks or engage in socially responsible activities during the pandemic, contrasting with the recommendations and findings of previous researchers (e.g., Coles et al., 2021; Dobie et al., 2018; Leta and Chan, 2021). Less than half of the hotels engaged in any kind of response planning, providing weak support for the work of Fang et al. (2020) and Pappas and Brown (2020). In keeping with Liu et al.'s (2015) recommendation, nearly all the hotels used social media to promote their hotels and maintain communication with guests.

Compared to other research on the hospitality industry's response to the COVID-19 pandemic, the current study's findings on the Omani hospitality industry are similar regarding the application of hygiene programs (Alonso et al., 2020; Atsız and Cifci, 2021; Colmekcioglu et al., 2022; Gupta and Sahu, 2021; Liu, Wang et al., 2021; Shukla et al., 2022; Youssef et al., 2022), the maintenance of revenues (Alonso et al., 2020; Atsız and Cifci, 2021; Bressan et al., 2022; Colmekcioglu et al., 2022; Hemmington and Neill, 2022; Liu, Wang et al., 2021; Yacoub, and ElHajjar, 2021; Youssef et al., 2022), cost cutting (Alonso et al., 2020; Bajrami et al., 2021; Hemmington and Neill, 2022; Jafari et al., 2021; Liu, Wang et al., 2021; Soliku et al., 2021; Youssef et al., 2022), the lack of government support (Atsız and Cifci, 2021; Jafari et al., 2021; Soliku et al., 2021), and communication within the organization (Hahang et al., 2022; Shukla et al., 2022; Yacoub, and ElHajjar, 2021). Furthermore, as Liu, Wang et al. (2021) similarly found, a few of the hotels did not fire any staff. Different from what McCartney et al. (2021) found in their study on Macao, the Omani hospitality industry had to divert from its core business activities to survive the pandemic. Unlike Colmekcioglu et al.'s (2022) and Liu, Wang, et al.'s (2021) findings, there is little evidence that Omani hotels contributed to charity or looked to improve their environmental management during the pandemic.

Consistent with previous research on other types of crises, the IHBs implemented common measures to maintain revenues and reduce costs (Leta and Chan, 2021; Pappas, 2015). There was only limited mention of repositioning manpower, contrasting with the work of Broshi-Chen and Mansfeld (2021) and Fang et al. (2020). However, the IHBs centralized processes and clustered management functions to reduce costs. This is a novel finding, not yet mentioned in previous crisis literature. For the most part, the brands made strong use of their social networks, in keeping with Coles et al.'s (2021) recommendations. They also engaged in socially responsible activities, reinforcing the work of Dobie et al. (2018) and Leta and Chan (2021). Consistent with Fang et al.'s (2020) and Pappas and Brown's (2020) findings, many of the brands formed dedicated teams and made plans to handle the crisis. All used social media to engage with guests, as Liu et al. (2015) had recommended. An original finding concerns the brands' interest in improving communication within and between the individual properties in their network.

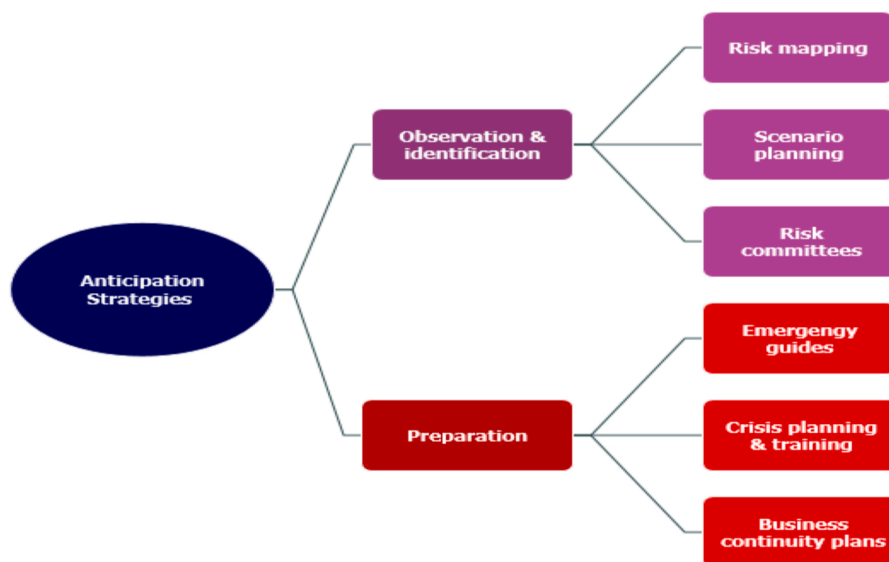The current study's findings about IHBs are in keeping with previous

Fig. 3. Mind map of the hospitality industry's COVID-19 crisis anticipation strategies.

research on the COVID-19 pandemic, especially regarding stricter hygiene protocols (Alonso et al., 2020; Atsız and Cifci, 2021; Colmekcioglu et al., 2022; Gupta and Sahu, 2021; Liu, Wang et al., 2021; Shukla et al., 2022; Youssef et al., 2022), hygiene training for staff (Alonso et al., 2020; Gupta and Sahu, 2021; Liu, Wang et al., 2021), cost cutting measures (Alonso et al., 2020; Bajrami et al., 2021; Hemmington and Neill, 2022; Jafari et al., 2021; Liu, Wang et al., 2021; Soliku et al., 2021; Youssef et al., 2022), the maintenance of revenues (Alonso et al., 2020; Atsız and Cifci, 2021; Bressan et al., 2022; Hemmington and Neill, 2022; Liu, Wang et al., 2021; Yacoub, and ElHajjar, 2021; Youssef et al., 2022), migrating marketing functions (Colmekcioglu et al., 2022; Hemmington and Neill, 2022), improving communication (Hahang et al., 2022; Shukla et al., 2022; Yacoub, and ElHajjar, 2021), and engaging in corporate social responsibility practices (Colmekcioglu et al., 2022; Liu, Wang et al., 2021). Furthermore, the IHBs appear to have benefited from cooperative schemes with different governments. While this finding agrees with the work of numerous researchers (e.g., Allaberganov et al., 2021; Alonso et al., 2020; Liu, Wang et al., 2021; McCartney et al., 2021; Sanabria-Díaz et al., 2021), it disagrees with those of Atsız and Cifci (2021), Jafari et al. (2021), and Soliku et al. (2021). However, all the IHBs appeared to have let staff go and diverted from their core business activities, contrasting with Liu, Wang et al. (2021) and McCartney et al. (2021), respectively. Fig. 4 summarizes the hotel industry's crisis coping strategies based on the findings of Studies 1 and 2.

