

**MINDING MY OWN BUSINESS**  
SMALL BUSINESS OWNERS' DECISION MAKING  
DURING A RESPONSE TO A NATURAL DISASTER IN  
SOUTHEAST QUEENSLAND, AUSTRALIA

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# **Keywords**

Business capitals, critical decision method (CDM), natural disaster, naturalistic decision making (NDM), small business owner (SBO), small business, South-East Queensland (SEQ), recognition primed decision (RPD) model.

# Abstract

Annually, Australia experiences recurrent sudden onset natural disasters arising from hazards like floods and bushfires. Such events are now considered as increasing in frequency, intensity, and scale. The response phase of a natural disaster is characterised as short-lived, action-oriented, requiring fast decisions and the mobilising of resources. Confronting a natural hazard, small business owners (i.e., those with fewer than 20 staff) are expected under government policy to be their own first responders, self-reliant, and disaster ready. Yet 89 percent of Australian small businesses are resource poor, being either non-employing or a micro-enterprise with fewer than four employees, constraining any response to disruptive, high-consequence events. The existing literature has thus far neglected to fully explore the way business owners approach response-phase disaster decisions. Employing the recognition primed decision lens, this study attends to the omission by exploring their decision processes during a natural disaster.

Three questions are answered: What are the decisions faced by small business owners in a natural disaster?; How do they mobilise their business capitals to secure business continuity?; and What affordances are provided by public and non-public stakeholders to help business continuity during a natural disaster? This qualitative study applied the critical decision method to probe 11 small business owners about their response decisions. In addition, 13 key informants with knowledge of public and non-government disaster management in Southeast Queensland were interviewed about the affordances available to small business in a disaster context. Data collected were subjected to thematic analysis with the findings reported against six business capitals of human, financial, natural, manufactured, social, and political capitals.

This research found that business ownership, exposure to natural disasters and past work histories contribute to business owners pre-stored cognitive information to respond quickly to disruptions. Decisions centred on protection of physical assets and staff safety. An interplay of cognitive information, external information and communications, planning, pre-primed readiness, and social capital contribute to decisions. Social capital acts as social insurance to complement business owner's experiences while financial capital is compromised. Affordances from political entities contribute valuable information and financial relief to restore business operations. Practical implications and future research directions are outlined.

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# List of Abbreviations

<b>ABN</b>	Australian Business Number
<b>ABR</b>	Australian Business Register
<b>ASBFEO</b>	Australian Small Business and Family Enterprise Ombudsman
<b>ATO</b>	Australian Taxation Office
<b>BEC</b>	Business Enterprise Centre
<b>BOM</b>	Bureau of Meteorology
<b>CDM</b>	Critical Decision Method
<b>CEM</b>	Comprehensive Emergency Management
<b>COAG</b>	Council of Australian Governments
<b>CRC</b>	Community Recovery Centre
<b>DRC</b>	Disaster Research Center, Delaware, USA
<b>FN</b>	Field Notes
<b>FRRR</b>	Foundation for Rural and Regional Renewal
<b>GDP</b>	Gross Domestic Product
<b>LDMG</b>	Local Disaster Management Group
<b>LGA</b>	Local Government Area/s
<b>NDM</b>	Naturalistic Decision Making
<b>NDRRA</b>	Natural Disaster Relief and Recovery Arrangements
<b>NSDR</b>	National Strategy for Disaster Resilience
<b>PPRR</b>	Prevention, preparation, response, and recovery (related to emergencies or disasters)
<b>QLD</b>	Queensland
<b>QRIDA</b>	Queensland Rural and Industry Development Authority
<b>QUT</b>	Queensland University of Technology
<b>RACQ</b>	Royal Automobile Club of Queensland
<b>RPD</b>	Recognition Primed Decision (model)
<b>SBO</b>	Small Business Owner
<b>SEQ</b>	Southeast Queensland
<b>SME</b>	Small medium sized enterprise/s
<b>STC Debbie</b>	Severe Tropical Cyclone Debbie
<b>USA</b>	United States of America

# List of Key Definitions

<b>Bonding social capital</b>	Relates to ties of family, friends, employees, neighbours who are close to the SBO. (Aldrich & Meyer, 2015; Meyer, 2018)
<b>Bridging social capital</b>	SBO weak ties to networks and relationships with diverse individuals from professional bodies, church groups. (Aldrich & Meyer, 2015; Meyer, 2018)
<b>Business capitals</b>	The resources SBO are in control of or able to access to respond to a disaster. In this study six capitals are referenced: human, financial, manufactured, social, political, and natural capitals. (Stafford, Bhargava, Danes, Hayes, & Brewton, 2010)
<b>Business continuity/plan</b>	The capacity of a small business to continue to provide its products or services to some acceptable level before, during and after a disruption like a natural disaster. Business continuity relates to how a business owner responds to a natural hazard, including the strategies and actions they use to respond, resume, and restore the business to its functions when disrupted. A business continuity plan will set out these details. Generally presented in written format, the plan provides guidance on the procedures to follow when a business is interrupted although for many SBOs the plan may be “crafted in their heads”. (Fitzgerald, Tarrant, Aitkin, & Fredriksen, 2017, p. 81; ISO 22302: 'Terms and conditions': 2021, p.2)
<b>Business survival</b>	<p>Business survival relates to the longevity of a business. Business survival and the obverse side demise is about the operating status of a business. A dissolution of a business may be the result of an exit from the marketplace for voluntary (retirement, death, change of ownership) or involuntary reasons (bankruptcy, insolvency). (Josefy, Harrison, Sirmon, &amp; Carnes, 2017); Headd, 2003)</p> <p>A small business can be categorised as survived if it has lived through a natural hazard disaster and didn't exit the marketplace. In the natural disaster context, survival is influenced by the actions and decisions of SBO, that is, how they manage the event, how they manage their available resources (business capitals), the response they have to the dynamic nature of the events being faced, how they monitor their response, and what protections they have against an escalation of issues.</p> <p>A small business may not be operating during a disaster due to infrastructural disruptions or in the immediate aftermath because of the impact and damage it experiences. The business activities are restored to usual operations although the business may experience losses related to its objective measures like sales, revenues, profitability, staff or has increased debt levels to those prior to the disaster. Assessing the survival status of a business relies on business owner verification or official data if collected on business demise. (Marshall &amp; Schrank, 2014)</p>
<b>Community</b>	A social group with a commonality of association and generally defined by location, shared experience, or function and with several things in common, such as culture, heritage, language, ethnicity,

pastimes, occupation, or workplace. The small business sector and individual businesses and their owners are a sub-set of the community. (AIDR, 2019)

<b>Decision making</b>	“The patterns acquired by experienced people that are used to identify an effective option as the first one they consider, based on a pattern recognition process.” (Klein, 2015, p. 165)
<b>Direct costs</b>	Those costs incurred because of the disaster which can have a market value such as structural or physical damage to property, buildings, infrastructure, vehicles, stock. (Deloitte Access Economics, 2016, p. 6)
<b>Disaster for “community”</b>	“A serious disruption of the functioning of a community or a society due to hazardous events interacting with conditions of exposure, vulnerability, and capacity, leading to one or more of the following: human, material, economic and environmental losses, and impacts.” (AIDR, 2019, p. vii)
<b>Disaster for operational purposes for “prescribed statutory authorities</b>	“A serious disruption to community life which threatens or causes death or injury in that community and/or damage to property which is beyond the day-to-day capacity of the prescribed statutory authorities and which requires special mobilisation and organisation of resources beyond those normally available to those authorities” (COAG, 2011, p. 22).
<b>Emergency management</b>	<p>“A range of measures to manage risks to communities and the environment; the organisation and management of resources for dealing with all aspects of emergencies. Involves the plans, structures and arrangements which are established to bring together the normal endeavours of government, voluntary and private agencies in a comprehensive and coordinated way to deal with the whole spectrum of emergency needs including prevention, response and recovery” (COAG, 2011, p. 22).</p> <p>Frequently used interchangeably with disaster management. Both terms will be used in this study especially as Queensland Government tends to apply the term disaster management (Queensland Government, 2018a).</p>
<b>Emergency service/s</b>	An agency responsible for the protection and preservation of life and property from harm resulting from incidents and emergencies. Synonyms include emergency services, prescribed statutory authorities, first responders and emergency service organisation.
<b>Financial capital</b>	The financial resources that are available to a SBO including cash, savings, revenue and income, debt capital (low interest loans from government) grants and physical assets. (IIRC, 2013b).
<b>Hazard</b>	“A dangerous phenomenon, substance, human activity, or condition that may cause loss of life, injury or other health impacts, property damage, loss of livelihoods and services, social and economic disruption, or environmental damage.” (UNISDR, 2009, p. 17)

