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Sensing the Virus

How Social Capital Enhances Hoteliers' Ability to Cope With COVID-19

Abstract

In this study, we propose a broad conceptual model that incorporates social capital dimensions and problem-solving routines to understand the determinants behind hotel managements' perception of and ability to cope with the COVID-19 pandemic—and thus, to innovate their service offering. We provide empirical support for the notion that, due to uncertainty about reopening after lockdown, the hospitality sector has found existing problem-solving routines to be of little use. Although the local community has been unable to form a shared vision around the pandemic, hoteliers have nevertheless relied on their network of relationships to sense the crisis and find their own ways to adapt. Interestingly, we find that overreliance on trustworthy relationships can diminish the ability to sense a crisis objectively. Our results not only shed light on sensemaking in the hotel industry, but also grapple with the theoretical nature of sensemaking as a socially constructed process.

Keywords: *Service innovation; COVID-19; hotel; sensemaking; social capital*

1. Introduction

The global spread of the virus responsible for COVID-19 is a multi-tiered travesty: a natural disaster, a socio-political crisis, an economic crisis, and also a tourism demand crisis (Zenker & Kock, 2020). That said, the situation is not wholly unexpected. Scholars commonly accept that “crises are inevitable in the hospitality industry” (Barton, 1994, p. 59); thus, hospitality managers should have crisis management plans in place to support their business when disaster strikes. Crises in business are not uncommon, but they are unpredictable and require responses that are not included in normal organizational routines (Perrow, 2011). Thus, crises require “enacted sensemaking”, which entails interpreting the environment that generated the crisis and reacting accordingly (Angeli & Montefusco, 2020; Giuliani, Lorenzoni, & Visentin, 2015; Thomas, Clark, & Gioia, 1993; Weick, 1988; Weick, Sutcliffe, & Obstfeld, 2005).

The lessons learned from the Severe Acute Respiratory Syndrome (SARS) epidemic in 2003 in Singapore revealed the importance of devising strategies to provide new opportunities and limit damage in the face of such emergencies (Chien & Law, 2003). In the wake of such crises, organizations engage in environmental scanning and interpretation to devise their response (Thomas et al., 1993).

The most successful firms are those that can quickly innovate their service offerings to meet the moment. However, hospitality research has devoted less attention to the reasons behind the adoption of innovation compared to other industries (Martín-Rios & Ciobanu, 2019; Montañés-Del-Río & Medina-Garrido, 2020; Pikkemaat, Peters, & Bichler, 2019). The extant literature suggests that local clusters of firms are the primary drivers of innovation and service changes in a region (García-Villaverde et al., 2017; Ruiz-Ortega, Parra-Requena, & García-Villaverde, 2016). A reason is social capital: Defined as the “stock” of actual and potential resources that a company can access through its network of relations (Nahapiet & Ghoshal, 1998), social capital plays a key role in the development of innovations (Dai et al., 2015; Lee, Cho, & Wang, 2013A). In fact, the social environment in which the economic action is embedded provides opportunities for developing both incremental and radical innovations (Czernek-Marszalek, 2020; García-Villaverde et al., 2017; Kim & Shim, 2018).

Against this background, we propose two forces that could be used to alert hotel management to an emerging crisis, such as the COVID-19 pandemic, and change their service(s) accordingly. First, correctly interpreting the environment and designing new organizational architectures or settings may depend on an external force that draws from the overall stock of formal and informal relationships with local and distant actors (Cappiello et al., 2020; Dai et al., 2015; Giuliani, 2007; Nigam & Ocasio, 2011). Second, the processes of sensemaking and adapting the provided service require an internal force that is

activated by the stock of ability to solve problems (Giuliani et al., 2015; Perrow, 2011; Thomas et al., 1993). We enhance our model by accounting for the moderation effect of firms' involvement in the local community (Cappiello et al., 2020) and their perceived uncertainty (García-Villaverde et al., 2017).

We provide empirical support by analyzing a sample of more than half the total population of hotels in a popular touristic destination located in Emilia-Romagna (Italy). Our results offer a new and intriguing view of how companies might prepare themselves for strong and unpredictable shocks, such as the COVID-19 pandemic and its related lockdown. The speed at which the COVID-19 pandemic developed in early 2020, and the subsequent country-wide lockdown, exhausted most hoteliers' stock of normal problem-solving routines. In turn, managers were forced to look elsewhere for guidance on security policies and how to reopen safely. The pandemic also forced hotels to draw on their stock of social relationships, prompting careful assessment of not only their own position and involvement in the local community, but also the trustworthiness of other local actors.

The rest of the paper is organized as follows. Section 2 describes the 2020 COVID-19 crisis in general and its effects on the hospitality industry in Emilia-Romagna in particular. In Section 3, we present some background assumptions before developing the hypotheses of the study. Section 4 includes the methodology and data. We present our results in Section 5. In Section 6, we present and interpret our results, offer insights for hoteliers and policymakers, and suggest areas for further research.