Just over half of the Omani hotels in our sample demonstrated some form of adaptation or learning. In keeping with Pappas (2015) work, the pandemic pushed a handful of Omani hotels to replace physical services and operations with digital alternatives. As Jones (2016) had seen at the Toya-Usa geopark, the pandemic changed the way several Omani hotels approached their customers and their management. As Ghaderi et al. (2021) and Liu et al. (2015) had previously found and recommended, the pandemic led a few hotels to rethink and develop their preparations for future crises. Regarding previous research on the COVID-19 pandemic, these findings support Baloch et al.'s (2022), Colmekcioglu et al.'s (2022), and Sigala's (2021) suggestions that the pandemic has led to a permanent change to the hospitality industry. Furthermore, the findings agree with those of other researchers who found that the pandemic pushed hospitality organizations into adopting technology (e. g., Alonso et al., 2020; Baloch et al., 2022; Bressan et al., 2022; Colmekcioglu et al., 2022; Hemmington and Neill, 2022; Shukla et al., 2022; Yacoub and ElHajjar, 2021; Youssef et al., 2022) and changing their business models (e.g., Alonso et al., 2020; Baloch et al., 2022;

Shukla et al., 2022; Soliku, 2021). However, they differ from previous research that documented how enterprises restructured their organizations due to the pandemic (e.g., Alonso et al., 2020; Huang et al., 2021; Shukla et al., 2022; Yacoub and ElHajjar, 2021), and suggested a greater attention to corporate social responsibility (e.g., Gupta and Sahu, 2021; Sigala, 2021).

All the examined IHBs demonstrated some form of adaptation or learning. In keeping with the work of Jones (2016), most of the brands made permanent changes to their business models. Similar to Pappas (2015) findings, nearly all the IHBs invested in digitalization. Reflecting the work of Ghaderi et al. (2021) and Liu et al. (2015), the brands recognized the importance of generating cash quickly, developing strategic partnerships, and strengthening the personal resilience of staff for future crises. A novel finding is the IHBs prediction that greater digital competencies will be needed in the future. With respect to previous research on the COVID-19 crisis, the findings of the current study provide strong support for Baloch et al.'s (2022), Colmekcioglu et al.'s (2022), and Sigala's (2021) statements about the permanent changes undertaken by the hospitality industry. Furthermore, they agree with previous research concerning the increased adoption of technology (Alonso et al., 2020; Baloch et al., 2022; Bressan et al., 2022; Colmekcioglu et al., 2022; Hemmington and Neill, 2022; Pillai et al., 2021; Shukla et al., 2022; Yacoub and ElHajjar, 2021; Youssef et al., 2022), business model changes (Alonso et al., 2020; Baloch et al., 2022; Hemmington and Neill, 2022; Shukla et al., 2022; Soliku, 2021; Youssef et al., 2022), and organizational restructuring (Alonso et al., 2020; Huang et al., 2021; Shukla et al., 2022; Yacoub and ElHajjar, 2021). Fig. 5 summarizes the hotel industry's adaptation and learning strategies based on the findings of Studies 1 and 2.

6. Implications

6.1. Theoretical implications

This research provides fresh insight into the responses of the hospitality industry during the COVID-19 pandemic with important distinctions between its local and international dimensions. According to our sample, the Omani hospitality industry was unprepared for, and reluctantly accepted, the arrival of the virus. There seems to have been a reactive, panicked attempt to survive, with an "every man for himself" attitude and no long-term targets. Overall, the general attitude seemed to be that, with enough time, the situation would eventually return to
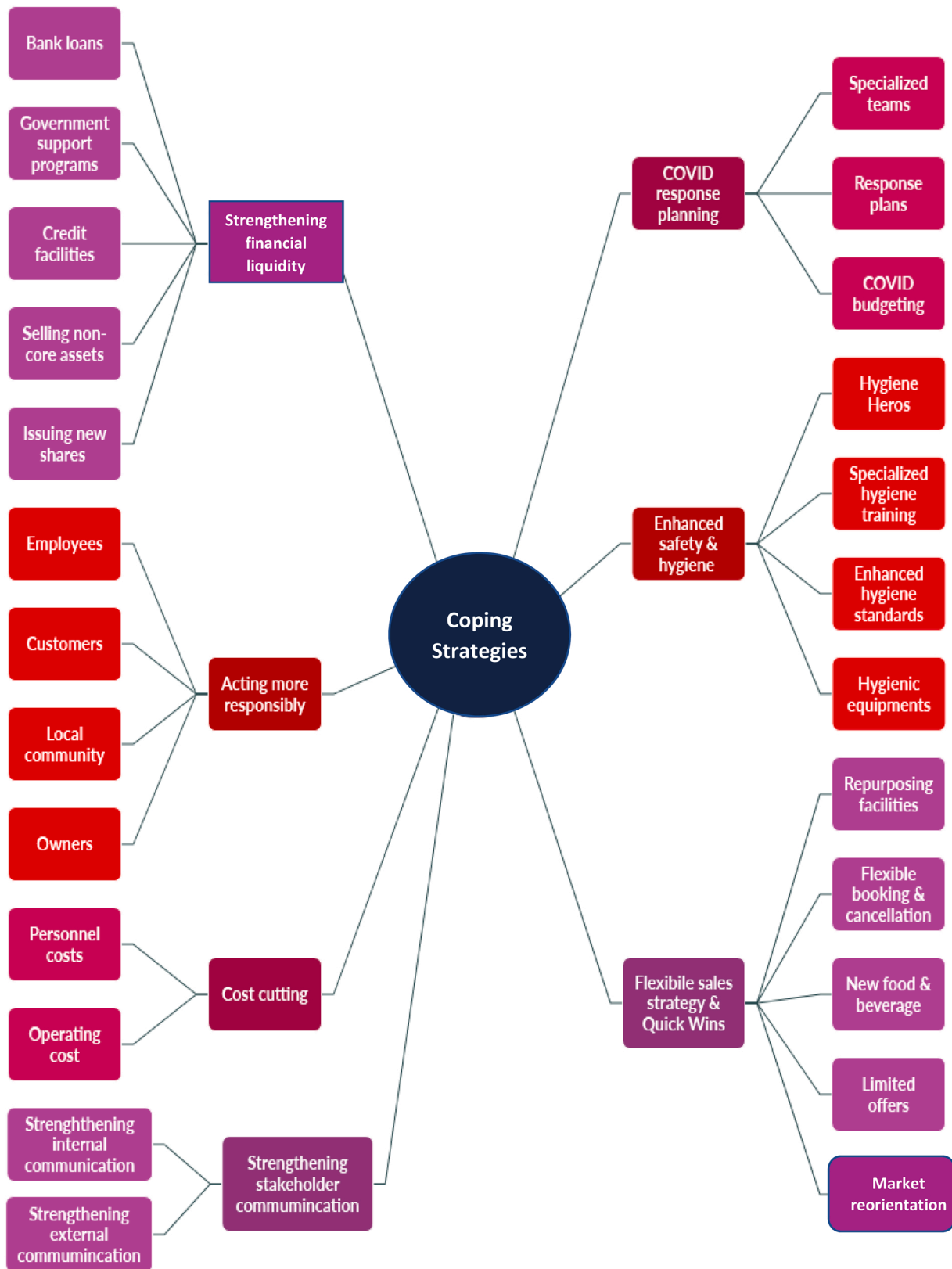
Fig. 4. Mind map of the hospitality industry's COVID-19 crisis coping strategies.

