Exploring disaster resilience within the hotel sector: A systematic review of literature

CrossMark

Nancy A. Brown[a],[*], Jane E. Rovins[a], Shirley Feldmann-Jensen[b], Caroline Orchiston[c], David Johnston[d]

[a] Joint Centre for Disaster Research, Massey University, New Zealand
[b] School of Criminology, Criminal Justice, and Emergency Management, California State University, Long Beach, CA, USA
[c] Centre for Sustainability, University of Otago, New Zealand
[d] Joint Centre for Disaster Research, Massey University/GNS Science, New Zealand

ARTICLE INFO

ABSTRACT

Within the tourism industry, the hotel sector's vulnerabilities are multi-faceted. This literature discussion scrutinizes how disaster and resilience is framed for the tourism sector, and, more specifically, how the concepts can be applied to the hotel sector. A synthesis of the literature points to the importance of prioritizing disaster resilience building for the hotel sector. The body of literature regarding disasters, tourism, and more specifically hotels, has increased over the last 20 years, still improvements in the hotel sector's disaster preparedness and do not appear to be on the same trajectory. Illustrating the predicament of the contemporary hotel industry serves to open a discussion about the value of building resiliency to disaster for hotels. As the numbers of people affected by disasters grows, the importance of providing actionable information to limit the severity of these events on communities also escalates in pace.

1. Introduction

An important aspect of the world's increasing interconnectedness is the ease and frequency of travel. Increased numbers of tourists traveling to places of varying risk has exposed new and uncertain vulnerabilities to the tourism sector [79]. Tourism is vulnerable to disaster because it relies upon infrastructure, the ability to move around freely, and people's perceptions of safety [62].

Within the tourism industry, the hotel sector's vulnerabilities are multi-faceted. A hotel's physical infrastructure (buildings, water, power, sanitation) may be at risk from a variety of natural and man-made hazards placing staff and guests at risk. Beyond guest and staff safety, a hotel's ability to continue operations and profitability is often at risk in disasters. The hotel's surrounding environment (sea, forests, natural beauty) can be affected by hazards making their locale less desirable for future tourist in the short term [5]. Hotel vulnerabilities are complex and factors that contribute to risk are often the tourist motivation to visit.

Disastrous events can influence tourist's choices of destinations [24]. Management of destination image, disruption from extreme weather, and event impacts causing slow recovery may all affect tourism destinations negatively [94]. Examples of this influence can

be seen in: the 2001 Foot and Mouth Disease outbreak, which is estimated to have cost the United Kingdom tourist industry between USD$3.3 billion and USD$4.2 billion due to decreased numbers of tourist traveling to the countryside [93]; the 2003 Severe Acute Respiratory Syndrome (SARS) epidemic which coincided with Japanese outbound tourism dropping as much as 55% in one month [15]; and Hurricane Katrina's impacts on New Orleans which resulted in 1409 tourism and hospitality businesses shutting down- affecting 33,000 hospitality employees, a decrease of USD$15.2 million per day in business and leisure travel expenditures [72]. These examples highlight how disastrous events can affect tourism.

People's perceptions can be negatively influenced by media coverage of an event [19,24,54,72]. In the aftermath of the 2004 Boxing Day Tsunami, the hotel industry in Phuket, Thailand successfully reopened 80% of their hotels within a week, only to see occupancy rates drop to 10% [29]. Decrease in tourism can also be due to facility availability and access. In 2005, following Hurricane Katrina and the New Orleans levees failure, the lodging industry in New Orleans, which included an estimated 38,000 rooms, was almost completely shut down [91]. Following a second major earthquake in five months (February 2011) Christchurch, New Zealand lost two-thirds of their hotel inventory [64]. Aggravating the influence of disasters on tourism further is the

---

increasing interdependence of the tourist industry, where a negative event in one location can affect the tourist economy of many countries [43]. For example, the 2010 Icelandic Volcanic Ash Cloud caused disruption to air travel throughout Europe [66]. "Tourism destinations in every corner of the globe face the virtual certainty of experiencing a disaster of one form or another at some point in their history" ([24], p. 135).

Illustrating the predicament of the contemporary hotel industry serves to open a discussion about defining disaster resiliency for hotels. A cross-disciplinary lens may provide an opportunity to identify connections between the hotel sector's needs (ensuring safety and security of guests and staff as well as remaining operational and profitable) and disaster resilience building. The purpose of this article is to examine the literature and explore important disaster resilience and hospitality industry concepts that can be applied specifically to the hotel industry.

Defining key terms including disaster and resiliency within a hotel context begins with an examination of the literature. These definitions form the basis for discussion of both disaster effects on hotels and disaster resilience building within the hotel sector. The review synthesizes current concepts of disaster resilience building in the context of the hotel sector, and extracts concepts to inform further development in building disaster resilience into the hotel sector.

