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**Disaster Resilience in the Hotel Sector:
A Mixed Methods Study**

A thesis presented in partial fulfilment of the requirements for the degree of

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Abstract

Building disaster resilience before a disaster may aid all types of organisations in speeding recovery post-disaster and returning to full operation sooner. For many communities the tourism sector is integral to their economic stability, therefore the ability of the hotel industry to maintain, or regain operations is essential in supporting the social and economic fabric of the local area. Furthermore, hotels play an integral role in disaster response and recovery, providing accommodations for people responding to disaster as well as local jobs.

The objective of this research was to define the characteristics of disaster resilience within the hotel sector and develop measures to explore strengths and gaps in resilience. This research developed the Disaster Resilience Framework for Hotels, outlining capital-based predictors of resilience customised for the hotel sector. The framework considers economic, social, human, physical, natural, and cultural capitals as components of disaster resilience. Within each capital, a set of predictors and measures was developed from the literature. This view of capitals combines both potential and actual resources to contribute to adaptive capacity; the ability of an organisation to withstand and recover from shocks.

The framework has been explored through a mixed methods study of hotels in two areas in New Zealand (Wellington and Hawke's Bay). The data includes surveys and interviews with managers and staff. The inclusion of staff input provides a novel, innovative look at the connections between organisational policies and procedures and staff understanding, awareness, and integration of those policies.

Hotels in New Zealand were found to have many resources that contribute to their overall disaster resilience. A safety culture combined with social capital stocks as well as human capital skills and knowledge make for a solid foundation. Gaps included a lack of

all-hazard planning, need to integrate staff in the planning process, and a need to better connect with other organisations that may provide support and collaboration during disasters. With a positive growth trend in New Zealand's tourism sector and a history of devastating earthquakes, New Zealand provides an excellent test case.

Preface

In 2005 Hurricane Katrina caused unprecedented, widespread social and economic disruption across a large geographic area in the southern part of the United States. Like many people worldwide, I watched the event unfold on a 24-hour news cycle. I felt compelled to join in the response effort and signed up with the Red Cross to spend two weeks participating in the response effort. Hotel rooms were at a premium for response workers. The need for hotels to be operational during disaster response was crystallised during these weeks; more than once we ended up sleeping on a cot when area hotels were either closed or fully booked. The experience was life-changing in so many ways and marks the beginning of this PhD journey.

Fast forward three years to 2008. I transferred to the Caribbean country St. Kitts and Nevis with a major hotel company. At that time, one hotel on each island (both international chains) served as the primary employers on these two islands. Just two weeks after I arrived Hurricane Omar made landfall across the region. As a result of the hurricane, the Nevis hotel was closed for operation, taking two years to reopen due to factors which included insurance issues regarding how to make the hotel more resilient in the future. The hotel on St. Kitts, my employer, sustained little damage and continued operations as before. The experience brought the message of disaster resilience home, inspiring me to want to know more about what factors contribute to hotel disaster resilience, and what contributed to the disparity between these two properties' operational capacity in the wake of disruptive events.

Upon moving back to the United States, I began my journey in earnest. I sought out higher education, earning a Master of Science degree in Emergency Services at California State University, Long Beach. While working on that degree I began a position at the Hotels of the Disneyland® Resort in Anaheim as the Emergency Preparedness

Coordinator for the three hotel properties. Developing protocols, trainings, and exercises for staff at all the hotel properties was engaging, but I recognised the need for more education to be able to create a sustainable, comprehensive program of disaster resilience. Thousands of staff and guests could be involved in a disaster response at any one time, impressing upon me the need for empirically based disaster resilience strategies.

The topic of disaster resilience for hotels has been intersecting my life for more than a decade. Like fellow PhD candidates I speak with, I didn't decide on this topic, it found me and demanded my attention. I look forward to taking this knowledge to hotels and working together to build disaster resilience into their operations.

Acknowledgements

“Our problems are man-made — therefore, they can be solved by man. And man can be as big as he wants. No problem of human destiny is beyond human beings. Man's reason and spirit have often solved the seemingly unsolvable — and we believe they can do it again.” John Fitzgerald Kennedy American University Commencement, Washington D.C., June 10, 1963.

Investigating how hotels can build disaster resilience that is both meaningful and attainable, within the time and money constraints of their organisations, is an essential component of this research. To that end, I have solicited help from many people and organisations along the way. It is appropriate that I take the time here to acknowledge and thank these people.