2. The 2020 COVID-19 crisis

Diseases can spread swiftly in an increasingly globalized world, affecting not only people's health, but also all types of businesses; as a result, companies must be well prepared for all contingencies. There have been few better tests of this axiom than the COVID-19 pandemic. Since November 17, 2019 and the first reported case of COVID-19 in Wuhan in Hubei province, China, the world has experienced the greatest pandemic of the 21st century. Several countries decided first to close their borders (as happened in Europe, which was the first time borders had been closed since the creation of the Schengen Area in 1995) and quarantine their population—with the exception of businesses deemed “essential” (such as supermarkets, hospitals, and bakeries). This lockdown has had a significant impact on businesses, which have tried to deliver their best service despite the unprecedented circumstances. The President of the Federation of Italian Hotel and Tourism Associations declared (2020/05/07) that the impact of COVID-19 on the Italian hospitality sector has been devastating. He highlighted the dramatic fall in the number of guests in Italian accommodations in March (-92.3% for foreigners and -85.9% for Italians) and the

total collapse of the market in April (-99.1% for foreigners and -96.4% for Italians). These figures represent a fall in visitor numbers of over 305 million in 2020 (-71.2% compared to 2018), with a corresponding drop in turnover in the hospitality sector of almost EUR 17 billion (-71.4%) (www.federalberghi.it/comunicati).

Our research started immediately after the lockdown, at the beginning of the summer season, when “hoteliers are a little more confident of the future than before and, although some hotels are still closed, they are much less than what was initially supposed” (2020/06/25, Massimo Leardini, President of Misano Adriatico Hoteliers Association). The tourism industry in general has been hit very hard, especially given the timing of the lockdown and the start of the summer season. In southern Europe, Emilia-Romagna is one of the major tourist destinations; with a coastline on the Adriatic Sea, the region serves as the border between northern and central Italy. It was one of the first regions in Italy to be classified as a “red zone” and thus to take the full impact of the lockdown (for a timeline of events, see Table 1). According to data from *Osservatorio del turismo dell'Emilia-Romagna*, the impact of COVID-19 on Emilia-Romagna’s overall tourism industry in the period March–August can be calculated as a drop of 19.2 million (-42%) Italian and foreign visitors, representing a reduction in turnover of EUR 1.18 billion. These numbers could increase to 28 million fewer admissions (-62%) and a loss of EUR 1.8 billion as a worst-case scenario. In the hospitality sector, the damage is estimated at a 55% reduction in revenues for hotel companies (EUR 1 billion) and 42% for catering (EUR 3.8 billion). Taking added value and the wealth produced in terms of GDP into account, the drop ranges between -12.43% and -18.45% for the hospitality sector and -12% and -15.5% for the catering sector (<http://imprese.regione.emilia-romagna.it>).

Insert Table 1 about here

3. Background

In this study, we assume that responding to a crisis like the COVID-19 pandemic requires that a hotel’s management can interpret the environment that generated the crisis and then adapt or change the service offer accordingly (Giuliani et al., 2015; Thomas et al., 1993; Weick, 1988; Weick et al., 2005). A crisis can facilitate decision-making, since perceiving an issue as a threat intensifies concerns about efficiency and restricts the number of considerable alternatives for action—galvanizing a process known as *enacted*

sensemaking (Nigam & Ocasio, 2010; Thomas et al., 1993; Weick, 1988). In this process, actions facilitate the interpretation of the environment and the representation of events, stimulating the willingness to learn (Lampel, Shamise, & Shapira, 2009). Future actions are then based on the actors' increasing attention to the event (Gioia & Chittipeddi, 1991; Seligman, 2006; Weick et al., 2005). In turn, companies attempt to design a new organizational architecture following a process known as *sensegiving* (e.g., Gioia & Chittipeddi, 1991; Giuliani et al., 2015; Maitilis, 2005).

Here, we seek to understand what drives the reaction to the COVID-19 pandemic among a population of hotels clustered in a local area. To this end, we argue that two major forces are at work: The first force results from the hotel's cumulative relationships with external actors (*social capital* variables, Cappiello et al., 2020; Dai et al., 2015; García-Villaverde et al., 2017); the second force is galvanized by the internal stock of organizational routines (*problem-solving* variables; Giuliani et al., 2015; Gulati, Sytch, & Tatarynowicz, 2012; Krush, Agnihotri, Trainor, & Nowlin, 2013; Perrow, 2011).

3.1 Social capital

Responding to a crisis requires socially constructed processes in which individuals interact “with others to create meaning and enable action” (Christianson & Barton, 2020; Weick et al., 2005). Scholars refer to this plot of relationships as *social capital*, a concept that includes structural, relational, and cognitive dimensions (Nahapiet & Ghoshal, 1998). The *structural dimension* accounts for the connections among actors that may facilitate resource-sharing and knowledge spillover (Chen & Wang, 2008; Huggins & Thompson, 2017; Montañés-Del-Río & Medina-Garrido, 2020). The *cognitive dimension* includes shared codes, culture, and narratives that may increase the participants' mutual understanding (Cappiello et al., 2020; Chowdhury et al., 2019; García-Villaverde et al., 2017). The *relational dimension* refers to the sense of proximity among actors, based on relationships with trustworthy peers, which allows for informality and reduces the costs of acquiring information (Cappiello et al., 2020; Chen & Wang, 2008; García-Villaverde et al., 2017; Kale, Singh, & Perlmutter, 2000; Lee et al., 2013A).

To the best of our knowledge, only a few studies have examined the impact of the three dimensions of social capital on a hotel's ability to innovate the service and adapt to shocks (Chowdhury et al., 2019; Dai et al., 2015; García-Villaverde et al., 2017). Relatedly, we argue that the three dimensions of social capital affect a hotel management's sensemaking ability to cope with a crisis and subsequently innovate the service offering (Cappiello et al., 2020; García-Villaverde et al., 2017).