pre-pandemic conditions. According to our sample, the international hospitality industry was prepared for, and proactive in addressing, the virus. They leveraged their resources, relationships, and creativity to develop long-term solutions, looking for ways to thrive in the new normal. Examined within Duchek's (2020) model, therefore, the Omani hospitality industry was mostly active in the coping stage only, whereas the international hospitality industry had a much more balanced approach to anticipate, cope with, and adapt to the COVID-19 pandemic.
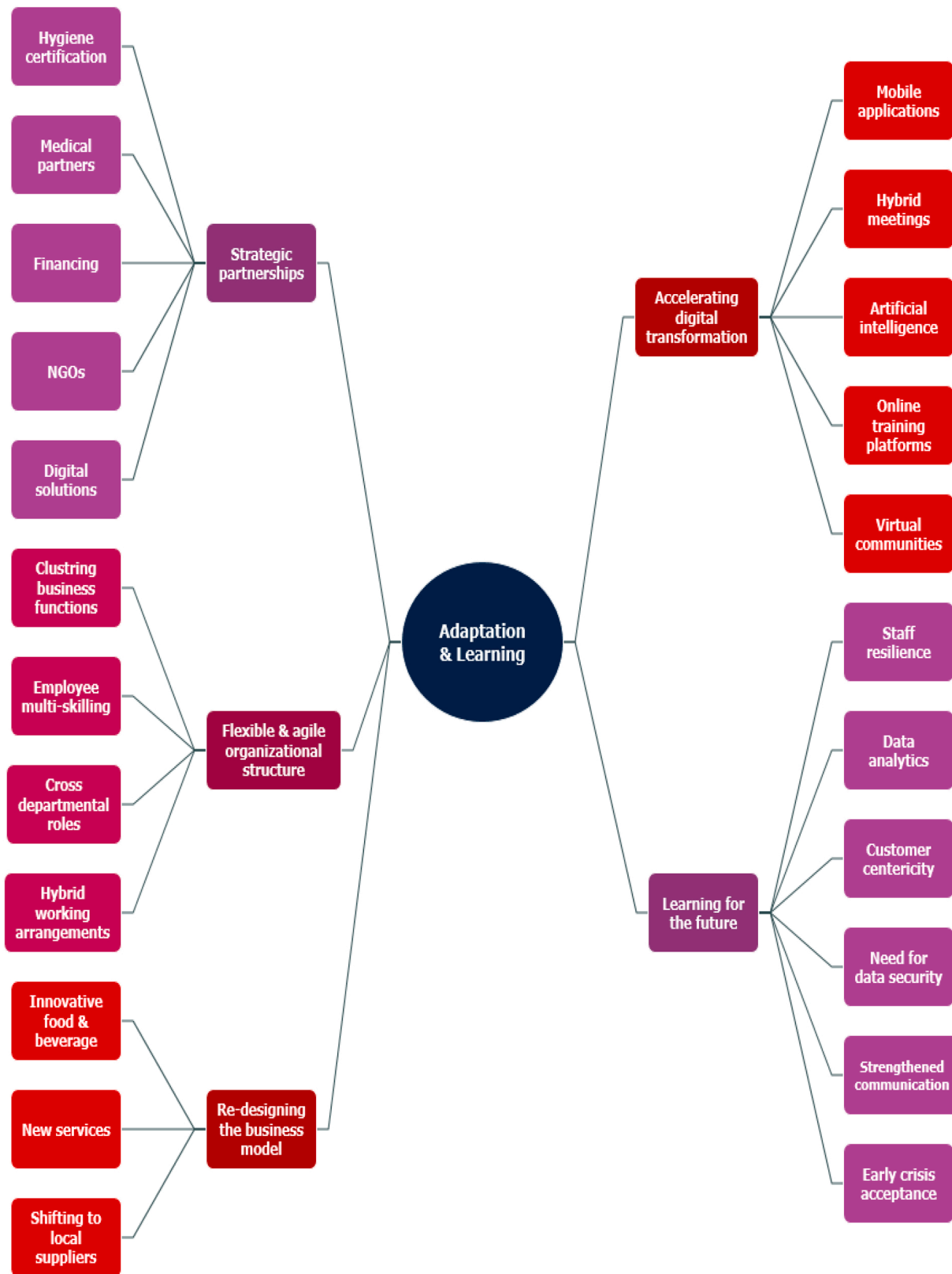
Fig. 5. Mind map of the hospitality industry's adaptation and learning strategies.

Our research reinforces the notion of the hospitality industry as a complex adaptive system. The disruptions caused by the COVID-19 pandemic have had a dramatic effect on the behavior of and relationships between individual agents, with system-wide repercussions. At the local and international levels, hotels are switching suppliers, postponing payments, closing properties, halting services, laying off employees, and targeting new markets to survive the crisis. This affects the performance of interdependent agents, their subsequent interdependent agents, and so on. Moreover, agents are encroaching on the activities of other agents. Therefore, the relationships between agents are changing, and

the composition of the system, itself, is being reshaped. There are also the telltale signs of self-organization, as agents mimic each other's offerings (e.g., staycations, limited F&B items, day-use), communications (e.g., hosting social media events), and operations (e.g., layoffs, remote working, digitalization). There is also strong evidence of non-linearity, as the behaviors of agents (e.g., property closure, rate changes, selling assets, etc.) have knock-on effects for destinations and other agents, and feedback, as anxiety perpetually diminishes owner, investor, and customer confidence.

Furthermore, the results of our research provide strong evidence to suggest that the COVID-19 pandemic has led to an evolution of the complex system that is the hospitality industry. Although it is true that, while the examined IHBs all demonstrated adaptations, only a small majority of the interviewed Omani hotels exhibited some form of adaptation or learning. There is good reason to believe that, given the high degree of interconnectivity and interdependence between agents, adaptations will eventually fully diffuse across the entire system.