<b>Human agency</b>	The capacity of the SBO to act independently, influence, shape and exercise their choices with respect to their business and decisions.
<b>Human capital</b>	The knowledge, experience, skills and personal attributes, leadership, physical ability, and health of the business owner that support the response and performance of their small business. (Emery & Flora, 2006; Beeton & Lynch, 2012).
<b>Impact</b>	The effect including negative effects (economic losses) and positive effects (economic gains) of a hazardous event or disaster. An impact can include economic, human, environmental impacts and may include fatalities, disease, injury, human physical, mental and social well-being. Direct impact relates to physical damage to structures and assets. Indirect impact is linked with business disruption, income losses, social, human, and environmental. (UNISDR, 2017)
<b>Indirect costs</b>	The flow-on effects to the community not directly caused by the natural disaster itself but are the consequences of the damage and destruction such as business disruption (loss of production), clean up, emergency relief and assistance, network disruption, water, telecommunications, and public services. (Deloitte Access Economics, 2016, p. 6; Productivity Commission, 2014a, pp. 275-276)
<b>Key informants</b>	Individuals recruited to this study drawn from various backgrounds with knowledge, experience or understanding about the disaster management practices, processes and activities that happen when a natural disaster strike. Key informants come from environments where they gained insider information that is valuable in helping to understand the affordances offered by political institutions – public authorities and non-government entities that contribute to the small business sector and their recovery process.
<b>Linking social capital</b>	Distant ties involving supports between mall business owner and political institutions and people. Linking social capital can overlap with political institutions. (Aldrich & Meyer, 2015; Meyer, 2018)
<b>Livelihood</b>	The means, capabilities, tangible, and intangible assets (productive assets), including human, social, natural, manufactured, financial and political resources, that business owners rely on to make a living. (UNISDR, 2016)
<b>Manufactured capital</b>	Resources linked to the human-built infrastructure, buildings, transportation networks, communication networks and information technologies, equipment and tools contributing to SBOs operations. The resources are owned, leased, or controlled by public, private or non-government enterprises. (IIRC, 2013b)
<b>Natural capitals</b>	Place-based assets including natural resources, the hazardous vulnerabilities of an area related to weather, geophysical and biological, amenities and natural beauty. (Emery & Flora, 2006)
<b>Natural hazard</b>	A hazard with origins in the geosphere, biosphere, atmosphere, and hydrosphere. (Glade & Alexander, 2013)

<b>Naturalistic Decision- Making (NDM)</b>	NDM seeks to understand how experienced people make decisions working in complex, real world settings with those decisions being meaningful and familiar to them. (Klein & Klinger, 1991); Lipshitz, Klein, Orasanu, & Salas, 2001). Features of NDM settings are dynamic and uncertain; shifting and competing goals, ill-structured tasks; ambiguity and incomplete information, time pressure; and high stakes consequences. (Orasanu & Connolly, 1993; Klein & Klinger, 1991)
<b>Political capital</b>	The laws, policies and procedures, the formal institutions and political supports that contribute to disaster emergency management with specific emphasis on response phase that support the SBO. Three political institutions relevant for this study are the public, private and non-profit sectors. (Bennett, Lemelin, Koster, & Budke, 2012)
<b>PPRR</b>	The four phases (or functions) of the disaster cycle, or disaster management cycle namely prevention, preparation, response, and recovery that underpin Australia's and Queensland's comprehensive emergency management (CEM) approach. (AIDR, 2019; COAG, 2011; Queensland Government, 2018a)
<b>Preparedness</b>	The taking of preparatory measures to ensure that, if a disaster event occurs, communities and SBO, resources and services can cope with the effects of the event. (Queensland Government, 2018a, p. 96). A business owner uses their knowledge and capacities to anticipate, respond to and recover from the impacts of the event. A preparedness plan establishes arrangements in advance to enable timely, effective, and appropriate responses to specific potential events or emerging situations that might threaten the SBO and their business operations. (UNISDR, 2016)  Synonyms include emergency response plan, disaster plan, response plan.
<b>Prevention</b>	“The taking of preventative measures to reduce the likelihood of an event occurring or, if an event occurs, to reduce the severity of the event.” (Queensland Government, 2018a, p. 96).
<b>Recognition primed decision model (RPD)</b>	This theoretical model describes how decision makers use their experience to assess and judge a situation as familiar, rather than comparing alternatives. By drawing on situational recognition features, that is cues, plausible goals, expectancies and typical actions, a decision maker selects the first workable option, not the best one. By imagining how the option may be implemented, the decision maker avoids weaknesses in selecting an inappropriate option. Recognition primed decision making takes neither a lot of time nor needs cognitive effort. (Klein, 1998, p. 30)
<b>Recovery</b>	The restoring or improving of livelihoods, health, as well as economic, physical, social, cultural, and environmental assets, systems, and activities, of a disaster-affected community and the small business/business owner. (UNISDR, 2016)

<b>Resilience</b>	“Functioning well under stress; successful adaptation; self-reliance and social capacity.” (COAG, 2011, p. 3).
<b>Response</b>	<p>Within the emergency management/disaster cycle phases (PPRR), response is defined as the taking of appropriate measures to respond to an event, including action taken and measures planned in anticipation of, during, and immediately after an event to ensure that its effects are minimised and that persons affected by the event are given immediate relief and support. (Queensland Government, 2018a, p. 97).</p> <p>More generally the response phase is characterised as short-lived, task oriented, involves fast decision making and the mobilising of resources. (Coppola, 2015)</p>
<b>Risk</b>	The combination of the probability of an event and its negative consequences. (UNISDR, 2009, p. 25)
<b>Risk transfer</b>	The process of formally or informally shifting the financial consequences of particular risks from one party to another whereby a household or enterprise (Small Business) will obtain resources from the other party after a disaster occurs, in exchange for ongoing or compensatory social or financial benefits provided to that other party. (UNISDR, 2016)
<b>Small business</b>	A business that employs fewer than 20 employees. (Australian Government, 2017)
<b>Small business owner/s (SBO)</b>	The owner and manager of a small business with fewer than 20 employees. The person/s works in their business having principal decision making responsibilities and undertakes all managerial tasks linked to the business. Synonyms include entrepreneur or self-employed.
<b>Social capital</b>	Resources embedded in a social structure that are accessed and/or mobilized in purposive actions (Lin et al., 2001, p. 12). Three types of social capital are identified: bonding, bridging, and linking.
<b>Sudden onset natural disaster</b>	Natural disasters that occur with limited or no warning including bushfires, cyclones, earthquakes, tsunamis, severe storms, and rainfall. (Australian Government, 2017).
<b>Vulnerability</b>	“The conditions determined by physical, social, economic and environmental factors or processes, which increase the susceptibility of an individual, a community, assets or systems to the impacts of hazard.” (UNISDR, 2016)

# Statement of Original Authorship

The work contained in this thesis has not been previously submitted to meet requirements for an award at this or any other higher education institution. To the best of my knowledge and belief, the thesis contains no material previously published or written by another person except where due reference is made.

Signature: QUT Verified Signature

13-12-2021

Date: \_\_\_\_\_



# Acknowledgements

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Eleven small business owners generously devoted time to share glimpses of their direct experiences responding to a natural disaster. Owning and operating a small business in Southeast Queensland offers a diverse landscape well known for extremes in weather events. The small business owners interviewed herein reflected fortitude, courage, strength and flexibility as well as planning and forethought dealing with multiple natural disasters. The human dimension of running a business and the impact of natural disasters on the human spirit of small business owners is one of the lasting impressions I have taken from this study. Through their vivid stories of floods, bushfires and tropical cyclones these small business owners have contributed an authentic voice to the realities of a natural hazard event. The significant challenges and impacts these events have on business owners and their businesses normally remain silent or underreported. It is rare to capture the intimate details of business owners' experiences and the multiple costs they bear due to a natural disaster – lost productivity, structural damage, financial losses, psychological and emotional stress, and reputational harm. Although the narratives expressed in this study are a snapshot into the world of 11 small business owners the study does suggest the type of circumstances the broader community of small business owners face in such events.

My gratitude to the 13 key informants with knowledge, experience and an understanding of emergency management matters to support small business during a natural disaster. Informants' rich insights dovetail with the business owners' insights to provide a deeper understanding of the structures, processes and programs that exist to respond to natural disasters. Most interesting and serendipitous, many informants were found to be former [small] business owners/managers. These informants interwove their own experiences of natural disasters alongside their current knowledge and experiences of disaster management to enrich and heighten the intricacies and complexities that exist when communities respond to unpredictable events.

I extend an appreciation to my supervisors during this dissertation, especially for their time, patience and commitment to this project that has been some time in completion – Associate Professor Deanna Grant-Smith (principal supervisor) and Professor Amisha Mehta. I also wish to acknowledge Dr Robin Price, my original principal supervisor.

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# Chapter 1: Introduction

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This thesis investigates Australian business owners who have faced sudden onset natural disasters during small business ownership. The study focus is on the response phase of the disaster cycle. The phase is characterised as short-lived, action-oriented, involving fast decisions and the allocation of resources (Coppola, 2015). When facing a natural hazard, small business owners (SBOs) are their own first responders. In Australia a small business is defined as one with fewer than 20 employees (Australian Government, 2017; Gilfillan, 2015). They account for 98 percent of the Australian business population (ASBFEO, 2019). The majority have few, if any, workforce, mainly non-employing or micro-enterprises with up to four employees (ASBFEO, 2019). Australia-wide these two categories comprise 89 percent of the business population while those businesses with between five and 19 employees make up the balance of small businesses (ASBFEO, 2019). Therefore, the ability of a SBO to mobilise resources in the face of disruptive, high-consequence events like a disaster may be limited.

To date there has been an absence of studies that explore the personal accounts of SBO's decision making during the response phase of a natural disaster. Studies that examine the for-profit businesses and natural disasters have chiefly been organised around prevention, preparedness and recovery phases of the disaster management cycle while the response phase has been neglected (Landahl & Neaves, 2017; Tierney, Lindell, & Perry, 2001).

The current study has two main aims. The first aim is to explore the decisions and decision strategies of SBOs during a natural disaster. Their decision making is explored through the lens of recognition primed decision making (RPD), a descriptive decision model focussing on an individual's cognitive resources. The model emerged from the naturalistic decision making (NDM) paradigm (Orasanu & Connolly, 1993). NDM's emphasis is on decision making experienced under conditions of uncertainty, time pressure, and high stakes consequences. The second aim is to explore the affordances provided to small business by public and non-government entities to help them restore business operations and support community recovery. Business capitals

as a conceptual framework is used to gain a nuanced insight into the complexities of issues facing SBOs in a disaster context.