A shock after a crisis requires a company's management to interpret the crisis environment as a meaningful framework for action in which to facilitate a response (Giuliani et al., 2015; Thomas et al., 1993; Weick, 1988; Weick et al., 2005). In local and homogenous communities of firms, company management are more likely to "sense" the environment through codes, culture, and narratives shared between actors, the informality of relationships, and the circulation of knowledge. Consequently, *sensemaking*, as a socially constructed process, is likely to be sustained by companies' stock of relationships. Unfortunately, research in crisis and disaster management in the tourism realm lacks theoretical foundations as well as empirical support (Chowdhury et al., 2019; Ritchie & Jiang, 2019).

The accumulation of knowledge and experience based on the external network of relationships, which constitutes the *structural dimension* of social capital, improves firms' adaptive capability (Casanueva, Gallego, & Revilla, 2015; Lee et al., 2013A; Wilke, et al., 2019). Among the benefits of the *structural dimension*, the literature highlights the ability to learn collectively and respond to a disaster, which can sustain a better recovery and promote adaptive resilience (Chowdhury et al., 2019; Nilakant et al., 2014). Furthermore, when facing disruptive or rare events, the literature suggests that the *cognitive dimension* of social capital stimulates a company's constructive cognitive orientation, providing a sense of direction despite uncertainty limiting the ability to take appropriate action to secure the organization (Chowdhury et al., 2019; Lee, Vargo, & Seville, 2013B; Nilakant et al., 2014; Prasad et al., 2015). Moreover, norms foster cooperation between actors in a network (Huang & Liu, 2019; Zheng, 2010). Finally, past research reports that trustworthy firms may benefit from the network of supplier partners, who provide resources and services to cushion the aftermath of the disruptive event (Chowdhury et al, 2019; Prasad et al., 2015; Seville et al., 2014). When unexpected events shock a business community, networks of trustworthy relationships find new momentum by reactivating and consolidating social ties found in local and distant searches, suggesting an effect of the *relational dimension* of social capital on hotels' ability to cope with the crisis (Granovetter, 1983 Kale et al., 2000; Levin, Walter, & Murnighan, 2011). These speculations lead to the following hypothesis:

H1: Hotel managers' sensemaking is positively affected by (H1a) the structural, (H1b) the cognitive, and (H1c) the relational dimensions of their social capital.

Even though tourism research does not have a long tradition in innovation studies compared to other industries (e.g., Martín-Rios & Ciobanu, 2019; Kim & Shim, 2018; Lee et al., 2013A), scholars in the

field agree that networked firms may generate a favorable context that ultimately drives them toward innovation (García-Velazquez et al., 2017; Johnson et al., 2004; Krush et al., 2013; Petrou & Daskalopoulou, 2013). Moreover, a local community can facilitate the imitation of solutions and the adoption of alternatives, as well as their legitimization and social acceptance (Giuliani et al., 2015).

Meeting other entrepreneurs and managers may also have an impact on hotels' innovation capacity (Chen & Wang, 2008; Huggins & Thompson, 2017; Montañés-Del-Río & Medina-Garrido, 2020). Consequently, the *structural dimension* of social capital may facilitate innovation through social learning, social influence and joint evaluation (Lee et al., 2013A; Maula et al., 2003; Molina-Morales & Martínez-Fernandez, 2010). Within a community of firms, norms facilitate innovation (Doh & Acs, 2010; Lee et al., 2013A): The decision to innovate may be positively affected by the endorsement of social norms, which are perceived through formal and informal interactions. Thus, the specific standards and norms of a company's social environment, included in the *cognitive dimension* of social capital, may have a positive relationship with innovation and thereby ensure legitimacy and recognition (Huang & Liu, 2019; Nahapiet & Ghoshal, 1998; Zheng, 2010). Finally, Lee and colleagues (2013A) note that trust, an integral part of the *relational dimension* of social capital, can stimulate innovation. Indeed, having trustworthy relationships with other organizations not only supports the generation of ideas, but also reduces conflicts and the costs of circulating information. This is true in various domains, including tourism (Lee et al., 2013A). Therefore, we can advance the following hypothesis:

H2: Hotel managers' effectiveness in innovating the service offering is positively affected by (H2a) the structural, (H2b) the cognitive, and (H2c) the relational dimensions of their social capital.

In a local community of firms, where every economic action is embedded in a system of concrete and ongoing social relationships, some actors may assume a prominent role following their major involvement in social and collective activities (Cappiello et al., 2020; Granovetter, 1985; Lee & Kronrod, 2020; Maciel & Fischer, 2020).

On the one hand, firms may benefit from such prominence thanks to their increased opportunity to access the resources granted by social capital (Molina-Morales & Martínez-Fernández, 2010). Research agrees that associational activity facilitates cooperation and innovation through membership (Hermawan & Hutagalung, 2020; Lee et al., 2013A). This, in turn, increases the management's personal exposure in the community (which affects the ability of the *cognitive* and *relational dimensions* of social capital to

affect sensemaking and innovation ability), as well as facilitates greater access to ideas and differentiated sources of information (which impacts the effect of the *structural dimension*) (Hauser Tappeiner & Walde, 2007). On the other hand, assuming a prominent role in relationship network may produce tensions, limit additional benefits, or instill the idea that the company is behaving opportunistically (Cappiello et al., 2020). Even though the literature provides scant suggestions, we may argue that the drawbacks of major involvement outweigh the expected benefits of working together to find a way of coping with the shock of the pandemic. These speculations lead to the following moderation hypotheses:

H3: Hotel managers' involvement in the local network of relationships negatively moderates the effect of the (H3a) structural, (H3b) cognitive, and (H3c) relational dimensions of social capital on their management sensemaking.

H4: Hotel managers' involvement in the local network of relationships negatively moderates the effect of the (H4a) structural, (H4b) cognitive, and (H4c) relational dimensions of the social capital on their effectiveness in innovating the service offering.