Hospitality firms are now more aware and more sensitive to risk. They are now looking to maximize their reach and product range like never before. Market positions have expanded to incorporate niches and segments that were previously the business of specialists, and firms have become more multifunctional. Hospitality firms are now leaner and more agile, affecting the nature of hospitality employment. As jobs are redesigned for multi-tasking and cross-departmental functions, there will be more demand for workers with polyvalent experience, competencies, and skills. Moreover, to keep up with the increasingly technical and fast-changing business environment, hospitality firms are decoupling their internal structures to take advantage of the expertise and reputation offered by external providers. Hospitality firms have become more people-centric, with greater concern for the wellbeing of both guests and employees. Training is no longer limited to tasks but also includes developing empathy, emotional intelligence, and personal resilience. Hospitality firms have become more dependent on

technology. Digitalized services have now become a central part of a hospitality firm's business model. As a result, the role of the IT department has been redefined from that of a more-or-less supporting entity to one that is critical to the delivery of core products and services.

Fig. 6 summarizes the findings of this research within a novel framework that integrates the organizational resilience construct with complex adaptive systems theory. By tracing the hospitality industry's responses through the pre-, during-, and post-crisis stages of the COVID-19 pandemic, this framework provides a unique window into how the industry has evolved, as a whole.

6.2. Practical implications

Baker et al. (2022) state that changes to climate conditions, plant and animal production, transport technology, and human movements in the last few decades have given birth to a new era of infectious diseases that will increasingly threaten human health on a global scale. The COVID-19 pandemic has emphasized just how vulnerable the hospitality industry is to these kinds of global epidemics. To prepare both the international and local hospitality industries to respond to future pandemics, we combine the lessons learned from this research to propose the **RESTART** action framework illustrated in Fig. 7.

The first R is for "Redesign the business model". A new health epidemic could spring up at any time, causing travel bans and travel apprehension. Being overly reliant on one target group is simply too risky. That's why hospitality firms should seek to diversify their products and reach out to a wider range of market segments. For example, by maintaining staycations and day-use packages to appeal to the domestic market even after the pandemic is over.

The E is for "Embrace the new normal". Hygiene was already an important factor for hospitality before the coronavirus. A disease outbreak affects everyone, from guests to staff, to the firm itself. Therefore, hospitality firms need to invest in rigorous hygiene programs.
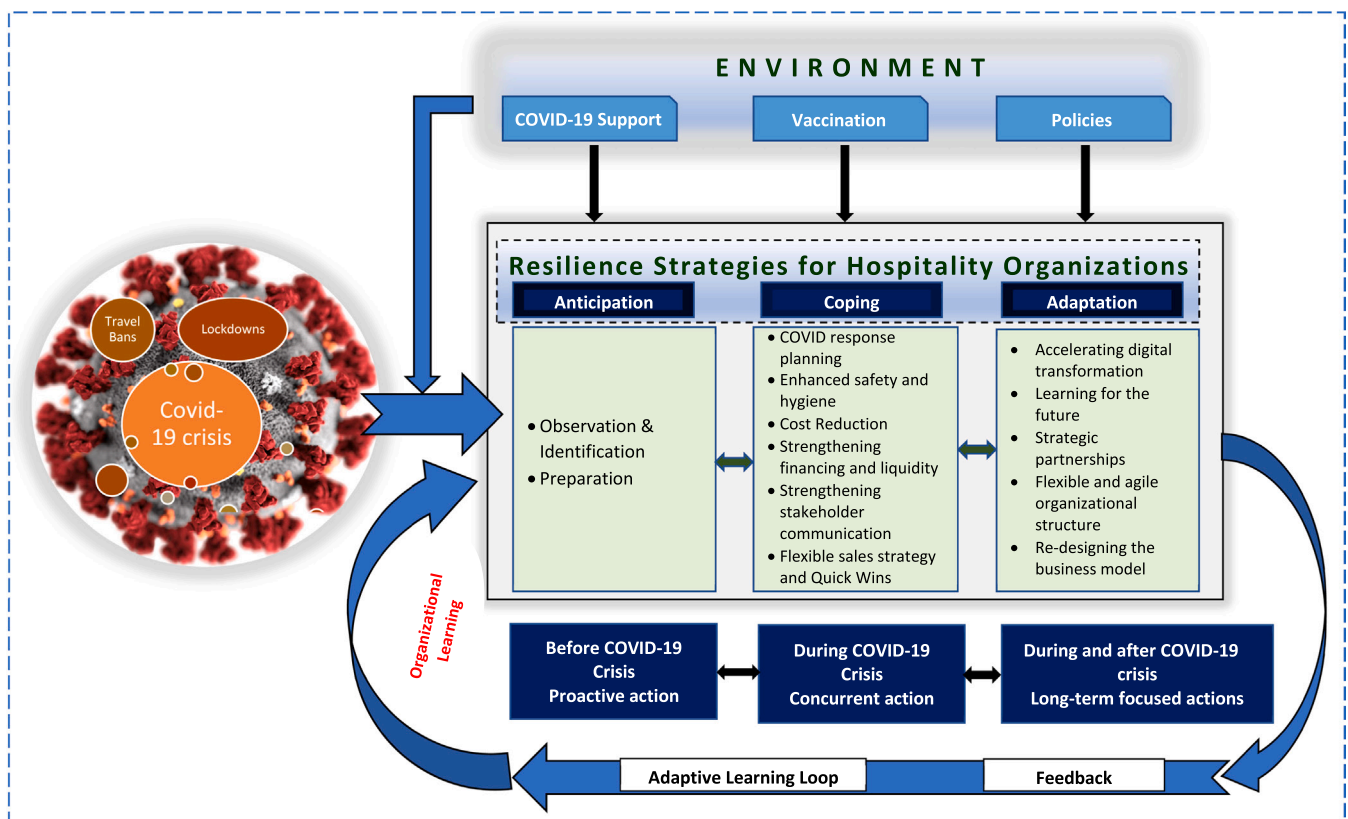

Fig. 6. Summary framework for the hospitality industry's pre-, during-, and post-responses to the COVID-19 crisis.

Redesign the business model

- Introduce innovative products and services
- Target new market segments and offer services that adapt to their needs
  - *Staycationers*
  - *Virtual & Hybrid events*
  - *Bleisure*

Embrace the new normal

- Upgraded safety and hygiene protocols and programs
  - *Partner with specialized companies in the field of cleanliness and hygiene supplies, standards and certification*
  - *Assign a team member to monitor employee compliance*
  - *Train employees to adopt the new normal*

Seek out and strengthen strategic partnerships

- Specialized cleanliness and hygiene companies to enhance protocols
- Financial institutions such as banks to provide you with needed liquidity
- Technology companies to help in accelerating digitalization
- Charitable organizations and NGOs to reach the local communities
- Local partners with the aim of sharing resources or capabilities
- Educational and training institutions to train employees

Turn to new ways of doing work

- Embrace a lean and agile organizational structure
- Invest in a cross-trained and multi-skilled workforce
- Embrace a clustered approach to operations
- Continue to use hybrid working arrangements
- Develop virtual platforms to enable employees to share best practices