To the hotel managers and staff that participated in the study, how generous they were with their time! While recognising the fast paced business they are involved in I asked for a lot and was not disappointed. I hope they find value in this research and can apply some of the recommendations to assist them in their journey to build disaster resilience within your organisations.

Organisations that work with the tourism sector helped me design a meaningful study and access information to enhance the data. Hawke’s Bay Civil Defence, Tourism Industry Aotearoa, Wellington Regional Economic Development Agency, and the Wellington Resilient Cities group all contributed in various important ways. These organisations were instrumental in the background data collection, helped connect me to members of the hotel community, and ultimately assisted in disseminating my results to hotel managers. The value of their involvement cannot be overstated.

My research was funded by Massey University, GNS Science, and Hawke’s Bay Civil Defence. I am grateful for this funding that allowed me to dedicate myself to the task of research. I would also like to take the time to thank the Massey University Human

Ethics Committee for their careful and thoughtful review of my ethics protocols. Their suggestions expanded my understanding of protecting human subjects.

The Joint Centre for Disaster Research (JCDR) and Massey University offered me a ‘home away from home’ to learn and grow as a researcher. Support from so many colleagues has added to the journey in unique and special ways. Each member of the JCDR took an interest in my research and were happy to lend their expertise. My fellow PhD students offered lively discussions, advice, and kept me moving towards my target every week. It really does take a village! I have learned so much from each of them and feel like the support they provided fueled me on many occasions. I hope this is just the beginning of our long association.

To my family, they were all generous with their time in reviewing and proofing hundreds of pages - 100% commitment to my dream; I love them all so much. I hope in the future I have a chance to support each of them the way they supported me. Moving 6,705 miles (10,790 kilometers for my New Zealander readers) and loving it was a lot to ask, but my partner John was up to the challenge. My mother and sister spent hours discussing word choice and punctuation with me and remained enthusiastic to the very last chapter. My children, brother and sister-in-law, and nieces never doubted me, and that confidence meant the world to me. To Greg Georgantas from Disneyland® Resort whose mentorship has been instrumental in my journey a heartfelt thank you.

Finally, to my supervisors, I started this journey with high expectations and a rigid timeline, and they supported me every step of the way. The time and energy each put into reading, advising, counselling, and encouraging was instrumental in the delivery of this final work; without each of these extraordinary people, it would have been a project without all the parts. Each have such special skill sets; what a privilege to have access to those talents for all this time! Their investment in my success leaves me with nothing but

gratitude for the opportunity to work with each of them. Dr David Johnston was the catalyst for bringing me to New Zealand for the research and created a special team to help me along the way, welcoming me not only to the JCDDR family, but also to his own. Dr Jane Rovins worked tirelessly to review and brainstorm the best approaches to the research and the articles within this thesis. She always took the time to provide excellent teaching moments in reviewing material and made me feel she was truly invested in my success with this project. In addition to detailed review of the manuscript and lots of positive reinforcement during the journey, Dr Caroline Orchiston provided expertise in the tourism sector that added quality and depth to the discussion. Last but certainly not least, Dr Shirley Feldmann-Jensen, as a longtime mentor and friend, coached me along the way, reviewed and suggested important additions to the research, and was instrumental in starting me along the journey. Both she and her husband Dr Steve Jensen mentored me through my masters and introduced me to Dr David Johnson. The rest, as they say, is history.

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List of Acronyms

CAST	Caribbean Alliance for Sustainable Tourism
CDT	Cognitive Dissonance Theory
CSR	Corporate Social Responsibility
DRFH	Disaster Resilience Framework for Hotels
GIZ	Deutsche Gesellschaft für Internationale Zusammenarbeit
GM	General Manager
GRI	Global Reporting Initiative
HB	Hawke's Bay
MBIE	Ministry of Business, Innovation & Employment
M _w	Moment Magnitude Scale
NZD	New Zealand Dollars
PMT	Protection Motivation Theory
SARS	Severe Acute Respiratory Syndrome
SDGs	Sustainable Development Goals
SFDRR	Sendai Framework for Disaster Risk Reduction 2015-2030
TPB	Theory of Planned Behaviour
UNEP	United Nations Environment Programme
UNGC	United Nations Global Compact
UNISDR	United Nations Office for Disaster Risk Reduction
USD	United States Dollars
WBCSD	World Business Council for Sustainable Development
WTTC	World Travel and Tourism Council
WL	Wellington