3.2 Problem-solving

In a company's reaction to an intense shock, "the first question of sensemaking is 'what's going on here?' [and] the second, equally important question is 'what do I do next?'" (Weick et al., 2005 p. 412). However, the crisis literature has not unanimously defined the role of previous problem-solving routines and organizational knowledge and capabilities. Such routines and dynamic capabilities are central to, but not sufficient for, solving problems, adapting to environmental changes, and implementing solutions (Loch, Sengupta, & Ahmad, 2013; Nickerson, Yem, & Mahoney, 2012; Williams et al., 2017). Power, status, environmental context, experience and enthusiasm may affect an organization's ability to sense a problem and cope with it (Ann Glynn & Watkiss, 2020; Argote, Lee, & Park, 2000; Blagoeva et al., 2020; Loch, Sengupta, & Ahmad, 2013).

In the wake of a crisis, turmoil and a sense of impotence may highlight *attention to attention* under the constraint of shortened decision time frames (Ann Glynn & Watkiss, 2020; Christianson & Barton, 2020; Helfat & Peteraf, 2015; Ocasio, 2011; Treffers, Klaner, & Huy, 2020; Weick, 1988). This could have the effect of galvanizing management's enthusiasm and passion in an attempt to quickly find a meaningful framework for action and design a new organizational setting (*sensemaking* and *sensegiving*, respectively; Thomas et al., 1993; Weick, 1988, 1995; Weick et al., 2005). However, overly positive or

intense passion can limit an actor's creative problem-solving, increase the tendency to disconfirm evidence, or reduce one's recognition of changes in market conditions and thus increase stickiness (Branzei & Zietsma, 2003; Cardon et al., 2009; Drnovsek, Cardon, & Patel, 2016; Ho & Pollack, 2014; Vallerand et al., 2003).

In contrast, uncovering new directions to take depends on prior knowledge and practices (Gulati et al., 2012). In fact, managerial capabilities and organizational routines may sustain the process of *sensing* new opportunities by providing a framework for decision-making processes (Gavetti & Levinthal, 2000). This process lays the foundations for future actions, allowing the company to adapt the business to the new environment (Gioia & Chittipeddi, 1991; Weick et al., 2005). However, in the wake of an intense shock following a crisis, managerial capabilities and organizational learning routines, including those covered in their operating manuals, may not be sufficient (Giuliani et al., 2015; Perrow, 2011).

Of course, a hotel management's reaction to a crisis cannot be addressed without reference to its stock of problem-solving routines and previous organizational knowledge. That said, the intensity of the COVID-19 crisis and the subsequent lockdown may preclude the exploration of groundbreaking options that would facilitate reopening (Christianson & Barton, 2020). Hence, we propose that:

H5: Hotel managers' sensemaking is positively affected by their ability to solve problems.

H6: Hotel managers' effectiveness in innovating the service offering is positively affected by their ability to solve problems.

“The COVID-19 pandemic has created an environment that is dynamically uncertain – routines are upended, normal interactions are disrupted, and risk must be reassessed on an ongoing basis. We have rarely seen a time when sensemaking was so critical yet so difficult to accomplish” (Christianson & Barton, 2020). Notably, this uncertainty surrounding choice and action may be experienced as a situation of breakdown, surprise, interruption or opportunity (Weick et al., 2005; Williams et al., 2017). The literature suggests that uncertainty may affect an organization's ability to cope with crisis, both in terms of sensing the environment and reacting proactively in order to survive (Ann Glynn & Watkiss, 2020). The large degree of uncertainty that characterizes a crisis often prevents people from fully planning for these events (Mithani, 2020; Topper & Lagadec, 2013). Since *sensemaking* deals with equivocality, uncertainty prompts a search for meanings (Weick et al., 2005). Furthermore, the effectiveness of the response may be affected by decision-makers' ability to achieve comfort with uncertainty (Williams et

al., 2017). This ability requires diffusing decision-making across business units, as well as practicing cooperation and coordination, that are dependent on the existing pre-crisis stock of routines (Ann Glynn & Watkiss, 2020; Argote et al., 2020; Mithani, 2020; Williams et al., 2017). Based on these speculations, we suggest the following moderation hypotheses:

H7: Hotel managers' perception of uncertainty positively moderates the effect of their ability to solve problems on their management sensemaking.

H8: Hotel managers' perception of uncertainty positively moderates the effect of their ability to solve problems on their effectiveness in innovating the service offering.

Figure 1 graphically represents our conceptual model.

Insert Figure 1 about here

4. Methodology

We collaborated with a local association (*Associazione Albergatori di Misano Adriatico*) to contact all 80 hotels in the territory; for each hotel in the population, the association provided the contact details of the person who was most knowledgeable about internal efforts to address the COVID-19 emergency. As such, we were able to collect highly reliable data from key informants. First, we distributed the questionnaires in late May 2020. Next, we called the key informants personally and introduced the questionnaire over the phone. We instructed two interviewers to conduct the survey. In particular, we took care in specifying that the survey was for academic purposes and would be totally anonymous. This procedure provided 46 usable questionnaires (Category: 28.3% one- and two-star hotels; 67.4% three-star hotels; 4.3% four-star hotels; average number of rooms: 37.4). There were no statistically significant differences between hotels that did and did not participate in the survey. In particular, no differences emerged in the composition of the sample compared to the population on 1) number of stars ($p(\chi^2=.938, df=3)=.816$), 2) number of rooms ($p(\chi^2=41.61, df=40)=.401$), or 3) seasonality (i.e., summer hotel vs. annual hotel, $p(\chi^2=7.835e-03, df=1)=1$).

