An integrative framework for investigating disaster resilience within the hotel sector

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ABSTRACT

Building disaster resilience within the hotel sector may help hotels experience decreased effects when disasters occur. This paper uses a capital-based approach to examining disaster resilience. Factors that have been identified in the literature as contributing to disaster resilience combine to create a conceptual framework of predictors of disaster resilience tailored to the hotel sector.

The conceptual framework explores economic, social, human, physical, natural, and cultural capital as individual groups of predictors, all providing separate entry points to develop disaster resilience for a hotel. Measures for targeted resilience-building action are also discussed for each group of predictors. The aim of the framework is a flexible and pragmatic pathway for organisations in the hotel industry to begin to improve their disaster resilience. Using a full spectrum of predictors across multiple disciplines allows for an integrative assessment of a dynamic issue.

1. Introduction

Tourism activity contributes 9.8% of the world's gross domestic product (World Travel and Tourism Council, 2017). One in eleven jobs worldwide come from this sector with projected growth rates of 4% annually moving into the future (World Travel and Tourism Council, 2017). Disasters can substantially change this growth trajectory, illustrated by Christchurch, New Zealand following the February 2011 earthquake (Potter, Becker, Johnston, & Rossiter, 2015). The earthquake sequence resulted in a significant downturn in international travellers to Christchurch (Orchiston & Higham, 2014). Additionally, two-thirds of hotel inventory was lost. Eighteen months later the post-earthquake hotel inventory was still one-third of its pre-disaster levels, and direct losses to Christchurch in visitor expenditure had reached $235 million in Christchurch city (Orchiston & Higham, 2014).

Hotels, as an integral part of the tourism system, are vulnerable to the effects of disasters. Building disaster resilience within the hotel sector may be facilitated by developing an understanding of what constitutes disaster resilience for hotels. Resilience building is an ongoing process that requires constant learning, flexibility, adaptation,

and evaluation. Disaster resilience contributes to a hotels ability to withstand and recover from disaster, protecting both lives and livelihoods. This paper presents a conceptual framework that enriches our understanding of disaster resilience from a hotel perspective. The integrative framework illustrates components of disaster resilience and highlights the important role that hotels play in contributing to community disaster resilience as tourism increases its role in the world economy.

Disaster resilience can aid in recovery (Bruneau et al., 2003), allowing hotels to return more quickly to an operational status after a disaster. Resilient systems experience reduced consequence, for example, decreased negative economic effects (Bruneau et al., 2003). Disaster resilience describes a hotel's capacity to assess, innovate, adapt, and overcome possible disruptions that may be triggered by disaster and thereby decreasing the negative consequence of a disaster (Brown, Rovins, Feldmann-Jensen, Orchiston, & Johnston, 2017).

Conditions related to resilience are clearly dynamic (Cutter et al., 2008; Eiser et al., 2012). Researchers have looked at ways to explore different characteristics, constructs, and capitals, ultimately describing varying elements of disaster resilience in communities, organisations,

and the tourism industry (Biggs, Hall, & Stoeckl, 2012; Cochrane, 2010; Cutter et al., 2008; Kafle, 2011; Mayunga, 2007; Miles, 2015; Norris, Stevens, Pfefferbaum, Wyche, & Pfefferbaum, 2008; Sydnor-Bousso, Stafford, Tews, & Adler, 2011).

This paper presents a disaster resilience framework designed to measure the resilience of hotels, as well as illustrate strengths and gaps when developing strategies to build disaster resilience. One method of building disaster resilience within the hotel sector starts with developing an understanding of the components that can be used to measure resilience. A multiple capital-based approach (Mayunga, 2007) provides a broad spectrum of concepts and predictors to demonstrate what disaster resilience means for the hotel sector and forms the foundation for this research. While a comprehensive list of predictors may not be possible given the dynamic nature of the subject and stage of research, the framework seeks to establish a baseline of disaster resilience predictors that will give hotel leaders an opportunity to assess and review their organisation in terms of disaster resilience, and how they may build increased disaster resilience for their hotel. This framework is designed to provide individual properties, or groups of properties, a tool to evaluate their disaster resilience and identify potential areas for improving resilience.

2. Research context

The following section aims to explore key concepts within the context of this research to provide a common foundation for development of a conceptual framework for building disaster resilience within the hotel sector. A common understanding of concepts is needed to engage in the thoughtful debate of any subject. While terms can change over time it is important to have a shared meaning of terms to move forward in conversation (Rockett, 1999).