Accelerate digital transformation

- Improve customers' digital experience
  - *Contactless services*
  - *Use artificial intelligence to improve service personalization*
- Improve digital capabilities
  - *Digital solutions that support remote working, online training, etc.*

Re-think stakeholder relationships

- Employees: Resources to support new normal and focus on menta health and wellbeing
- Customers: Improve digital experiences and enhance customers' perception of value
- Local communities: Act responsibly to local communities and support good causes

Time to reflect

- Rethink your strategies and refine your future priorities
  - *Increased focus on customer safety and security*
  - *Increased investment in data security and data analytics*
  - *Increased focus on optimization strategies and tools*
  - *Increased focus on certification programs and schemes*
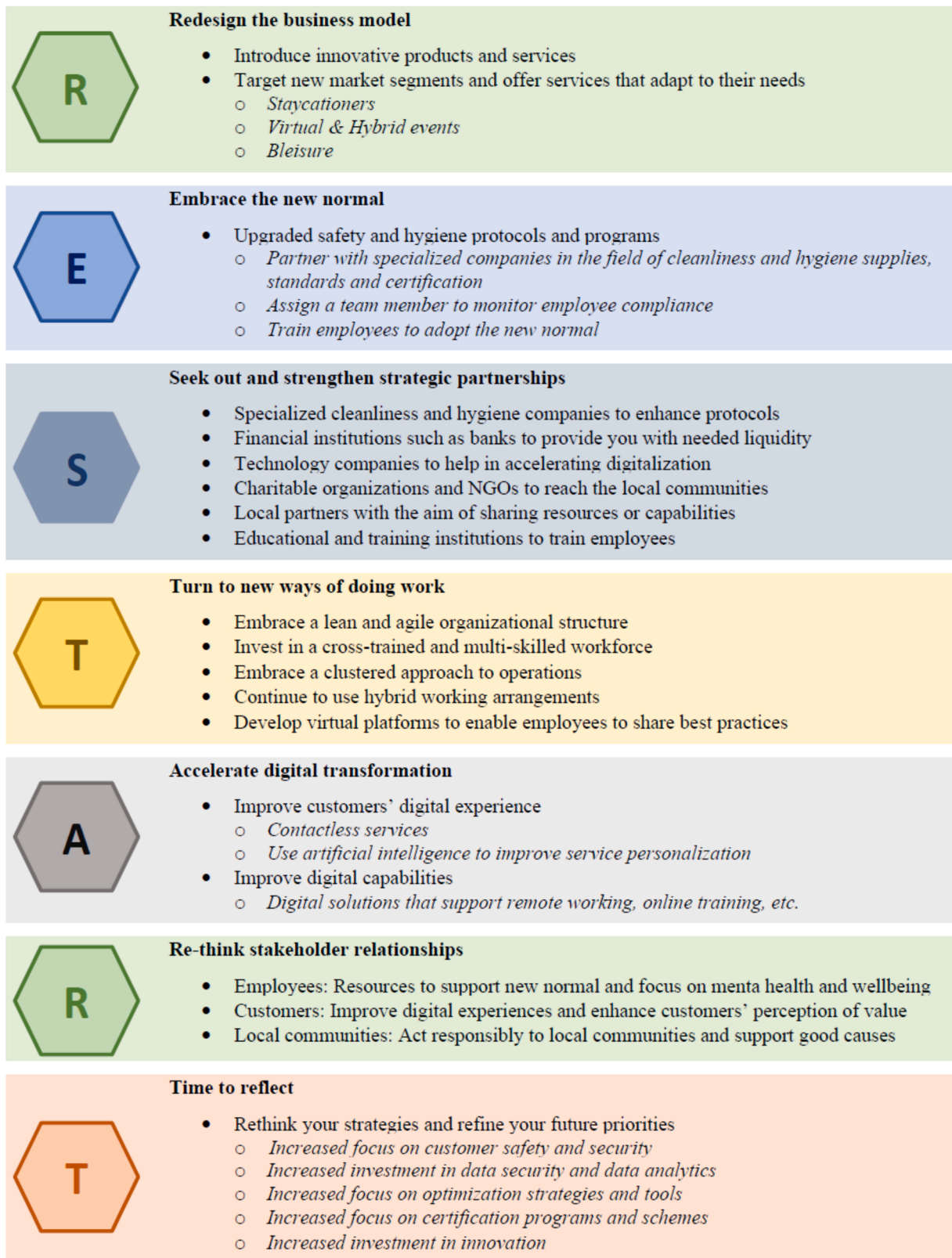 - *Increased investment in innovation*

Fig. 7. RESTART action framework.

This could be achieved by collaborating with well-known third parties, such as Ecolab, to develop and implement programs that keep pace with the industry's highest hygiene standards.

The S is for "Seek out and strengthen strategic partnerships". Significant resources and know-how are needed to overcome the challenges imposed by the COVID-19 virus. Therefore, hospitality firms need to create partnerships with those organizations that can provide the finances, technical competencies, and creative ideas they need to develop new products, apply new technologies, change structures, and exploit new opportunities. In the current study, the benefit of these partnerships

can be appreciated by the IHBs collaboration with Visa, to create new digital payment solutions and with Deloitte to boost employee resilience.

The first T is for "Turn to new ways of doing work". The COVID-19 pandemic highlighted how wasteful some firm hierarchies were. Therefore, hospitality organizations should seek to reduce their obligations and maximize employee productivity by maintaining a small but multi-talented and efficient workforce and creating a flexible and communicative environment. This could be achieved by training employees to handle multiple roles at the same time, so housekeeping staff can also act as food and beverage staff for example, or by grouping business functions, such as bringing the procurement and accounting departments together.

The A is for "Accelerate digital transformation". Concerns about virus exposure increased the urgency of replacing physical services with digital ones. Digitalization, on the other hand, will undoubtedly continue to be important in the future for other health crises as well as improving product range and diversity. Therefore, hospitality firms should look to make the most of available digital tools. There are many examples of how to do this in the results of the current study, from adopting virtual reality technologies to promote the property, to launching dedicated mobile apps to manage experience elements, and creating virtual communities for employees or franchisees.

The second R is for "Re-think stakeholder relationships". The aim of all businesses is to create value. Employees, customers, and local communities are intimately connected to this goal. Therefore, hospitality firms must ensure the wellbeing of employees, adapt their value proposition to changing customer expectations, and collaborate with local communities to enhance the value of their destination(s). For example, by applying and strengthening facilities to support employee mental health, coaching staff to be more empathetic to customers, and prioritizing local suppliers and entrepreneurs.

The second T is for "Time to reflect". The COVID-19 pandemic has prompted the hospitality industry to rethink what was, is, and will be important. The threat of new COVID-19 waves, or even a new health epidemic, is looming over everyone. Moreover, as more and more firms adapt to the post COVID-19 era, there is the threat of being left behind. Therefore, hospitality firms need to reconsider the way they operate and the way they will meet future challenges. According to the findings of the current study, hospitality organizations have implemented a number of measures in this regard. These included making stronger preparations for future crises, using data analytics to predict market trends and changes, and redesigning products and services to better protect customers from future diseases.