Finally, following the indications of the social psychology literature (Podsakoff et al., 2003), we took care to 1) utilize a minimal survey while using data from the hoteliers' association to supplement respondent information; 2) present socio-demographic questions at the end of the questionnaire; and 3)

present the dependent variables first, then the moderators, and then the independent constructs. In order to keep participants' attention level high, we also asked them to provide verbal indications regarding their stakeholders in the network and the specific innovation(s) the participant had seen implemented.

4.1 Independent variables and moderators

To analyze the variables that may influence a hotel's ability to cope with the COVID-19 pandemic, we adapted existing scales for the *structural*, *cognitive*, and *relational* dimensions (García-Villaverde et al., 2017; Maula et al., 2003; Molina-Morales & Martinez-Fernandez, 2010). We also accounted for the hotel management's *Problem-solving* capabilities (Krush et al., 2013). All items were measured on a 7-point Likert scale (1 = Totally disagree, 7 = Totally agree). Table 2 shows our independent variables.

Insert Table 2 about here

We also measured a hotel's *Involvement* in its network of relationships (Cappiello et al., 2020) and the perceived *Uncertainty* created by the pandemic (García-Villaverde et al., 2017). These items were also measured on a 7-point Likert scale (1 = Totally disagree, 7 = Totally agree). Table 3 shows our moderator variables.

Insert Table 3 about here

4.2 Dependent variables

We adapted Thomas et al.'s (2003) existing scale to measure a hotel management's *Sensemaking* ability. To measure the actual implementation of change, what we labeled *Service Change*, we asked respondents to indicate whether each of the 21 policymaker requirements (Regione Emilia Romagna, 2020) was already fulfilled (*Service Change*, Thomas et al., 1993).

Table 4 shows our dependent variables for *Sensemaking*. It also shows the *Service Change* items in the corresponding summary statistics.

Insert Table 4 about here

4.3 Control variables

According to Shaw, Williams, and Bailey (2012), some factors—such as the size of the company (availability of resources), the hotel owner, the manager’s motivation, and the proximity to customers—directly relate to the hotel management’s ability to innovate. The authors suggest that high-quality hotels are more likely to innovate and that a competitive environment has a strong impact on hotel innovations. We thus supplemented our analyses with company size (*No. of Rooms*) and hotel typology (*No. of Stars*), as mentioned in the introduction to this section.

Furthermore, following Pucci et al. (2017), we also measured the size of the local and distant networks. Specifically, we asked respondents to estimate how many ties the hotel has with customers, service providers, product providers, associations, institutions, and marketing and travel agencies, both in the local area (*Local Network Size*; mean: 41.63 ties) and outside of it (*Distant Network Size*; mean: 2,152 ties).

5. Results

The hypotheses developed in this paper cover the effects of two independent variables (*Social Capital* and *Problem-solving*) on two dependent variables (*Sensemaking* and *Service Change*). Our theoretical framework also tests the moderation effects of a hotel management’s *Involvement* in the network of relationships on the social capital variables, as well as said management’s perceived *Uncertainty* on its ability to solve problems. A linear model tested the effects of *Social Capital* (H1–2) and *Problem-solving* (H5–6) on *Sensemaking* and *Service Change*, respectively. We also estimated the effects of the moderators *Involvement* (H3–4) and *Uncertainty* (H7–8).

For each dependent variable, we estimated five models independently. In detail, we calculated partial model estimates (Models 1–4) prior to running the full model (Model 5). Partial models include the intercept model taken as a base for further comparisons (Model 1); the models using *Social Capital* and the moderation effects of *Involvement* (Model 2); the models using *Problem-solving* and the moderation effect of *Uncertainty* (Model 3), and models using only the control variables. The full model includes all three blocks of independent variables, moderators, and control variables (Model 5).

We performed all analyses using R (R Core Team, 2019). Table 5 shows the results for *Sensemaking* and Table 6 shows the results for *Service Change*.

5.1 Sensemaking

In Model 5 (see Table 5), the effect of the structural dimension of *Social Capital* is significant and positive, as well as negatively moderated by *Involvement*. This result aligns with previous research and supports hypotheses H1a and H3a. The relational dimension of *Social Capital* is significant and negative and is moderated by *Involvement*. This result is consistent with the significant and negative effect of *Involvement*, and therefore partially supports H1c and H3c. Notably, there is a positive and significant effect of *Distant Network Size* and *No. of Stars*. In contrast, *No. of Rooms* has no effect on *Sensemaking* (Models 4–5), indicating that small and large hotels alike are facing the COVID-19 pandemic in much the same way. We found no support for hypotheses H5 and H7, indicating that previous *Problem-solving* routines play no part in sensing the crisis, despite the perceived *Uncertainty*.

Insert Table 5 about here

5.2 Service Change

The results for the implementation of *Service Change* paint a similar picture (Table 6).

Insert Table 6 about here

In particular, the effect of *Social Capital* on *Service Change* has a different structure, since the structural dimension exerts a positive and significant effect, while being negatively moderated by *Involvement*. The data did not reveal any effect of the relational dimension. Meanwhile, the cognitive dimension exhibited a negative and significant effect, attenuated by the moderation effect of *Involvement*. Overall, hypotheses H1-4b are partially supported. Notably, the non-significant intercept indicates no ex-ante baseline on the expected service change of the hotels in our population. Overall, the data provide no empirical support for the effect of problem-solving (hypotheses H5-8b), which suggests that past routines and knowledge were of no help for hoteliers in the face of COVID-19.