This introductory chapter begins by highlighting the global impact of disasters and domestic issues that have a bearing on Australia's disaster management. The chapter then turns to a review of Australia's small business sector before a synopsis of the literature gaps relating to the business sector and natural disasters. The context of the study, Southeast Queensland (SEQ), is introduced, motivations for the study are given, then the research design and the study questions. This is followed by the contributions of the study before presenting the study scope and an outline of each chapter.

## **1.1 BACKGROUND**

A disaster occurs at the interface of a hazard and a human settlement with its embedded cultural, socio-economic and physical conditions (Paul, 2011). A disaster is:

a serious disruption of the functioning of a community or a society due to hazardous events interacting with conditions of exposure, vulnerability and capacity, leading to one or more of the following: human, material, economic and environmental losses and impacts. (AIDR, 2019, p. vii)

Natural hazard disasters, those originating in nature, being sudden onset events of earthquakes, cyclones, severe storms, bushfires, flash flooding and tsunamis, are the focus of this study.

Natural disasters are a global phenomenon with significant socio-economic consequences across nations. In 2020 the Centre for Research on the Epidemiology of Disasters (CRED) EM-DAT reported in the *Human cost of disasters* (CRED, 2020) between 2000 and 2019 worldwide, 7,348 disaster events were recorded. These caused 1.23 million deaths which translates to an average of 60,000 lives lost annually that had an impact on some 4 billion people (CRED, 2020, p. 6). Globally these disasters represented some US\$2.97 trillion in economic losses (CRED, 2020, p. 6).

In the Australian context it is acknowledged natural disasters are increasing in frequency and intensity across the nation (Australian Senate Environment and Communications References Committee, 2013; Climate Council, 2017; Department of Home Affairs, 2018; Munich Re, 2015; Owen, Bosomworth, Bearman, & Brooks, 2013). While the occurrence of natural disasters in the past may have been perceived as the exception rather than the rule now they appear to be the norm as communities

are experiencing multiple events within shorter timeframes (Department of Home Affairs, 2018; Himes-Cornell et al., 2018; Owen et al., 2013). Some researchers suggest natural disasters are qualitatively changing in severity and presenting as ‘structurally’ different or being described as ‘out of the box’ events (De Smet, Schreurs, & Leysen, 2015). In the Royal Commission into National Natural Disaster Arrangements natural disasters are referred to as “unprecedented” (Royal Commission into National Natural Disaster Arrangements, 2020).

The implications of unprecedented natural disasters are various. These events are heralding a new era in our domestic security. They are creating vulnerabilities for biosecurity and agricultural production, threatening tourism industries and the economy more broadly (Glasser, 2019). Natural disasters are placing an increased financial burden on the Australian community (Glasser, 2019). On a global scale Australia ranks 10<sup>th</sup> in the top 10 countries for having the highest natural disaster costs (International Federation of Red Cross and Red Crescent Societies, 2018). Deloitte Access Economics (2017) estimate natural disaster costs to Australia between 2006 and 2016 averaged \$18.2 billion annually. This figure is equivalent to 1.2 percent of the country’s gross domestic product (GDP) for the same period. The economic costs for natural disasters are forecast to rise by 3.4 percent per annum and expected to reach \$39 billion by 2050 (Deloitte Access Economics, 2017). These calculations ignore climate change influences (Deloitte Access Economics, 2017, p. 7) and arguably are conservative projections given the data rely on retrospective pre-2016 statistics, overlooking some catastrophic disaster events since 2017 (e.g. Deloitte Access Economics, 2019; Royal Commission into National Natural Disaster Arrangements, 2020).

In addition to the financial burden of natural disasters two other concerns emerge from their occurrence. First, Australia’s standing as an economy with a comparative low public debt may well be jeopardised. Natural disasters can alter the fiscal impact on government expenditure to support disaster-affected communities. Recurring disasters exert pressure on national, state and local governments’ budgets, alter those disaster-affected regions’ contribution to GDP, affect revenue sources like taxation, and may influence the nation’s borrowing capacity and servicing of interest repayments (Commonwealth of Australia, 2021; Munich Re, 2015; Productivity Commission, 2014). Second, Australia’s competitive advantage in the global

economic market may be negatively affected as the country experiences more intense and frequent natural hazards of catastrophic scale. Such large-scale disasters draw down a government's funds for betterment investment and disaster relief assistance that support recovery in disaster-affected communities. Given Australia's propensity for natural hazard disasters it will become increasingly challenging for the Australian government and its citizens to continue to cushion against recurrent natural events (Munich Re, 2015).

### **1.1.1 Trends shaping natural disasters and their impacts**

Several trends can explain the rise in natural disasters in Australia. Population growth has been an important contributor. Over the last 10 years, the population growth has been at 1.6 percent annually with a forecasted increase to 28.8 million people by 30 June 2031 (Centre for Population, 2020). As a nation Australia is highly urbanised with most of the population and its major urban centres concentrated within 50 kilometres of the coastline (Head, Adams, McGregor, & Toole, 2014).

Population growth places pressure on land-use and settlement patterns (Department of Home Affairs, 2018; Karl & Trenberth, 2003; Queensland Government, 2017b). It also increases the concentration of people living and working in their communities with a greater interdependency and interconnectedness on infrastructure, transportation systems (road, rail, air, and sea networks), energy, communications and technologies, financial systems and supply chains (Department of Home Affairs, 2018; Owen et al., 2013; Queensland Government, 2017b).

As urbanisation expands to accommodate population increases so does its encroachment into hazard prone areas (White & Etkin, 1997). Australians migrating to coastal regions create denser settlements and changing lifestyles with the concomitant contact of humans and their valued assets with natural hazards: exposure to bushfires, severe storms, tsunamis, heavy rainfalls and flooding (Clark & Johnston, 2017; White & Etkin, 1997). Sea-level rises will place further risks to settlements and infrastructure from coastal erosion and inundation (Clark & Johnston, 2017; COAG, 2011).

### **1.1.2 Community responsibility to share the burden for natural disasters**

Recognising the costs of natural disasters and the demographic pressures exerted across governments and the economy, the Australian Government shifted its

emergency management focus from “responding to disaster events” (Salter, 1998, p. 22) to a comprehensive and integrated approach to address them (Cronstedt, 2002; Rogers, 2011). In 2011, the Council of Australian Governments (COAG) introduced a whole of government, whole of nation resilience-based policy to deal with emergency management. This high level, strategic policy, the *National Strategy for Disaster Resilience (NSDR)*, places responsibility for responding to and anticipating disasters beyond governments and their emergency management agencies to all Australians. Disaster management is conceived as a “shared responsibility” inclusive of individuals, households, families, businesses and the community (COAG, 2011, p. iv).

Governments expect Australians to lessen the effects of a disaster by developing their own strategies around four emergency management areas: preventing emergencies; preparing for emergencies; responding to emergencies; and recovering from them. This is otherwise known by the abbreviation PPRR or prevent, prepare, respond and recover. By developing relevant measures crosscutting each PPRR function it is suggested the community’s dependency on governments will lessen (COAG, 2011). More recently the *National Disaster Risk Reduction Framework*, leveraging off the NSDR, has reinforced the place of collective actions by businesses and others to help reduce disaster risks associated with natural hazards (Department of Home Affairs, 2018).

Embedded in the NSDR is the expectation small businesses reflect their “shared responsibility” by being disaster ready when facing a natural disaster. This means they are to be self-reliant and have assessed all their risks and instituted business protective plans to support a response to a disaster (COAG, 2011). However, small businesses are by nature known to be resource-poor (Gilfillan, 2015; Loucks, Martens, & Cho, 2010; Smallbone, Deakins, Battisti, & Kitching, 2012). In the context of a disaster and business research, SBOs are found to not use many measures to prepare for adversity (Josephson, Schrank, & Marshall, 2017; Sadiq, 2011), and those preparatory activities used tend towards safety and human survival (Webb, Tierney, & Dahlhamer, 2000). Tierney (2007) has observed businesses do survive and recover from natural disasters. This then suggests the business owner’s decisions and decision making may play a major contributory role to overcome the disaster.

### 1.1.3 The Australian small business sector

Australia's small business sector, defined in terms of businesses employing fewer than 20 employees, represent 98 percent of all businesses in this nation (or 2,259,098 firms) (ASBFEO, 2019, p. 7). Thus, they form a significant population group in the business community. Classified into three sub-categories, the dominant form of small business is *non-employing*, owner-operator, sole trader businesses that account for 62 percent of the business population. *Micro-businesses* with between one and four employees make up 27 percent of the business population. The combined figures of the two categories mean around 89 percent of the Australian business population has four or fewer workers. A third category of *small business* employs between five and 19 employees, and this represents 8.5 percent of the total business population (ASBFEO, 2019, p. 7). As a comparison, around two percent collectively make up medium sized businesses (20-199 employees) (or 50,338 firms) and large corporations ( $\geq 200$  employees) (or 3, 855 firms) (ASBFEO, 2019). Unsurprisingly then, on numbers alone, Australian small businesses are the engine room of the nation's business landscape (ASBFEO, 2019).