7. Conclusion, limitations, and future research

7.1. Conclusion

The purpose of this research was to develop a better understanding of the immediate and lasting effects of the COVID-19 pandemic on the hospitality industry. It was launched on the premise that the hospitality industry could be treated as a complex adaptive system and that the COVID-19 crisis caused the conditions of this system to change. It was anticipated that the construct of organizational resilience would be an effective framework to measure how the system had responded to these changing conditions. To this end, two separate studies were conducted. In the first, a series of interviews were conducted with managers from a sample of hotels in Oman. In the second study, a content analysis of the websites and annual reports from a sample of IHBs was performed. With the results of these two studies, the four questions of this research can now be answered.

With respect to the first question, the response of the Omani hospitality industry was quite limited. Based on our sample, Omani hospitality firms only looked to cope with the immediate effects of the pandemic, and few were concerned with anything beyond their short-term survival. For the second question, the response of the international hospitality industry was much more balanced. Based on our sample, IHBs were active in anticipating and coping with the pandemic. Moreover, these brands were generally concerned with improving their long-term survival by adapting to the new conditions imposed by the coronavirus. Regarding the third question, the hospitality industry, as a whole, has become more sensitive to risk, and hospitality firms have become more diversified, leaner and more agile, more people-centric, and more digitalized. Concerning the fourth question, we propose our "RESTART" action framework as a guide to support struggling hospitality firms adapt to the new conditions imposed by the coronavirus and future epidemics.

Consequently, this research has made four important contributions. First, it has created valuable new information about the pandemic's effects on a country and a region that has received sparse academic attention. Second, it has examined the international hospitality industry's COVID-19 responses in an original international context. Third, it has demonstrated how the pandemic has led to permanent long-term changes in the hospitality industry. Fourth, it has made a novel and positive contribution to managerial practice during a period of high confusion and uncertainty.

7.2. Limitations and future research

It should be noted that this research has been constrained by several limitations. In the first study, the sample was restricted to Oman. While this has allowed for a glimpse into the wider Arab Gulf region, it is not sufficient evidence of the region's experience with the COVID-19 pandemic. We call on future researchers to use the construct of organizational resilience to investigate the responses of hospitality organizations in other Arab countries to the COVID-19 pandemic. The first study also adopted a unidirectional approach, only investigating the perspectives of hotel managers. We encourage future researchers to explore other local actors (e.g., The Ministry of Heritage and Tourism, banks, business associations, etc.). In addition, the data for this study was collected at the height of the pandemic, and, as such, the participants' responses may have been influenced by their strong emotional reactions to the crisis at that time. Therefore, to verify for bias, this study should be repeated once the pandemic is over. In the second study, a content analysis methodology was employed. It should be appreciated that the material used was carefully presented by the IHBs, who may be biased. Therefore, we ask future researchers to complement our content analysis with further investigations using different qualitative and quantitative methodologies. Furthermore, it may be that the researchers' own biases influenced the content analysis process. Therefore, future researchers should use other text mining methods, such as topic modeling, where the threat of researcher bias is reduced. Lastly, this research used samples of hotels for manageability. However, the hospitality industry encompasses more than just this type of business. Accordingly, we request that future researchers recreate the two studies of this research, but with a focus on other hospitality businesses (e.g., restaurants, tour operators, airlines, etc.).

Declarations of interest

None.

Data availability

Data will be made available on request.

References

Abhari, S., Jalali, A., Jaafar, M., Tajaddini, R., 2021. The impact of Covid-19 pandemic on small businesses in tourism and hospitality industry in Malaysia. J. Res. Mark. Entrep. 24 (1), 75–91.

Aigbedo, H., 2021. Impact of COVID-19 on the hospitality industry: a supply chain resilience perspective. Int. J. Hosp. Manag. 98, 103012.

Allaberganov, A., Preko, A., Mohammed, I., 2021. Government commitment to tourism and hospitality sector during COVID-19 pandemic. Tour. Crit.: Pract. Theory 2 (2), 153–169.

Alonso, A.D., Kok, S.K., Bressan, A., O'Shea, M., Sakellarios, N., Koresis, A., Santoni, L.J., 2020. COVID-19, aftermath, impacts, and hospitality firms: an international perspective. Int. J. Hosp. Manag. 91, 102654.

Altuntas, F., Gok, M.S., 2021. The effect of COVID-19 pandemic on domestic tourism: a DEMATEL method analysis on quarantine decisions. Int. J. Hosp. Manag. 92, 102719.

Atsız, O., Cifci, I., 2021. Can we imagine the meal-sharing economy without service providers? The impact of COVID-19. J. Hosp. Tour. Manag. 49, 172–177.

Bajrami, D.D., Terzić, A., Petrović, M.D., Radovanović, M., Tretiakova, T.N., Hadoud, A., 2021. Will we have the same employees in hospitality after all? The impact of COVID-19 on employees' work attitudes and turnover intentions. Int. J. Hosp. Manag. 94, 102754.

Baker, R.E., Mahmud, A.S., Miller, I.F., Rajeev, M., Rasambainarivo, F., Rice, B.L., Metcalf, C.J.E., 2022. Infectious disease in an era of global change. Nat. Rev. Microbiol. 20 (4), 193–205.

Baloch, Q.B., Maher, S., Shah, S.N., Sheeraz, M., Iqbal, N., Raza, H., 2022. Revitalization of tourism and hospitality sector: preempting pandemics through lessons learned. Environ. Sci. Pollut. Res. 1–13.

Baum, T., Hai, N.T.T., 2020. Hospitality, tourism, human rights and the impact of COVID-19. Int. J. Contemp. Hosp. Manag. 32 (7), 2397–2407.

Bengtsson, M., 2016. How to plan and perform a qualitative study using content analysis. Nurs. Open 2, 8–14.

Boin, A., Hart, P.T., Kuipers, S., 2018. The crisis approach. In: Rodríguez, H., Donner, W., Trainor, J.E. (Eds.), Handbook of disaster research. Springer, Cham, pp. 23–38.

Bonfanti, A., Vigolo, V., Yfantidou, G., 2021. The impact of the Covid-19 pandemic on customer experience design: the hotel managers' perspective. Int. J. Hosp. Manag. 94, 102871.

Brand Finance (2021). HOTELS 50 2021 RANKING. Retrieved from https://brandirectory.com/rankings/hotels/table (Accessed February 5, 2022).

Bressan, A., Alonso, A.D., Vu, O.T.K., & O'Brien, S. (2022). Exploring key factors sustaining micro and small food, wine and hospitality firms through the COVID-19 crisis. Br. Food J. (ahead-of-print).