6. Discussion and conclusions

Our analyses support the socially constructed nature of sensemaking, particularly in the wake of a pandemic (Angeli & Montefusco, 2020; Christianson & Barton, 2020). The data indicate that hotel managers relied on their relationship networks to sense the crisis and find their own ways of coping with it. However, a shared vision of the crisis – indicated by the cognitive dimension of *Social Capital* – was

irrelevant for sensing the new environment and detrimental in enabling hotels to react by innovating. Furthermore, as far as *Sensemaking* ability is concerned, the negative effect of the relational dimension of *Social Capital* suggests that overreliance on traditional trustworthy relationships might even diminish the ability to sense the crisis objectively. The negative moderation effect of *Involvement* prompts careful consideration of whether, or to what extent, to participate in the local community: Hotels that assume a prominent role in the community risk diminishing the benefits of participating in the network, but may attenuate the negative effects of the dimensions of *Social Capital*. As suggested by the literature (Weick et al., 2005), when hoteliers confronted the unintelligible consequences of COVID-19 for their businesses and asked “what’s the story here?”, they found an answer in their relationships with the other local actors. However, when they tried to move to action, then the question “now what should I do?” did not receive any answer. Probably, the restrictions on in-person communication compelled hoteliers to use video conferencing, which reduced not only the amount, but also the richness of the information shared.

By contrast, our data support the notion that, given the strength of the pandemic and the level of uncertainty about the best ways to adapt service offerings and reopen hotels after the lockdown, existing *Problem-solving* routines had little to offer. Rarely have management scholars had the opportunity to see a time when sensemaking and the subsequent change were so critical (Christianson & Barton, 2020). In this vein, our results indicate that the pandemic has disrupted how people take action. This conclusion is strengthened by the fact that we interviewed hoteliers immediately after lockdown, when much action and ways of knowing likely stopped or diminished in efficacy, thereby inhibiting further action.

Furthermore, regarding the *Sensemaking* ability, the hotel category (*No. of Stars*) had little effect on managers’ ability to react based on internal resources. Notably, the opportunity to access a distant network—that is, a set of formal and informal ties outside the local community—benefits hotel managements’ ability to sense the crisis and adapt their service accordingly. Likely, the small space on a video conference grid reduced the sense of distance between distant actors while increasing the perceived distance with local actors.

Overall, this study makes three main contributions. First, we add empirical evidence to the literature on organizational sensemaking. In fact, to the best of our knowledge, this is the first study to empirically support an external effect—namely, the social relationships of a hotel’s management—on the ability of management to correctly translate a fast-changing environment into a practical framework (Chowdhury et al., 2019; Christianson & Barton, 2020). Moreover, we contribute to the hospitality literature by analyzing what drives hotel managers’ sensemaking. Second, we contribute to the literature on crisis

management by analyzing hotel managers' behavior *during* a crisis, rather than *ex post facto*, based on a unique set of primary data. Third, we contribute to the literature on innovation in the hospitality industry (Lee et al., 2013A; Montañés-Del-Río & Medina-Garrido, 2020; Pikkemaat et al., 2019). The pandemic is (sadly) offering a unique opportunity to observe organizations coping with a crisis and we observed those included in our population immediately after the lockdown. They had to reduce or stop any activity, which reflected an inhibition of their ability to extract lessons from what was happening. That said, it takes time to translate sensemaking into action. Consequently, obtaining no significant results about the effect of problem-solving routines, uncertainty and controls on innovation suggests that a traditionally limited attitude toward environment scanning and innovation disrupted hotels' stock of problem-solving abilities, which aligns with prior literature (Martín-Rios & Ciobanu, 2019).

6.1 Managerial implications

An organization, especially in the tourism sector, cannot survive an uncommon and inevitable crisis without the knowledge of how to manage the network strategically. Without a crisis management plan, managers are less able to sense the environment and react accordingly.

In particular, our results suggest that an overreliance on habitual relationships can diminish an agent's options for coping with the shock. Therefore, hotels' management should seek to learn from distant actors who are trying to cope with the crisis in different business, political and local contexts. Moreover, actors should be aware that a shared vision about the crisis will not necessarily translate into action. Thus, hoteliers should develop an individualized strategy of reaction based on a common vision of the specific context.

Our results on the role of involvement suggest that hoteliers should monitor their participation in local activities: On the one hand, major involvement might diminish the expected benefits of a major engagement; on the other hand, it may counteract the limitation of a shared view of the crisis. Finally, since existing knowledge and routines were of little use for sensing the crisis and acting accordingly, managers should maintain a high level of attention even in times of environmental stability.

Our study also has implications for the hotelier associations and policymakers. Crises can stop or limit action, which could inhibit learning and sensemaking. Thus, there is a need to promote continuous innovation, scenario development, and adaptability to change. Furthermore, as hotels seemed to rely on their trustworthy relationships to sense the crisis, which translated into a detrimental effect on

sensemaking, policymakers and professional associations should carefully manage their communication activities.

6.2 Limitations and future research

We acknowledge some major limitations of our study that contextualize its results. The first limitation is sample size: Even though we gathered real-world expertise from more than one-half of a population of hoteliers engaged in sensemaking, future research should attempt to test our framework with larger and more diverse populations. Indeed, since different institutional contexts may determine different organizational behaviors, it would be interesting to investigate the relationships between social capital variables, problem-solving, sensemaking, and service change in different countries and contexts. Second, we used second-order constructs for the structural component of social capital. Future research could instead investigate numerical indices—such as centrality or betweenness—based on social network theory methods. Relatedly, our results on distant relationships suggest that future research should analyze the effect of bonding and bridging social capital (e.g., Putnam, 2000).