Search word of *disaster* and *hotel* provided 143 peer reviewed articles, after duplicates and articles not on topic were eliminated. Additional articles and grey literature were captured through reviews of selected articles reference lists. In total 352 articles and papers were identified and thematically coded for this literature review.

2. Basic definitions

In order to discuss disaster resiliency, as it applies to the hotel sector, it is important to first explore the literature aimed at defining these terms. The objective is to synthesize common definitions for disaster and resilience as they will apply to this discussion.

2.1. Disaster/Crisis

The concepts of disaster and crisis, as applied to tourism businesses, have been examined by many scholars [1,17,24,58,79]. Rockett [84] writes that definitions may be transient over time, but can serve our current need and allow for common understanding. The most prevalent definitions adopted by authors of tourism sector research has been Faulkner's [24] concept that **crises** often have a component that could have been controlled by the group being affected (e.g. management failing to react to events in a way that minimizes effects), while **disasters** occur suddenly and the actual trigger event is out of the control of those affected (e.g. an earthquake hitting a populated area). Ritchie [80] recognises that an overlap can occur, when leadership actions during a disaster then develop into a related crisis, thus confusing the concepts. Some authors chose not to tackle the distinction of disaster and crisis but instead use the terms alternately or simultaneously [80].

[56] describes disasters as events that are the result of interaction with the physical environment, the social and demographic characteristics of the community within the physical environment, and the built environment the community constructed. Disasters are often predictable, and in some cases avoidable [56]. While many disastrous events are not controllable by human societies, affects may be minimized through action.

Disasters are often described as a cycle with phases leading from one to the next. A common cycle is the 4 R's; reduction, readiness, response, and recovery [55]. In this spectrum one *reduces* (or eliminates) possible risks, *readies* for risk that cannot be reduced or eliminated, *responds* to events with the readied preparation, and works toward *recovery* after the event, including reducing or eliminating possible threats. Faulkner

[24] provides six phases of disaster in a tourism disaster management framework. These phases include: 1) pre-event, where action is taken to reduce effects of, or eliminate, potential events; 2) prodromal, the time immediate prior to an imminent disaster where warnings and plans are initiated; 3) emergency, the actual disaster response activities; 4) intermediate, where short term issues are resolved and return to normal is being planned; 5) long-term recovery, a continuation of previous phase; and 6) resolution, the final phase where normal activities resume and review of events takes place. In both of these disaster management cycles the concept remains that the management process begins prior to the onset of an event with planning and risk reduction, continuing through to learning lessons and applying those lessons to future planning.

A key concept in the discussion of disaster is that disasters are social disruptions [85]. The disruption to human society causes the event to be termed a disaster- even though a physical event such as an earthquake may begin the cycle. For example, a magnitude 6.5 earthquake that occurs in an undeveloped and unpopulated part of the world is of little consequence. The same earthquake in a developed area has the potential to cause severe disruption and may be termed a disaster.

The term disaster can also illustrate a lack of capacity to manage an event. As a description of the resources needed to stabilize the event, a disaster requires recruitment of resources from outside of the affected community [97] & Caribbean Alliance for Sustainable Tourism CAST [96]. Examining an event in terms of resources required to respond illustrates that disruption to human systems is integral to defining a disaster. A small hotel with limited resources could experience a disaster that a larger hotel with greater resources might have been able to handle internally with minimal disturbance.

For the purposes of this discussion, the definition proposed by Faulkner [24] will form the basis for defining disaster with additional wording taken from [56], and Rodriguez, Quarantelli, and Dynes [85]. For the remainder of this discussion disaster is defined as:

> 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 (other than those available within the area) to respond to and recover from the event.

2.2. What is resilience?

The concept of resilience has been explored over many decades among a range of disciplines, including ecology, engineering, psychology, and social science [22,27,3,36,40,47,48,58]. It is worth highlighting that the meaning of resilience, at its heart, remains similar across disciplines, but the nuances and values vary based on application.

The root *resiliere* comes from the Latin 'to jump back'; however, in the context of disasters affecting societies this definition falls short, as it may not be possible to go "back" to the state prior to the disaster [67]. Going back to the previous state may also be undesirable, if it means building back to the same vulnerabilities [23]. Resilience is a dynamic condition.

Many scholars have worked toward finding a shared meaning of resilience. However, in order to study resilience one must first define: resilience by whom; and resilience to what [17,47,7]. A universal understanding of resilience is not possible:

> Without frameworks tailored to specific populations, levels of analysis, phase of disaster, and even the unique disaster context, our ability to advance the science of disaster response toward more resilient communities is limited ([60], p. 233).

For each group, and each circumstance, the meaning of resilience can take on new dimensions. Exploring some of the different ways resilience has been applied can be a constructive process toward