The literature on small business emphasises they have a key socio-economic role supporting community functioning (Zhang, Lindell, & Prater, 2009). They are responsible for providing goods and services to the community, employment for local households, taxation revenue to governments, value adding to the gross domestic product (ASBFEO, 2019; Zhang, et al., 2009) and are a source of innovation and niche markets (Storey, 2016b; Vossen, 1998).

Data on the Australian small business sector identify their significant economic contribution to the nation. National statistics collated by the Australian Small Business and Family Enterprise Ombudsman (ASBFEO) found for the period between 2018 and 2019, the sector contributed almost \$418 billion to the country's GDP, being the equivalent of 32 percent of the nation's total economy. With respect to tax revenue, the small companies contributed 22 percent of total tax revenue in 2017 and 2018. Moreover, small businesses employ over 4.7 million people representing 41 percent of the business workforce, thus they form the largest employer group nation-wide. This preliminary data becomes more poignant as it reflects the small business contribution before the 2019-2020 bushfires followed by the Coronavirus-19 pandemic in early 2020. The latter observation should be taken into account as the impact of the two



disasters, the losses across taxation revenue, workforce, value adding to products and services to GDP and business survival, has yet to be fully realised and reported (ASBFEO, 2020; p 4).

The preceding economic indicators highlight the vital place of the sector in Australia's socio-economic system. Disasters and their impact can be all-encompassing. When businesses are disrupted by a natural disaster the event can affect the business and its owner causing hardship, loss of assets, income and retirement savings and ultimately the demise of their business. The disaster impact may cascade beyond the business to the employees, customers, suppliers, financial institutions and governments (Howe, 2011, p. 712). Businesses, the community and government are implicated in the costs of restoration and recovery processes (Howe, 2011). Recognition of these economic and social factors provide a clear justification for inquiry into this business category and their business owners.

The responsibilities and concerns of government and those emergency services involved in responding to a disaster are focused on the emergency, primacy of life and protection of property and the environment (AIDR, 2019) rather than business survival (Zolin & Kropp, 2006). Unlike "prescribed statutory authorities" who experience a disaster as one that is "beyond their day-to-day capacity" and needing to mobilise resources beyond those normally available to them (COAG, 2011, p. 22), a business owner's response to the same event relies on the resources they possess at that time.

To date, the small business and disasters literature has yet to investigate decision making of business owners during a disaster response nor how they mobilise their resources at the time. Drawing on a decision theory suggests an avenue to understand how SBOs respond to the same disaster event as prescribed statutory authorities.

#### **1.1.4 Gaps in the business and disaster literature**

Research into natural disasters and the for-profit sector has largely been organised around the functions of PPRR. Most of the scholarly investigations have been situated within the prevention, preparedness and recovery phases with less attention devoted to the response phase. This has been acknowledged by some scholars (Landahl & Neaves, 2017; Tierney et al., 2001). A limited examination of small business in the response phase of a disaster is noted (Cater & Chadwick, 2008; Cioccio & Michael, 2007; Doern, 2016; Drabek, 1995; Irvine & Anderson, 2004; Morrish & Jones, 2020; Runyan, 2006; Zolin & Kropp, 2006). That research which has been conducted has

involved a mix of family businesses with multiple chain stores (Cater & Chadwick, 2008), public sector and private corporations (Drabek, 1995; Zolin & Kropp, 2006) and independently owned and operated hospitality related tourism businesses (Cioccio & Michael, 2007; Irvine & Anderson, 2004; Morrish & Jones, 2020).

Business size definitions, using employee headcount, has been the demographic to determine what constitutes a “small business”. The research has drawn population samples using a mix of full-time employees for any sized business (Drabek, 1995; Irvine & Anderson, 2004), small businesses with fewer than 100 employees (Doern, 2016; Runyan, 2006) or undisclosed employee numbers (Cater & Chadwick, 2008; Cioccio & Michael, 2007; Morrish & Jones, 2020; Zolin & Kropp, 2006), confusing both the definition of a small business and their findings. Few businesses could be categorically identified as very small, employing fewer than 20 employees.

The effect of size demographics on business survival from a disaster has been inconclusive. Older research has indicated small businesses are more vulnerable to losses and demise from a natural disaster compared with larger corporations (Chang & Falit-Baiamonte, 2002; Webb, Tierney, & Dahlhamer, 2000), however recent research contests these historic findings (Brown, Stevenson, Giovinazzi, Seville, & Vargo, 2015; Corey & Deitch, 2011). Instead, later research suggests it is the sector that influences disaster impact and recovery (Brown et al., 2015) or the degree of storm damage, population dislocation and post disaster issues (Corey & Deitch, 2011) that play a key role in business survival.

Another deficiency in the studies to date is that the sample populations have involved a mix of business owners (Cioccio & Michael, 2007; Doern, 2016; Morrish & Jones, 2020) and salaried employees (Cater & Chadwick, 2008; Drabek, 1995; Zolin & Kropp, 2006). Irvine and Anderson (2004) surveyed tourism providers whose agricultural base suggested several income streams while Runyan (2006) combined business owners with managers and Chambers of Commerce agents.

Notably the research has centred exclusively around the perspectives of business operators. Knowledge of other “voices” that support a natural disaster response are missing. Doern (2016) identified this point in her study of the London 2011 riots suggesting the disasters/crisis literature would benefit from several stakeholder voices beyond business owners such as local council officials or insurance providers.

Research concentrating solely on business owners' decisions and decision making during the response phase of the disaster management cycle has been negligible (Hoffman, 2015; Landahl & Neaves, 2017; Tierney et al., 2001). Although Runyan (2006) and Drabek (1995) both assert making decisions during a natural disaster is haphazard and complicated, Tierney (2007) contends decision making has been largely ignored in natural disasters and business research. Within the NDM, Hoffman (2015) explicitly called for research that applies decision theories located in natural settings that deal with challenging events like natural disasters. He further suggested diversifying the individuals examined by moving beyond subject matter experts like military leaders and firefighters to ordinary citizens. This study attends to each of these calls.

The current transdisciplinary study therefore addresses several research gaps. *First*, it has a focus on natural disasters in the Australian context situated in the response phase of the disaster cycle. *Second*, it examines SBOs with fewer than 20 workers. Exclusively targeting a business category with fewer than 20 employees has been lacking in the literature. The choice of small business is also linked to the Australian disaster determination that sets out the requirements for disaster relief and assistance (Australian Government, 2017). Eligibility criteria for receiving special financial assistance is focused on this business category, thus reinforcing political authorities recognition of their economic significance while concurrently their vulnerability in a disaster context. Notably, it is uncommon for the literature to reference the role of a disaster policy and its relationship to a specific business category. *Third*, it addresses the absence of a theoretical decision lens in the business and natural disaster response literature and attends to Hoffman (2015) and Tierney (2007) appeals to extend the research agenda in NDM to the disciplines of business and natural disasters. *Fourth*, this study will focus on SBOs as an original domain of occupations studied in the NDM framework applying the RPD model. *Fifth*, this student responds to Doern's (2016) proposition that multiple voices should be captured in studying small business during the response phase of a disaster. To address this, the perspectives of SBOs are combined with key informants from public and non-government sectors to gain knowledge of the affordances these entities provide to benefit businesses during a disaster. *Finally*, past studies into business, response phase and natural disasters have overlooked the integration of multiple business capitals as a

conceptual framework to report their findings. Studies known to employ a capitals approach typically use a few capitals. As example, Haynes, Danes, Schrank, and Lee (2018) applied a composite of social, human, and financial capitals, while Xiao, Wu, Finn, and Chandrasekhar (2018) drew on social, human and institutional capacities. This study broadens the capitals framework to incorporate human, financial, manufactured, political, social and natural capitals to understand the place of each in a business owners' decisions responding to a natural disaster.

## **1.2 CONTEXT FOR THE STUDY**

The context for this study is Southeast Queensland (SEQ). The region is situated in the State of Queensland, Australia and known to be hazard prone (Queensland Government, 2017b). SEQ has been the site of several catastrophic natural disasters, notably the Brisbane Floods in 2010-2011, Cyclone Yasi (31 January - 03 February 2011), and Severe Tropical Cyclone Debbie (25 March – 29 March 2017).

The SEQ region is undergoing trends reflective of those identified at sub-section 1.1.1 of rapid urbanisation, population growth, concentration of the population along the coast and advanced interconnectedness and interdependency in its supply chains both domestic and international (Queensland Government, 2017b). Comprising 10 local government areas (LGAs) covering an area of 22,900km<sup>2</sup>, SEQ is the home of the capital city of Brisbane and notable major population centres of Ipswich, Moreton Bay, the Sunshine Coast, the Gold Coast and Lockyer Valley (Queensland Government, 2017b).<sup>1</sup> Population projections of 5.3 million by around 2040 (Queensland Government, 2017b) make SEQ one of the fastest growing regions in the nation with one out of every seven Australians living there (Queensland Government, 2017b, p. 18). Around 71 percent of Queenslanders reside in the SEQ region (Queensland Government, 2017b, p. 18). Consequently, planning by governments for the region combines urban consolidation within the current urban footprint situated around existing infrastructure systems and networks then expansion into green fields (Queensland Government, 2017b).

The concentration of populations into a hazardous landscape creates an increased risk of exposure to natural hazards. Especially considering climate change

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<sup>1</sup> Refer to Chapter 5 Research Design, section 5.2, Figure 5.1 for a map of Southeast Queensland and its respective LGAs. The map shows the region's placement in Queensland and its relationship to other Australian States.

is expected to amplify the extreme weather events of tropical cyclones, floods, heat waves and bushfires (Department of Home Affairs, 2018; Kuruppu, Murta, Mukheibir, Chong, & Brennan, 2013; Queensland Government, 2017b). These hazards will impact communities with the attendant financial, social and economic burdens (Deloitte Access Economics, 2016; 2017).