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TABLES

Table 1: COVID-19 in Italy—timeline of events

Month	Day	Event
November	17	The first reported case of infection by COVID-19 in the province of Hubei. The virus was initially not recognized as a new type of coronavirus and the news was only released by the Chinese government on January 13, 2020.
January	30	WHO officially declares the virus a worldwide public health risk, and provides directives to nations on the correct management of the problem. Two cases of infection (two Chinese tourists on vacation in Rome) are identified for the first time in Italy. Italy blocks all flights to and from China and proclaims a state of emergency for six months.
February	21	First recorded death in Italy due to the virus.
February	23	Implementation of the Council of Prime Ministerial Decree (DPCM), which attributes “Red Zone” status to 11 municipalities in Northern Italy.
February	25	New DPCM containment measures affecting sporting events, competitions, readmission to schools of all kinds, and study trips extended to the regions of Emilia-Romagna, Friuli Venezia Giulia, Lombardy, Veneto, Piedmont, and Liguria valid until March 15.
March	4	New DPCM – Universities and schools closed all over Italy. Restrictions for cinemas, theaters, and events of all kinds until March 15.
March	7	New DPCM – Lombardy and 14 provinces of other regions of the Center-North “closed”; Province of Rimini declared “Red Zone.”
March	11	New DPCM – “#IoRestoCasa” (<i>I stay at home</i>) – Containment measures extended throughout Italy. Common retail businesses are suspended, educational activities, catering services, gatherings of people are prohibited.
March	12	More than 1,000 deaths recorded in Italy.
March	14	Publication of the agreement between the government and the social partners “Shared Protocol for the Regulation of Measures for the Contrast and Containment of the spread of the COVID-19 virus in the workplace.”
March	18	New DPCM – The government launches the “Cura-Italia” (<i>Custody-Italy</i>) with a EUR 25 billion “maneuver.”
March	19	Italy’s death toll exceeds China’s.
March	22	New DPCM – All unnecessary activities are suspended from March 23 to April 3, subsequently extended until April 13 and again to May 3. New ordinance prohibiting all persons from relocating or moving, via public or private transport, other than the city in which they are located, except for essential work needs, for emergencies, or for health reasons.
May	4	Implementation of the New DPCM – “Phase 2” Coexistence with COVID-19. The decree: permitted visits to relatives within the region (always maintaining a distance of at least 1 meter and with mandatory use of masks and gloves); allowed the opening of public parks and takeaway services for catering activities; allowed the resumption of various wholesale trade production activities, the reopening of bathing establishments, and motoring, regardless of the distance from one’s home.
May	13	The Emilia-Romagna Region publishes the regional protocol for accommodation with guidelines for adaptation.
May	18	Safe reopening of restaurants, bars, beaches, hairdressers, and beauticians according to regional protocols.

June	3	Movement between regions is allowed, borders between regions are reopened, and country borders are reopened with European Member States without a quarantine obligation for those arriving from abroad.
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Table 2: Independent variables

Factors (no. of items)	Item	Inter-item correlation (Min-Max)	Cronbach's alpha
Social Capital: Structural (6), García-Villaverde et al. (2017)	We are often in contact with our contacts	0.40–0.77	0.84
	In this hotel the contacts are known on a personal level	0.19–0.56	
	In this hotel there are close social relationships with our contacts	0.38–0.77	
	The resources and information exchanged with our contacts were similar	0.27–0.55	
	The hotel's regular contacts know each other	0.27–0.74	
Social Capital: Cognitive (6), García-Villaverde et al. (2017)	The hotel's contacts that provide useful information know each other	0.19–0.74	0.87
	We share the same ambition and vision as our contacts	0.44–0.74	
	We understand the firm's strategy and the needs of our contacts	0.42–0.74	
	Our employees and the employees of our contacts have positive attitudes toward a cooperative relationship	0.40–0.53	
	Our hotel and our contacts tend to agree on how to manage the relationship	0.39–0.62	
Social Capital: Relational (4), García-Villaverde et al. (2017)	The business practices and operational mechanisms of our contacts are very similar to ours	0.45–0.75	0.83
	The corporate culture and management style of our contacts is very similar to ours	0.39–0.75	
	There is close, personal interaction between our contacts	0.49–0.56	
	The relationships with my contacts are characterized by mutual respect at multiple levels	0.49–0.81	
	The relationships with my contacts are characterized by mutual trust	0.56–0.81	
Problem-solving routines (4) Krush et al. (2013)	The relationships with my contacts are characterized by personal friendship	0.51–0.59	0.77
	We analyze problems with customers	0.40–0.49	
	We can quickly identify mistakes so they won't be repeated	0.43–0.54	
	We know what works well in our hotel	0.40–0.54	
	Faced with a problem, we trace our actions back to identify what happened	0.43–0.49	

Table 3: Moderator variables

Factors (No. of items)	Item	Inter-item correlation (Min-Max)	Cronbach's alpha
Involvement (2), Cappiello et al. (2020)	Our hotel is actively involved in organizing social activities in the local area Our hotel participates in events, workshops, meetings, social activities, and presentations with other hotels in the local area	0.70	0.83
Uncertainty (2), García- Villaverde et al. (2017)	In the tourism market, customer needs and preferences change quite rapidly New customers tend to have needs and wants that are quite different from existing customers	0.44	0.60