The literature used to build this conceptual framework comes from research at the intersection of disaster resilience and community, organisational, and tourism sector research. Resilience is a dynamic concept and combines capabilities with capacities (Burnard & Bhamra, 2011). Detailed approaches for assessing resilience are needed to empower managers to develop capacities to withstand future disruptions (Linnenluecke, 2017). To withstand disruptions from disaster organisations need to build resilience and be able to adapt to changing environments (Burnard & Bhamra, 2011). Developing a sector specific framework allows for a tailored and multifaceted conceptual outline of resilience predictors.

2.1. Disaster

The term *disaster* has been distinguished from *emergency* by its higher degree of societal disruption (Rodriguez, Quarantelli, & Dynes, 2007). A disaster causes disruption beyond the capacity of the local resources. Disaster can be used to describe what happens when natural phenomena, such as climatic or geologic hazards, interact with the built environment and disrupt the functioning of society (Mileti, 1999). Furthermore, disasters may be rooted in terrorist activity, health crises (e.g. pandemics), and technological disruptions which include energy generation disruptions and malfunctions. Regardless of the source of the disruption, disaster's effects can often be minimised through human action prior to the occurrence of a disastrous event (Mileti, 1999). Tourism is susceptible to the effects of disaster due to their dependence on the local cultural and natural environment as well as complex networks of organisations (Jiang & Ritchie, 2017). For the purpose of this discussion, disaster refers to: "A sudden event where the trigger is outside the current control of the affected area (community and/or business), the event disrupts the function of that area and requires additional resources … to respond to and recover from the event" (Brown et al., 2017, p. 363). This term is intended to reflect an all-hazard definition which includes natural hazard events, terrorism, and health-related disasters.

2.2. Hotel

The hotel industry was selected as the dependent variable for the study to provide a narrowed parameter. The larger sector of accommodations, which also includes motels, backpacker lodging, holiday parks, and hosted accommodations, all have different challenges; and thus, their disaster resilience may be based on some predictors that are quite different to hotels. Hotels have unique issues, including the relatively large size compared to other accommodation types, different types of guests and their expectations, and larger numbers of employees. In addition, the hotel sector has resources that may be needed for response and recovery from disaster (Neef & Wasi, 2017; Yamamura & Welsh, 2018). For example, hotels play a role in housing response personnel during a disaster response and recovery. Additionally, the hotel sector provides needed jobs at a time of economic fragility in communities. A community and its organisations are interdependent and response and recovery of community is linked to those organisations (McManus, Seville, Vargo, & Brunsdon, 2008).

By focusing the research effort to a specific type of business the findings can be industry specific and targeted. There is a need to develop industry specific indicators of resilience (Hall, Prayag, & Amore, 2018), including a practical understanding of resilience and how to activate and build resilient characteristics (Linnenluecke, 2017). This framework aims to develop a specific and targeted group of predictors of disaster resilience for the hotel sector.

The official tourism quality assurance organisation for New Zealand is *Qualmark,* and their definition of a hotel is widely used, including in the current research:

> The Hotel category includes properties with at least one licensed bar and restaurant, on the premises or adjacent, with charge-back facilities. Types of rooms include standard rooms, suites, and apartments. All rooms have tea and coffee-making facilities and there is on-site management at all times. All provide breakfast whether in a restaurant or breakfast room, or via room service (Qualmark, 2013).

This study does not distinguish facilities' quality or star ratings but is instead focused on the service levels that distinguishes hotels from other types of accommodations per the definition above. Larger hotels (e.g. international chains) have been considered to be more prepared for disaster based on increased numbers of senior management to engage in disaster planning activities (Faulkner, 2001; Hystad & Keller, 2008). However, a 2013 study of disaster management strategies of Five Star hotels in Jordon found this category of hotel was not widely advanced in their management of crises and disaster (Sawalha, Jraisat, & Al-Qudah, 2013). A 2018 study of economic and social crisis management of hotels in Greece found that the star category and mode of operation (year round/seasonal) of hotels did affect the crisis resilience (Pappas, 2018). There is also evidence that smaller operators are quite resilient as they are able to rebuild quickly because of smaller capital outlays required (Mahon, Becken, & Rennie, 2013). Overall, there is not a clear picture of how quality, size and ownership structures affect vulnerability or resilience (Mahon et al., 2013). Furthermore, star quality ratings vary from country to country, which makes the concept difficult to generalize over geographic boundaries.

2.3. Disaster resilience within the hotel sector

Organisational resilience has been recognised as an important construct, yet often remains vague and unclear in definition (Burnard & Bhamra, 2011). Resilience has been defined differently by different research streams, conceptual similarities and differences have not been understood, and resilience is operationalized differently across research (Linnenluecke, 2017). Resilience research has investigated what human resources exist in a community and how to capitalise on those resources, exploring constructs such as social connectedness, social cohesion, leadership, inclusion, and how these constructs contribute to