Small businesses are found in every community across each of the LGAs. Across the State of Queensland, 73 percent of small businesses are found in SEQ with 64 percent of these businesses being sole traders (Queensland Government, 2019) and 27 percent employing between one and four staff (Queensland Government, 2019). They chiefly operate in a major city (Queensland Government, 2018b). On average there are 86 small businesses per 1000 residents in Queensland (Queensland Government, 2017a). However, in the LGAs of the Gold Coast and Sunshine Coast this figure reaches 100 small businesses per 1000 residents (Queensland Government, 2017a). Hence, in SEQ, with its vulnerabilities to natural hazards and the prevalence of small business found along the coastline, many are pre-disposed to interfacing with several natural hazard disruptions that will potentially impact business owners twice, as a business and as a homeowner (Runyan, 2006; Xiao et al., 2018).

Small business owners in SEQ are the focus of this study. Meagre empirical research on small business and natural disasters has been conducted in Australia, the exception being Cioccio and Michael (2007). These scholars examined hazard management activities of tourism industries affected by bushfires in rural Northeast Victoria. To date the SEQ region has yet to be the setting for natural disasters and small business research, this is despite the region being highly vulnerable to natural hazards and experiencing some of the costliest natural disasters across the nation (Deloitte Access Economics, 2019, p. 18). This study addresses this omission.

### **1.3 MOTIVATION**

My interest in exploring natural disasters and small business stems from my own experiences of such events. Growing up in Victoria, bushfires and droughts were two common hazards facing the community and the agricultural sector which frequently impacted my parents' income in running their business. In January 2003, I worked in Canberra where the community experienced devastating bushfires. Several friends lost their home-based business, and I witnessed first-hand the difficult and challenging

issues confronting them as they reviewed their future and their livelihoods linked to their business. Living in Brisbane at the time of the January 2011 Brisbane floods and Severe Tropical Cyclone Debbie in 2017 added to my first-hand insights into natural disasters and the devastation they have on communities. For one of these events, I worked with community groups referring individuals and families to supports in the aftermath of the event. What struck me was the extreme range of circumstances people contend with resulting from a single natural hazard: homelessness; eviction; loss of personal effects and possessions; loss of livelihoods and hardship, infrastructural breakdowns; utilities disruptions; and family distress. This personal interaction with the community drew my attention to the wide-ranging supports needed by people in the hours, days and weeks after a disaster. However, what was less visible to the public eye was the support needed by the business owners.

Media tends to concentrate on community clean-up and the images of Mud Armies<sup>2</sup> working in their communities to return the streets and homes into habitable places. Yet little coverage is given to the plight of SBOs dealing with the same event. When businesses are the subject of media reports the focus is often about the goodwill and charitable contributions of larger corporations donating to the community. This aroused a curiosity to understand what assistance was available to small business and how and where do business owners access information directed to them specifically.

When the prospect of completing a doctorate was canvassed my preference was for a topic that was current, topical and had practical relevance. It needed to complement my past knowledge and experiences with the emphasis on small business. Residing in Brisbane, SEQ as a recognised hazard prone environment, I had an immediate and accessible natural laboratory to conduct my disaster research.

#### **1.4 RESEARCH DESIGN AND RESEARCH QUESTIONS**

Underpinned by the critical realism perspective a qualitative research design was adopted for this study. The methodology was chosen to best capture the lived experiences of purposively selected SBOs exposed to a natural disaster while trading.

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<sup>2</sup> Mud Army is a term used in Queensland to refer to the spontaneous emergence of volunteer citizens who pitch in and lend their time and energy to cleaning up the streets and homes and their community after a natural disaster. This was particularly evident following the Brisbane Floods in 2011. <https://www.brisbanetimes.com.au/national/queensland/queensland-floods-2011-mud-army-shows-city-spirit-20160113-gm4q0r.html>

Key informants with knowledge of disaster management practices and procedures linked to small business were recruited to contribute further insights into the affordances offered by public and non-government entities to small business. Data was collected applying a knowledge elicitation tool, the critical decision method administered to SBOs; a semi-structured interview protocol given to key informants; official documents; and field notes. Thematic analysis was used to analyse the data.

Three research questions guided this study:

1. What are the decisions faced by small business owners responding to a natural disaster?
2. How are small business owners mobilising their business capitals to secure business continuity in response to natural hazard disasters?
3. What are the affordances provided by external business stakeholders, notably governments and other non-government entities, to support small business owners to overcome natural hazard disasters?

## **1.5 RESEARCH SIGNIFICANCE**

The overall significance of this study is the contribution it makes to knowledge regarding the decision processes of SBOs during a natural disaster. Specifically, the study acts to verify the fit of RPD to SBOs' decision strategies in the context of a natural disaster. Furthermore, this study is the first to combine a NDM theory with a business capitals conceptual framework that is situated in the small business and natural disasters response literature. It examines the decision processes of business owners associated with the mobilisation of their business capitals. There appears to be a dearth of research dedicated to examining SBOs' decision processes in the context of SEQ where natural disasters are recurrent and can have consequential impacts on small business operations.

Subsequently the study contributes to policy, practice and knowledge specifically related to SEQ and the Queensland jurisdiction in general. Recommendations include a review of post disaster data collection techniques, disaster communications and business disaster resources. The knowledge gained from this thesis can form baseline data for future research.

## 1.6 SCOPE OF THE STUDY

This study is bounded in its scope. First, the focus of the research is situated at the response phase of the disaster management cycle (AIDR, 2019). This study pays cursory attention to the functions of prevention, preparedness and recovery of the disaster cycle. Rather, the emphasis here is on filling a gap in the studies addressing those business owners who are non-employing or with few employees and their decision making during a response to a disaster.

Second, the literature review has been scaled to research that shares similar contextual elements to address natural disasters in Australia. Therefore, this review draws on the empirical findings from studies conducted in the United States, New Zealand and United Kingdom. These countries have established disaster management institutions, laws, policies and procedures along with disaster relief and assistance programs that share some features similar to the Australian system.

It is acknowledged that empirical contributions on natural disasters and business have been published relating to Asian economies (Asgary, Anjum, & Azimi, 2012; Dahles & Susilowati, 2015; Khan & Sayem, 2013; Liu, Xu, & Han, 2013; Melde, McKenzie, & Woodruff, 2012; Neef, Panyakotkaew, & Elstner, 2015). The studies are instructive, offering important learnings to the field. Notwithstanding, the economies commonly receive extensive international support from non-government organisations, humanitarian aid and donations as well as the mobilisation of overseas personnel to support the clean-up and recovery process. Another difference is the economies throughout Asia often lack investment in technologies, advanced warning systems and risk communications, have low-income levels, poor institutional supports and infrastructural development to support a coordinated emergency management response (Cavallo & Noy, 2010; Wisner, Blaikie, Cannon, & Davis, 2004). Moreover, these small businesses are often located in hazardous areas and operate from unsafe facilities (Asgary et al., 2012). Thus, to ensure comparability of findings the evidence reviewed in this study is bounded.

Finally, this study steps away from issues of risk management, resilience, adaptation and climate change. Instead, the focus is on SBOs and their cognitive decision processes elicited through the critical decision method, applying the lens of recognition primed decision making with the findings mapped to a business capitals conceptual framework.



## 1.7 THESIS OUTLINE

Thus far the chapter has outlined the aims of this study and detailed the background and influences that are pressing issues for Australia in terms of natural disasters. The chapter provided an overview of the context, research design and research questions, then the delimits of the study, and last, several contributions arising from the research. Next, the organisation of this thesis is presented.

Chapters 2 and 3 provide background literature related to small business and disasters. Chapter 2 begins with a broad overview of the Australian institutional arrangements and overarching policy for emergency management. Chapter 3 targets the literature on the response phase of business and natural disasters. The knowledge shortcomings in the disasters-response phase and small business literature are identified leading to the three research questions this study addresses. The conceptual framework of business capitals is introduced as the organising structure for categorising the thematic analysis and to report the empirical findings.

Chapter 4 presents the theoretical lens of RPD making. The research design for the study is detailed in Chapter 5. Chapters 6 and 7 present the empirical results and thematic analysis from this research. Chapter 6 reports on SBOs' decisions and decision making during a natural disaster event (natural capital) and the effect of the event on business owners' capitals (human, manufactured, financial, and social). Chapter 7 reports the data on the affordances provided by government and non-government stakeholders. The findings from Chapters 6 and 7 are discussed in Chapter 8 with reference to the literature to answer each research question.

Finally, Chapter 9 concludes with a discussion of the research contributions to knowledge creation and practice. Limitations of the study are stated and areas for future research identified.



# Chapter 2: Disaster management in Australia

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This chapter is a scene setter, providing foundational information relating to the Australian context to understand the nation's approach to disaster management. It is prefaced by indicating the information relies on practical and policy details more so than theoretical literature. It addresses background details about Australia's emergency management arrangements. The components discussed include the disaster management cycle, jurisdictional arrangements for disasters, funding with respect to the small business sector and a restatement of the main points of Australia's National Strategy for Disaster Resilience (NSDR) policy with its relevance to small business. This chapter is a prelude to Chapter 3 which focuses on small business, business owner attributes and the research on business responses to natural disasters.