Table 4: Dependent variables

Factors (No. of items)	Item	Inter-item correlation (Min-Max)	Cronbach's alpha
Sensemaking (12), Thomas et al. (2007)	We perceive that benefits will come from this emergency	0.00–0.63	0.73
	We label this emergency as something negative	0.01–0.33	
	We label this emergency as a potential gain	0.05–0.63	
	This emergency may have positive implications for our future	0.02–0.57	
	We feel that there is a high probability of losing a great deal	0.05–0.36	
	We can manage this emergency instead of this emergency managing us	0.03–0.38	
	We are constrained in how we can interpret this emergency	0.00–0.68	
	We feel like this emergency can be solved as matter of chance	0.00–0.68	
	We feel that there is a high probability of gaining a great deal	0.01–0.48	
	We label this emergency as a potential loss	0.05–0.42	
	We label this emergency as something positive	0.00–0.60	
	This emergency may have negative implications for our future	0.06–0.42	
Service Change (21), Thomas et al. (1993)	Affissione di cartelli riguardo alla prevenzione igienico-sanitaria	12 yes	
	Promote interpersonal distancing at least 1 meter	5 yes	
	Delimit the spaces	11 yes	
	Differentiate entry and exit routes	11 yes	
	Use disposable gloves for luggage storage	10 yes	
	Installation of plexiglass panels at the reception	11 yes	
	Check-in online	13 yes	
	Self-check-in	11 yes	
	Provide electronic keys	13 yes	
	Provide virtual concierge systems	8 yes	
	Digital systems for guest information services	0 yes	
	Automatic/Priority check-out	11 yes	
	Contact-less payments	21 yes	
	Car parking by hotel staff	12 yes	
	Sanitation of rooms and common areas	7 yes	
	Sanitization of rooms and common areas	10 yes	
	Adoption of voice-activated media (Alexa, Google)	5 yes	
	Remove self-service with freely accessible food and drinks	11 yes	
	Use of single-packed dressings, sauces, bread, crackers	15 yes	
	Promote room service	12 yes	
Prefer table service for breakfast	10 yes		

Table 5: Results—*Sensemaking*

Dependent variable: <i>Sensemaking</i>					
	Model 1	Model 2	Model 3	Model 4	Model 5
Social Capital: Structural		1.246** (0.529)			1.532*** (0.543)
Social Capital: Cognitive		-0.065 (0.690)			-0.100 (0.696)
Social Capital: Relational		-2.016*** (0.647)			-1.858*** (0.643)
Involvement		-1.325** (0.563)			-1.028* (0.563)
(Social Capital: Structural) x Involvement		-0.217** (0.093)			-0.292*** (0.102)
(Social Capital: Cognitive) x Involvement		0.035 (0.123)			0.067 (0.129)
(Social Capital: Relational) x Involvement		0.361*** (0.124)			0.350** (0.131)
Problem- solving			-0.644 (0.526)		-0.788 (0.497)
Uncertainty			-0.671 (0.542)		-0.790 (0.531)
(Problem- solving) x Uncertainty			0.106 (0.087)		0.120 (0.083)
Local Network Size				-0.0001 (0.001)	0.0002 (0.001)
Distant Network Size				0.0001* (0.00003)	0.0001** (0.00003)
No. of Stars				0.310 (0.276)	0.558* (0.283)
No. of Rooms				-0.013 (0.008)	-0.010 (0.008)
Intercept	2.656*** (0.146)	9.072*** (2.900)	6.708** (3.277)	2.159*** (0.710)	10.572*** (3.727)
Observations	46	46	46	46	46
R ²	0.000	0.327	0.036	0.123	0.506

Adjusted R ²	0.000	0.203	-0.033	0.037	0.282
F-statistics		2.638** (df = 7; 38)	0.518 (df = 3; 42)	1.432 (df = 4; 41)	2.264** (df = 14; 31)

Table 6: Results—*Service Change*

Dependent variable: <i>Service Change</i>					
	Model 1	Model 2	Model 3	Model 4	Model 5
Social Capital: Structural		0.572** (0.256)			0.673** (0.271)
Social Capital: Cognitive		-0.592* (0.335)			-0.808** (0.347)
Social Capital: Relational		-0.007 (0.314)			0.167 (0.321)
Involvement		0.013 (0.273)			0.045 (0.281)
(Social Capital: Structural) x Involvement		-0.076 (0.045)			-0.096* (0.051)
(Social Capital: Cognitive) x Involvement		0.077 (0.060)			0.139** (0.064)
(Social Capital: Relational) x Involvement		0.001 (0.060)			-0.043 (0.065)
Problem-solving			0.245 (0.235)		0.109 (0.248)
Uncertainty			0.281 (0.242)		0.170 (0.265)
(Problem-solving) x Uncertainty			-0.051 (0.039)		-0.035 (0.042)
Local Network Size				0.0002 (0.001)	0.001 (0.001)
Distant Network Size				0.00002 (0.00002)	0.00001 (0.00002)
No. of Stars				0.202 (0.123)	0.213 (0.141)
No. of Rooms				0.0005 (0.004)	0.001 (0.004)
Intercept	2.439*** (0.066)	2.440* (1.406)	1.068 (1.465)	1.818** (0.318)	0.937 (1.858)
Observations	46	46	46	46	46
R ²	0.000	0.233	0.065	0.146	0.405
Adjusted R ²	0.000	0.092	-0.001	0.063	0.136

F-statistics	1.651 (df = 7; 38)	0.981 (df = 3; 42)	1.754 (df = 4; 41)	1.505 (df = 14; 31)
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FIGURE

Figure 1: The theoretical model