Brida, J.G., Driha, O.M., Ramón-Rodríguez, A.B., Scuderi, R., 2015. Dynamics of internationalisation of the hotel industry: the case of Spain. Int. J. Contemp. Hosp. Manag. 27 (5), 1024–1047.

Broshi-Chen, O., Mansfeld, Y., 2021. A wasted invitation to innovate? Creativity and innovation in tourism crisis management: a QC&IM approach. J. Hosp. Tour. Manag. 46, 272–283.

Buhalis, D., Leung, R., 2018. Smart hospitality—Interconnectivity and interoperability towards an ecosystem. Int. J. Hosp. Manag. 71, 41–50.

Bundy, J., Pfarrer, M.D., Short, C.E., Coombs, W.T., 2017. Crises and crisis management: Integration, interpretation, and research development. J. Manag. 43 (6), 1661–1692.

Burnard, P., 1995. Interpreting text: an alternative to some current forms of textual analysis in qualitative research. Soc. Sci. Health 1, 236–245.

Carmichael, T., Hadžikadić, M., 2019. The fundamentals of complex adaptive systems. In: Carmichael, T., Collins, A.J., Hadžikadić, M. (Eds.), Complex adaptive systems: views from the physical, natural, and social sciences. Springer Nature Switzerland AG, pp. 1–16.

Chandrasekera, T., Hebert, P., 2018. Emergency preparedness in the hospitality industry in Sri Lanka. Int. J. Disaster Resil. Built Environ. 10 (2/3), 167–174.

Clark, J., Mauck, N., Pruitt, S.W., 2021. The financial impact of COVID-19: evidence from an event study of global hospitality firms. Res. Int. Bus. Financ. 58, 101452.

Coles, T., Ritchie, B.W., Wang, J., 2021. Building business resilience to external shocks: conceptualising the role of social networks to small tourism & hospitality businesses. J. Hosp. Tour. Manag. 48, 210–219.

Colmekcioglu, N., Dineva, D., & Lu, X. (2022). "Building back better": the impact of the COVID-19 pandemic on the resilience of the hospitality and tourism industries. Int. J. Contemp. Hosp. Manage. (ahead-of-print).

Coombs, W.T., Laufer, D., 2018. Global crisis management–current research and future directions. J. Int. Manag. 24 (3), 199–203.

Cuomo, M.T., Tortora, D., Danovi, A., Festa, G., Metallo, G., 2022. Toward a 'New Normal'? Tourist preferences impact on hospitality industry competitiveness. Corp. Reput. Rev. 1–14.

Ding, X., Gao, B., Liu, S., 2022. Understanding the interplay between online reviews and growth of independent and branded hotels. Decis. Support Syst. 152, 113649.

Dobie, S., Schneider, J., Kesgin, M., Lagiewski, R., 2018. Hotels as critical hubs for destination disaster resilience: An analysis of hotel corporations' CSR activities supporting disaster relief and resilience. Infrastructures 3 (4), 46.

Duchek, S., 2020. Organizational resilience: a capability-based conceptualization. Bus. Res. 13 (1), 215–246.

Fang, S., Prayag, G., Ozanne, L.K., de Vries, H., 2020. Psychological capital, coping mechanisms and organizational resilience: Insights from the 2016 Kaikoura earthquake, New Zealand. Tour. Manag. Perspect. 34, 100637.

Fereday, J., Muir-Cochrane, E., 2006. Demonstrating rigor using thematic analysis: a hybrid approach of inductive and deductive coding and theme development. Int. J. Qual. Methods 5 (1), 80–92.

Fieguth, P., 2017. An introduction to complex systems: Society, ecology, and nonlinear dynamics. Springer,, Cham.

Foroudi, P., Tabaghdehi, S.A.H., Marvi, R., 2021. The gloom of the COVID-19 shock in the hospitality industry: a study of consumer risk perception and adaptive belief in the dark cloud of a pandemic. Int. J. Hosp. Manag. 92, 102717.

Garrido-Moreno, A., Garcia-Morales, V.J., Martin-Rojas, R., 2021. Going beyond the curve: strategic measures to recover hotel activity in times of COVID-19. Int. J. Hosp. Manag. 96, 102928.

Ge, H., Chen, S., Chen, Y., 2018. International alliance of green hotels to reach sustainable competitive advantages. Sustainability 10 (2), 573.

Ghaderi, Z., King, B., Hall, C.M., 2021. Crisis preparedness of hospitality managers: evidence from Malaysia. J. Hosp. Tour. Insights 5 (2), 292–310.

Gupta, V., Sahu, G., 2021. Reviving the Indian hospitality industry after the Covid-19 pandemic: the role of innovation in training. Worldw. Hosp. Tour. Themes 13 (5), 599–609.

Hahang, E., Bayraktar, S., Jiménez, A., 2022. Early evidence of leadership skills and strategies in managing the impact of COVID-19 pandemic in the hospitality industry. Cross Cult. Strateg. Manag. 29 (3), 493–515.

Hall, A.D., Fagen, R.E., 2017. Definition of system. In: Buckley, W. (Ed.), Systems Research for Behavioral Sciencesystems Research. Routledge, pp. 81–92.

Hartman, S., 2018. Towards adaptive tourism areas: using fitness landscapes for managing and futureproofing tourism area development. J. Tour. Futures 4 (2), 152–162.

Hemmington, N., Neill, L., 2022. Hospitality business longevity under COVID-19: the impact of COVID-19 on New Zealand's hospitality industry. Tour. Hosp. Res. 22 (1), 102–114.

Hillmann, J., Guenther, E., 2021. Organizational resilience: a valuable construct for management research? Int. J. Manag. Rev. 23 (1), 7–44.

Huang, A., De la Mora Velasco, E., Marsh, J., Workman, H., 2021. COVID-19 and the future of work in the hospitality industry. Int. J. Hosp. Manag. 97, 102986.

Jafari, K., Özduran, A., Saydam, M.B. (2021). Hospitality and tourism industry amid COVID-19 pandemic: Voices from small Mediterranean town. Int. Hosp. Rev. (ahead-of-print).

Jones, T.E., 2016. Evolving approaches to volcanic tourism crisis management: an investigation of long-term recovery models at Toya-Usu Geopark. J. Hosp. Tour. Manag. 28, 31–40.

Lado-Sestayo, R., Otero-Gonzalez, L., Vivel-Búa, M., Martorell-Cunill, O., 2016. Impact of location on profitability in the Spanish hotel sector. Tour. Manag. 52, 405–415.

Lam, C., Ho, G.K., Law, R., 2015. How can Asian hotel companies remain internationally competitive? Int. J. Contemp. Hosp. Manag. 27 (5), 827–852.