## 2.1 AUSTRALIA'S EMERGENCY MANAGEMENT FRAMEWORK

In Australia the terms disaster management and emergency management are used somewhat interchangeably.<sup>3</sup> At the political institutional level the Australian Government defines emergency management broadly. Emergency management incorporates the public, non-government and the private sector as key players involved in the delivery of emergency management, and the arrangements for planning activities, procedures and processes implemented to protect the community from and in the event of a disaster:

Emergency management is a range of measures to manage risks to communities and the environment; the organisation and management of resources for dealing with all aspects of emergencies. Emergency management involves the plans, structures and arrangements which are established to bring together the normal endeavours of government, voluntary and private agencies in a comprehensive and coordinated way to deal with the whole spectrum of emergency needs including prevention, response and recovery (COAG, 2011, p. 22).

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<sup>3</sup> The Australian Government tends to apply the terms emergency management to official documents rather than disaster management. Terminology is often a jurisdictional preference and may also be enshrined in legislation across the tiers of government, state, territory and local governments (AIDR, 2019, p. vii; Queensland Government, 2018a).

Australia's management of emergencies including disasters is influenced by the nation's Constitution. The Constitution provides for a State-based management of emergencies, disaster policy and service delivery (AIDR, 2014; Cronstedt, 2002; Gabriel, 2003). State and Territory Governments (herein referred to collectively as "the States"), through their public instrumentalities, deliver the emergency management services and provide personnel to respond to routine emergencies and larger scale disaster events (Gabriel, 2003). Operationally this reflects those essential services established and resourced with relevant trained personnel to fulfil the requirements of their respective charters (Bosomworth, Owen, & Curnin, 2017; Fitzgerald, Tarrant, Aitkin, & Fredriksen, 2017). That is, police fulfil law enforcement tasks, fire services manage fires, paramedics and ambulance services respond to pre-hospital patient care with public hospitals and state emergency services also engaged in managing the response (Fitzgerald et al., 2017; Gabriel, 2003).

With legislative requirements placing decision making at the lowest level of (public) authority (AIDR, 2014, 2019) the States have responsibility for building their community's resilience to emergencies and disasters. Local governments work closely with State Governments in supporting the States' emergency management direction (Gabriel, 2003). They do this in several ways: (a) carrying out planning and preparedness activities, (b) undertaking operational responses; (c) promoting disaster education and awareness; (d) undertaking mitigation measures to reduce disaster impacts; (e) contributing to local emergency response capability; (f) establishing warning systems; and (g) representing community interests in the emergency management hierarchy (AIDR, 2014, 2019).

While the emergency management arrangements have principally remained unchanged for decades, a shift occurred from an historic command and control structure for overseeing the arrangements (Carayannopoulos, 2018) to one that is community centred (Cronstedt, 2002; Salter, 1998) and takes a comprehensive emergency management approach that is based on all-hazards; underpinned by all-agencies; and involves a prepared community (Rogers, 2011).

A comprehensive emergency management (CEM) approach relates to the disaster management cycle discussed next. The model was influenced by the United States emergency management system where it was introduced by the State Governors' Association in the late 1970s and subsequently imported into Australia's

emergency management system (Cronstedt, 2002). An all-agencies approach involves the integration and engagement of all levels of government, and their relevant agencies and organisations. Further, the for-profit business and non-profit sectors, emergency volunteers and community are contributors to the development and maintenance of an emergency-ready nation (AIDR, 2014, 2019). An all-hazard approach means any hazard type whether natural, technological, or human created gets covered as risks to a community and are accommodated in the measures addressed under the disaster management cycle (AIDR, 2014). In relation to a prepared community, disaster management is the responsibility of all Australians to be prepared for and manage their own response to any type of hazard (natural or unnatural) (AIDR, 2019; COAG, 2011).

Figure 2.1 provides an illustrative representation of Australia’s emergency management structure. Founded on a platform of building resilience in the community, emergency management includes political institutions, their laws, policies, processes and procedures. The PPRR functions influence how emergencies are managed and cascade across all tiers of Australian governments. Implementation of the model accords with state and territory jurisdictional laws and structures (AIDR, 2019; Eburn, 2013; Gabriel, 2003).

**Figure 2.1** Platform for Australian emergency management and disaster cycle



*Notes:* Adapted from Etkin (2016, p.206).

## **2.2 THE DISASTER MANAGEMENT CYCLE**

The disaster management literature acknowledges several frameworks have been developed to understand disaster processes (Etkin, 2016; Ghandour & Benwell, 2012; Smart, 2014). Noteworthy are the Four Rs (Reduction, Readiness, Respond and Recovery) (Smart, 2014), the Pressure and Release model related to vulnerability and risks within communities (Wisner et al., 2004), the risk management model (Etkin, 2016; Salter, 1998), and the CARE model (Etkin, 2016). This study adopts the disaster lifecycle framework also referred to as the disaster management cycle that is underpinned by PPRR (AIDR, 2019; Ghandour & Benwell, 2012).

The disaster management cycle is both a theoretical and practical tool to understand disasters. Theoretically the PPRR constructs form the basis to structure research inquiry (De Smet, Schreurs, & Leysen, 2015). It also underpins Australia's CEM approach and its policy and practices (AIDR, 2014, 2019; COAG, 2011).

### ***Prevention***

The starting point for the disaster management cycle is arbitrary, given its cyclic nature (Wood, Boruff, & Smith, 2013). Prevention, the first 'P' in the PPRR model, seeks to eliminate or reduce the impact of hazards and to increase a community's resilience to them (AIDR, 2014). Prevention involves strategies and activities that relate to longer term planning. Relevant strategies involve land use planning, building code compliance and construction design regulations, infrastructural development, forecasting and warning systems together with access to mapping, earthquake and tsunami monitoring information and community disaster education and awareness campaigns (AIDR, 2014, 2019; Lindell, 2013; Schneider, 2018). Such approaches are designed to reduce the physical impact of a disaster when the built environment is assaulted by natural forces and for the protection and preservation of human life (AIDR, 2019; Lindell, 2013).

### ***Preparedness***

Pre-impact disaster preparedness measures, the second 'P,' target interventions for an effective disaster response (Wood et al., 2013). The measures contribute to prescribed statutory authorities and community members strategies to deal with a disaster and help with the recovery from such an event (AIDR, 2014). The phase is about having developed disaster planning arrangements in anticipation of unexpected and

unpredictable threats. Measures emphasise risk assessments, emergency training, stockpiling supplies and developing emergency/disaster response plans, with details about mobilising human and physical resources of equipment, supplies, facilities and materials as an imminent threat unfolds (AIDR, 2014; Etkin, 2016; Wood et al., 2013). Other preparedness activities by government target supports to the community like education and training programs, delivering public disaster information and resources, establishing early warning systems and telephony emergency alert systems (AIDR, 2019).

### ***Response***

The response phase, the first ‘R’, is known by alternative terms of emergency response or short-term response (Macdonald et al., 2015). The response phase occupies a period of days through to several weeks (Coppola, 2015; Macdonald et al., 2015), and begins when a hazard is recognised or detected (Coppola, 2015). It is characterised as short-lived, task-oriented and involves decisions especially about the mobilising of the resources as set out in a disaster plan (Coppola, 2015). The Queensland Government, where the context of the study is set, from a political perspective regards a response as “the taking of appropriate measures to respond to an event, including action taken and measures planned in anticipation of, during and immediately after an event to ensure that its effects are minimised and that persons affected by the event are given immediate relief and support” (Queensland Government, 2018a, p. 97).

With respect to governments, early actions involve broadcasting warnings to the community at risk of the emerging hazard (Anderson-Berry et al., 2018), across various media covering radio, television, print and digital through websites, social media and apps (Lindell, 2013). Implementing emergency disaster plans, applying standard operating procedures to manage operational emergency management responses, the establishment of emergency coordination centres, and coordinating between and within agencies form other measures taken (AIDR, 2019; Perry & Lindell, 2003; Salter, 1998). Political institutions overseeing emergency services and prescribed statutory authorities focus on preservation and safety of human life, property and the environment (AIDR, 2014; 2019; Macdonald et al., 2015, p. 3).

At the same time as governments are mobilising resources and implementing emergency disaster plans, it is expected the warnings motivate communities, including small business, to mobilise their resources. The expectation is business owner’s, along

with the community will implement their disaster response plans, carry out precautionary measures or institute an evacuation (Anderson-Berry et al., 2018) for preservation of business survival (Zolin & Kropp, 2006).

Once the disaster has passed, the relevant statutory authorities and non-government entities turn to initial relief and assistance to support community members to meet their basic needs (AIDR, 2019). Relief is about the “efforts to meet the needs of persons affected by a disaster, to minimise further loss through the provision of immediate shelter and basic human needs” (Queensland Government, 2018a, p. 97). Relief and support take numerous forms including financial assistance, medical aid and shelter (AIDR, 2019; Lindell, 2013). With reference to the small business sector, this study considers the institutional supports small business can access across the response phase and beyond.

### ***Recovery***

The recovery phase of the disaster management cycle, the second ‘R’ in the PPRR model, relates to the post impact phase of a disaster. It involves the strategies to help restore a community impacted by a disaster. In the short term, recovery means getting the community to some state or condition of functionality (Etkin, 2016, p. 202) while medium to longer term recovery is about “restoring, rebuilding and reshaping of the physical, social, economic and natural environment” (Smith & Wenger, 2007, p. 237). To achieve these objectives, the longer-term pre-event preventative measures and planning, combine with post event actions (Smith & Wenger, 2007, p. 237).

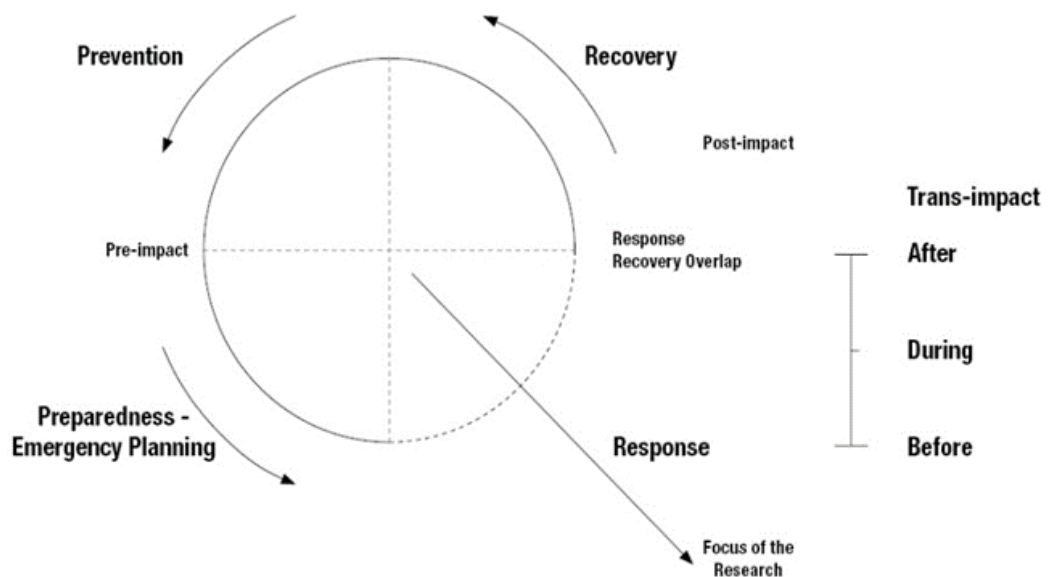
In terms of a timeframe, recovery can take anywhere from several weeks to a decade (Brown et al., 2008; Macdonald et al., 2015), with many scholars relating the recovery for communities and businesses alike is a process rather than having a clear end point (Alesch, Holly, Mittler, & Nagy, 2001; Brown et al., 2008; Marshall & Schrank, 2014; McDonald, Florax, & Marshall, 2014). The scale of the disaster, temporal and spatial factors together with the multifarious decisions to be made by political institutions and the community, affect the recovery process (Brown et al., 2008; Chang et al., 2014; Marshall & Schrank, 2014; Smart, 2014). For governments and their response agencies, the recovery overlaps the response. It starts before the disaster being integral to their emergency preparations and planning (AIDR, 2019, p. 23) then crosses over with the response phase. This is because the recovery carries



forward the flow on from the short-term response activities and the relief and assistance arrangements (AIDR, 2019; Macdonald et al., 2015).

This research examines SBO's responses to a natural disaster event. While the emphasis in this study is on the response, it is acknowledged each phase of the disaster management cycle is interdependent and correspondingly builds on each other (Etkin, 2016, p. 203). Presented at Figure 2.2 is the response phase as positioned in the PPRR cycle, between prevention and preparedness and before disaster recovery. As Figure 2.2 shows within the response phase, three temporal periods (trans-impact) of *before*, *during* and *after* the disaster are distinguished. Decisions by SBO are taken at different points across the trans-impact stages which are the focus of this study. During the same timeframe, the affordances provided by different tiers of government and non-government entities are also of interest too.

**Figure 2.2** Response phase of the disaster cycle with three temporal periods



*Notes:* Adapted from O'Brien, O'Keefe, Gadema, and Swords (2010)

### 2.2.1 Critiques of the comprehensive emergency management framework

Scholars have questioned the value of the CEM and PPRR (collectively CEM-PPRR) framework on several grounds. As the CEM-PPRR is a management tool in practice (Etkin, 2016) and a theoretical model (McEntire, 2004), one clear concern is it offers a single perspective for dealing with emergencies and disasters. Consequently, practically and theoretically it places limits around what knowledge is investigated (McEntire, 2004). Gabriel (2003) shares Etkin's (2016) and McEntire's (2004)

perspectives claiming the emergency-centric approach of the PPRR is outdated because of its singular purpose focussing on “prevention of emergencies, preparedness of emergencies, response to emergencies and recovery from them” (p.75) and suggests the narrow worldview should be expanded.

Other researchers suggest the CEM-PPRR fails to accommodate contemporary shifts towards resilience as outlined in the NSDR and warrants additional functions of early assessment and anticipation added to the PPRR model (Rogers, 2011). Vulnerability factors inherent in communities and the socially constructed contributory elements implicated in the causes of disasters need to be acknowledged (Handmer & Dovers, 2013; Wisner et al., 2004). McEntire (2004), along similar lines to Handmer and Dovers (2013), argues the CEM-PPRR approach has difficulty integrating the broader political, economic, and cultural dimensions of disasters into its framework.

With respect to an all-hazards approach, there are clear advantages in practice for emergency management authorities. Adopting an all-hazards approach avoids duplication by streamlining resources, time, effort and institutional overlaps (Altay & Ramirez, 2010, p. 64). However, scholars argue it needs to be situated within the broader issues of contemporary society and accommodate the daily routines of community members that contribute to community safety and sustainability (Gabriel, 2003). From a theoretical perspective, specifically targeting the business sector, a generic CEM-PPRR focus is suggested to mask important insights. Several researchers have indicated a cookie cutter “one size fits all” approach to all-hazards can ignore salient differences between disaster types (cyclones, bushfires and earthquakes) and how they affect businesses (Altay & Ramirez, 2010; McKnight & Linnenluecke, 2017; Wasileski, Rodriguez, & Daiz, 2011) or discount the differential impact a single type of disaster like earthquakes can have on different industry sectors (Kachali et al., 2015).

Altay and Ramirez (2010) tested several disaster types across 53 countries to examine their impact on supply chains and found evidence different disasters impacted industry sectors differentially. McKnight and Linnenluecke (2017) reviewed United States business responses to several disaster types using 10 years of press clippings and determined an organisation’s behaviour towards a disaster was influenced by the disaster type, its recurrence, and the warning time. Despite difficulties assessing the

quality of these studies' information sources and the organisational sizes examined, they do raise the suitability of applying a generalised all-hazards approach relative to a hazard-specific focus to understand how a natural disaster impacts businesses.

### 2.2.2 Financial support when a disaster strikes

The funding arrangements for natural disasters in Australia involve a combination of cost-sharing between the States and the Australian Government (Australian Government, 2017; Productivity Commission, 2014a, 2014b). The cost sharing arrangements are set out in Natural Disaster Relief and Recovery Arrangements (NDRRA) (Australian Government, 2018).<sup>4</sup> The arrangements specify those circumstances when the federal government will provide financial contributions for relief and recovery assistance to disaster-stricken areas (Smart, 2014). Under the NDRRA, an eligible disaster is one which “requires a coordinated multi-agency response and the state expenditure exceeds the small disaster criterion ... of \$240 000”. (Australian Government, 2017, p. 6). A natural disaster for the purposes of the NDRRA is defined as “one or a combination of rapid onset events covering bushfire, earthquake, flood, storm, cyclone, storm surge, landslide, tsunami or tornado” (Australian Government, 2017, p. 7).

Specific groups in the Australian community are eligible recipients of the NDRRA emergency assistance. Of the four funding categories specified to receive emergency assistance, Category B targets small business for emergency relief and concessional interest rate loans (Australian Government, 2017, p. 20; Smart, 2014). A small business for the purposes of NDRRA are those “businesses employing fewer than 20 full-time equivalent staff” (Australian Government, 2017, p. 9). Hence relief and recovery funding are conditional on meeting the mandated definitions (Buckle, 2005) of (a). being a rapid onset natural disaster, and (b). being a small business.

Thus, recognition of the two policy definitions of “a rapid onset natural disaster” and a “business with fewer than 20 employees” have influenced the targeting of small business in this study. Furthermore, as Chapter 3 highlights, empirical studies of small

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<sup>4</sup> Terminology of the NDRRA was changed in November 2018. The NDRRA program is now referred to as Disaster Recovery Funding Arrangements 2018 (Australian Government, 2018; Portillo-Castro, 2019). This study was conducted before the longstanding NDRRA Determination was changed and the new title came into effect. Therefore, the NDRRA term and determination arrangements will be used rather than the terms of the DRFA 2018 Determination.

business employing fewer than 20 employees and their responses to a natural disaster are thin.

### 2.2.3 Australia's National Strategy for Disaster Resilience

Australia's policy for managing natural disasters is the National Strategy for Disaster Resilience (NSDR) (COAG, 2011, p. v). The NSDR is informed by the CEM-PPRR framework. To recap, the strategy places responsibilities for responding to and anticipating disasters with all Australians (COAG, 2011, p. iv). Specifically, small and large businesses are tasked with responsibility for ensuring they understand the risks posed by natural disasters and are sufficiently prepared including having adequate levels of insurance (AIDR, 2014, p. 12). As businesses are crucial to economic development of their communities, they are to be at the forefront of preparedness particularly as they provide "resources, expertise and essential services" (COAG, 2011, p. v) in the post impact recovery phase and to provide continuity of services to the community during and after a disaster.

NSDR is built on a platform of resilience. Scholars observe the construct sits within a neoliberalist approach to state-society relations (Joseph, 2013; Tierney, 2015). Neoliberalism de-emphasises the involvement of the state (governments) in economic processes by governing at a distance, standing aside from intervening in individual choices and actions (Joseph, 2013, pp. 40-41). The emphasis being on bottom-up of individual responsibility to self-govern through making informed decisions, having self-awareness, being adaptable, and prepared in the face uncertainty (Joseph, 2013; Tierney, 2015). More generally resilience focuses on risk with the expectation individuals are familiar with their risks and take appropriate measures to counter their risks through information and good decision making (Joseph, 2013).