Leta, S.D., Chan, I.C.C., 2021. Learn from the past and prepare for the future: a critical assessment of crisis management research in hospitality. Int. J. Hosp. Manag. 95, 102915.

Liu, B., Pennington-Gray, L., Klemmer, L., 2015. Using social media in hotel crisis management: the case of bed bugs. J. Hosp. Tour. Technol. 6 (2), 102–112.

Liu, J., Tong, T.W., Sinfield, J.V., 2021. Toward a resilient complex adaptive system view of business models. Long. Range Plan. 54 (3), 102030.

Liu, M.T., Wang, S., McCartney, G., Wong, I.A., 2021. Taking a break is for accomplishing a longer journey: hospitality industry in Macao under the COVID-19 pandemic. Int. J. Contemp. Hosp. Manag. 33 (4), 1249–1275.

McCartney, G., Pinto, J., Liu, M., 2021. City resilience and recovery from COVID-19: the case of Macao. Cities 112, 103130.

Meira, J.V.D.S., Dos Anjos, S.J.G., Falaster, C.D., 2019. Innovation and performance in the hotel industry. J. Qual. Assur. Hosp. Tour. 20 (2), 185–205.

Miles, D.A., 2017. A taxonomy of research gaps: Identifying and defining the seven research gaps. Doctoral Student Workshop: Finding Research Gaps-Research Methods and Strategies, Dallas, Texas 1–15.

Miles, M., Huberman, A.M., & Saldana,˜ J. (2014). Qualitative data analysis: A methods sourcebook (3rd ed.). Thousand Oaks, CA: Sage.

NCSI (2020), "Statistical Yearbook 2020." https://www.ncsi.gov.om/Elibrary/Pages/LibraryContentDetails.aspx?ItemID=%2ffm%2fapwu0drCXa%2fPQ1fExQ%3d%3d (Accessed August 30, 2021).

Nofre, J., Garcia-Ruiz, M., Fuarros, I.S., Pires, C.V., 2020. Hopes and uncertainties in the nightlife industry of post-COVID-19 Europe. Finisterra 55 (115), 249–254.

Ntounis, N., Parker, C., Skinner, H., Steadman, C., Warnaby, G., 2022. Tourism and Hospitality industry resilience during the Covid-19 pandemic: evidence from England. Curr. Issues Tour. 25 (1), 46–59.

Pajo, B. (2018), "Introduction to Research Methods." SAGE.

Pappas, N., 2015. Marketing hospitality industry in an era of crisis. Tour. Plan. Dev. 12 (3), 333–349.

Pappas, N., Brown, A.E., 2020. Entrepreneurial decisions in tourism and hospitality during crisis. Manag. Decis. 59 (5), 1025–1042.

Patton, M.Q., 1999. Enhancing the quality and credibility of qualitative analysis. Health Serv. Res. 34 (5 Pt 2), 1189.

Pillai, S.G., Haldorai, K., Seo, W.S., Kim, W.G., 2021. COVID-19 and hospitality 5.0: redefining hospitality operations. Int. J. Hosp. Manag. 94, 102869.

Razumova, M., Ibáñez, J.L., Palmer, J.R.M., 2015. Drivers of environmental innovation in Majorcan hotels. J. Sustain. Tour. 23 (10), 1529–1549.

Rodríguez-Victoria, O.E., Puig, F., González-Loureiro, M., 2017. Clustering, innovation and hotel competitiveness: evidence from the Colombia destination. Int. J. Contemp. Hosp. Manag. 29 (11), 2785–2806.

Sanabria-Díaz, J.M., Aguiar-Quintana, T., Araujo-Cabrera, Y., 2021. Public strategies to rescue the hospitality industry following the impact of COVID-19: a case study of the European Union. Int. J. Hosp. Manag. 97, 102988.

Sheresheva, M.Y., Oborin, M.S., Polyanskaya, E.E., 2018. International hotel chains in Russia: the prospects and challenges of movement from megacities to smaller cities in Russian regions. Worldw. Hosp. Tour. Themes 10 (4), 421–435.

Shukla, B., Sufi, T., Joshi, M., & Sujatha, R. (2022). Leadership challenges for Indian hospitality industry during COVID-19 pandemic. J. Hosp. Tour. Insights, (ahead-of-print).

Sigala, M., 2020. Tourism and COVID-19: Impacts and implications for advancing and resetting industry and research. J. Bus. Res. 117, 312–321.

Sigala, M., 2021. A bibliometric review of research on COVID-19 and tourism: Reflections for moving forward. Tour. Manag. Perspect. 40, 100912.

Singal, M., 2015. How is the hospitality and tourism industry different? An empirical test of some structural characteristics. Int. J. Hosp. Manag. 47, 116–119.

Sobaih, A.E.E., Elshaer, I., Hasanein, A.M., Abdelaziz, A.S., 2021. Responses to COVID-19: the role of performance in the relationship between small hospitality enterprises' resilience and sustainable tourism development. Int. J. Hosp. Manag. 94, 102824.

Soliku, O., Kyiire, B., Mahama, A., Kubio, C., 2021. Tourism amid COVID-19 pandemic: impacts and implications for building resilience in the eco-tourism sector in Ghana's Savannah region. Heliyon 7 (9), e07892.

Thurner, S., Hanel, R., & Klimek, P. (2018). Introduction to the theory of complex systems. Oxford University Press.

Vij, M., Upadhya, A., Abidi, N., 2021. Sentiments and recovery of the hospitality sector from Covid-19–a managerial perspective through phenomenology. Tour. Recreat. Res. 46 (2), 212–227.

WHO. (2022). Timeline: WHO's COVID-19 response. World Health Organization. Retrieved from https://www.who.int/emergencies/diseases/novel-coronavirus-2019/interactive-timeline#event-72 (Accessed February 3, 2022).

Xu, X., Gursoy, D., 2015. A conceptual framework of sustainable hospitality supply chain management. J. Hosp. Mark. Manag. 24 (3), 229–259.

Yacoub, L., ElHajjar, S., 2021. How do hotels in developing countries manage the impact of COVID-19? The case of Lebanese hotels. Int. J. Contemp. Hosp. Manag. 33 (3), 929–948.

Yang, Z., Yin, M., Xu, J., Lin, W., 2019. Spatial evolution model of tourist destinations based on complex adaptive system theory: a case study of Southern Anhui, China. J. Geogr. Sci. 29 (8), 1411–1434.

Yeon, J., Song, H.J., Yu, H.C., Vaughan, Y., Lee, S., 2021. Are socially responsible firms in the US tourism and hospitality industry better off during COVID-19? Tour. Manag. 85, 104321.

Youssef, A.B., Redzepagic, S., & Zeqiri, A. (2022). The key changes to the hospitality business model under COVID-19. Int. J. Strateg. Manage. Decis. Support Syst. Strateg. Manage., (ahead-of-print).