With respect to the NSDR, the NSDR policy document remains silent on a definition of resilience. Rather the NSDR provides a list of four resilience characteristics to be found across a community, in individuals and businesses: "functioning well under stress," with an ability for successful "adaptation", "self-reliance" and "social" capacity (COAG, 2011, p. 3). Thus far the correspondence between small business and the NSDR policy agenda to demonstrate resilient behaviours, engage in shared responsibility and preparedness for a natural disaster is unclear. There has been an absence of reviews and evaluations on the implementation of the NSDR resilience policy (Hunt, 2016). As a policy document, it was introduced

in an environment of incomplete disaster resilience evidence (Hunt, 2016). Hence, the merits of proposals outlined in the NSDR have remained underexamined for the past nine years, warranting future research to address this gap.

Nevertheless, the policy environment places clear expectations on small business. Individual businesses are expected to understand their risks, be prepared for all eventualities, develop preventive and preparation measures to facilitate an effective response but also draw on social support networks. In turn, such strategies are assumed to facilitate business continuity and recovery.

Small business owners are their own first responders. Whereas official first responders or prescribed statutory authorities have institutional support with structures, processes and procedures to deal with events beyond their day-to-day capacity, by mobilising additional resources, SBO who face the same event, have 'capped or finite' resources (Tierney, 2007; Zhang, Lindell, & Prater, 2009). With fewer resources available to plan for and respond to disasters, including few if any employees, it highlights the perplexing dilemma a SBO faces when confronted with any scale natural disaster disruption.

### **2.3 SUMMARY**

Chapter 1 introduced the two aims of this study. The first aim is to explore the decisions and decision strategies of SBOs during the response phase of a natural disaster while the second aim is to explore the external affordances provided to SBOs affected by a natural disaster by political institutions. This chapter turned specifically to the second aim of this study and outlines components of Australia's emergency management arrangements.

Specifically, the review identified the Constitution drives the arrangements for emergency management in Australia with an emphasis for delivery of emergency management devolved to each state and territory and its local governments. Central to emergency management is the place of CEM and the disaster management cycle functions of PPRR. A description of each function highlights the actions and measures expected to be taken by political institutions. These measures provide a modelling of what the community needs to consider and look at translating to their personal circumstances to manage the risks of a disaster and reduce those risks. It was established the response phase, the focus of this study, is characterised as a short-lived

timeframe, task-oriented, and involves decision making across three temporal periods of a disaster and mobilising of resources. The response phase is premised on the community, including a SBO, carrying out mitigation and emergency plans before any disaster occurs to facilitate a response and recovery.

Coincidentally the disaster management cycle is both a theoretical model for academics and a practical management tool to manage each function of a disaster by political institutions. The overarching policy environment of the NSDR is underpinned by the PPRR and has an emphasis on resilience. Resilience is framed around attributes of community members, including businesses, of self-help functioning under stress, and relying on social resources to respond to a disaster.

It was established in the official literature governments provide specific relief and assistance for eligible small businesses in the event of a rapid onset natural disaster. Knowledge of these specific affordances has been instrumental in directing the study to investigate small business and their owners, and fast onset natural hazard events. Moving from this Australian contextual information, Chapter 3 turns to consider the literature related to business, the response phase, and natural disasters.

# Chapter 3: Business responses to natural disasters

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The preceding chapter introduced the Australian emergency management system, policy environment and the disaster management cycle with emphasis in this study on the response phase. This chapter turns to reviewing the business and disasters literature situated in the response phase of the disaster cycle. It begins by highlighting the historical context of the research field. An overview of the characteristics of small business and their owners is provided then a discussion of the current studies situated in business and disasters during the response phase. The relevant business capitals research is considered before the chapter concludes with the research questions and the chapter summary.

## 3.1 BACKGROUND TO BUSINESS AND DISASTERS RESEARCH

This study is situated within the research fields of small business and business and disaster management where the emphasis is on natural hazard disasters. While the broad field of disaster management is concerned with accidents, crises, emergencies, disasters, catastrophes, and calamities (McEntire, 2004, p. 3), generally the combined focus of business and natural disasters has received limited attention (Asgary et al., 2012; Morrish & Jones, 2020; Tierney, 2007; Webb et al., 2000). The concentration has been on government agencies associated with essential services like fire and police, and local emergency organisations (Asgary et al., 2012; Tierney, 2007; Webb et al., 2000) or linked to specific sectors like transport industries dealing with hazardous materials (Webb et al., 2000). Otherwise, the research emphasis investigated individuals, households, and communities (Asgary et al., 2012; Morrish & Jones, 2020) or applied aggregated data at the urban and regional levels using economic modelling (Chang & Rose, 2012; Corey & Deitch, 2011).

Embryonic research into disasters and business can be traced to the United States natural disasters from 1989 until the mid-1990s (Wasileski et al., 2011). Initial research was funded and affiliated with the United States Disaster Research Center (DRC) (Rodriguez, Quarantelli, & Dynes, 2007, p. xiii), evolving from pioneering research linked to the American military (Quarantelli, 1987). The DRC conducted five

systematic, cross sectional mail surveys between 1993 and 1998 involving 5000 private sector organisations (Webb et al., 2000) from five communities exposed to four of the severest and costliest disasters in the nation's history (at that time). Notably, the 1989 Loma Prieta earthquake, Hurricane Andrew 1992, 1993 Midwest floods, and the 1994 Northridge earthquake.

This historic, seminal research, and the published studies drawing on this dataset (indicative examples: Han & Nigg, 2011; Wasileski et al., 2011; Webb et al., 2000; Webb, Tierney, & Dahlhamer, 2002) and similar research by Alesch et al. (2001) and Chang and Falit-Baiamonte (2002) have contributed baseline data on business as the unit of analysis, in the disaster's context. The studies detail the variables and factors that influence prevention, preparation and recovery phases of the disaster cycle (Landahl & Neaves, 2017).

Subsequent inquiries were influenced by *Hurricane Katrina* (2005) (United States of America) (indicative examples: Basker & Miranda, 2014; Corey & Deitch, 2011; Deitch & Corey, 2011; Haynes et al., 2018; Haynes, Danes, & Stafford, 2011; Haynes, Lee, Marshall, Niehm, & Musser, 2019; Josephson & Marshall, 2016; Josephson et al., 2017; Lam, Arenas, Pace, LeSage, & Campanella, 2012; Lam, Pace, Campanella, LeSage, & Arenas, 2009) and to a lesser extent Hurricane Rita (2005) (Mayer, Moss & Dale; 2008) and Hurricane Irma (2017) (Tyler & Sadiq; 2019) and the *New Zealand earthquakes* between 2010 and 2011 (indicative examples: (Brown, Stevenson, Giovinazzi, Seville, & Vargo, 2015; Kachali et al., 2015; Stevenson, Seville, Kachali, Vargo, & Whitman, 2011; Stevenson et al., 2012; Whitman et al., 2014). Consequently, the basis of extant knowledge of business and disaster research has mainly been shaped by a narrow group of nations stressing specific hazard types (earthquakes, hurricanes, flooding) associated with catastrophic events that occurred at three periods in history: 1990s, 2005 and 2010-2011<sup>5</sup>.

With respect to scholarly investigations arising from the business and disaster research, the functions of prevention, preparedness, response and recovery have structured the way research has been organised and published since the adoption of the CEM (Landahl & Neaves, 2017). Research has focused on *organisations' adoption of prevention and preparedness measures* (indicative studies: Howe, 2011; Josephson et

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<sup>5</sup> Refer section 1.6 as to the scope of this study.



al., 2017; Mayer, Moss, & Dale, 2008; Sadiq, 2011; Whitman et al., 2013; Xiao & Peacock, 2014; Yoshida & Deyle, 2005); *the place of community level mitigation activities to support business continuity* (Tyler & Sadiq, 2019) and *employee perceptions of business disaster preparedness* (Tyler, Sadiq, & Chikoto-Schultz, 2020); *post disaster recovery factors both short term (between six and 12 months) and longer term (measured in years)* (Alesch et al., 2001; Corey & Deitch, 2011; Dietch & Corey, 2011; Lam, Arenas et al., 2012; Lam, Pace et al., 2009; Powell, 2010; Stevenson et al., 2011; Stevenson et al., 2012; Wasileski et al., 2011; Webb et al., 2002); *the impact of disasters on business sectors* (Chang & Falit-Baiamonte, 2002; Kachali et al., 2015; Marshall, Niehm, Sydnor, & Schrank, 2015; Runyan, 2006); *business losses linked to earthquakes* (Chang & Falit-Baiamonte, 2002); *business demise factors* (Marshall, Niehm, Sydnor, & Schrank, 2015; Schrank, Marshall, Hall-Phillips, Wiatt, & Jones, 2013); *the effect of disaster loans on (family) business* (Haynes et al., 2018; Haynes et al., 2011; Hiramatsu & Marshall, 2018); *the influence of spatial links of neighbouring businesses on business returns, reopening and recovery* (LeSage, Pace, Campanella, Lam, & Liu, 2011; Xiao & van Zandt, 2012); and *the impact of cash flow constraints on business recovery* (McDonald et al., 2014; Runyan, 2006).

Noteworthy, research on the response phase of the disaster cycle, and the SBOs' decision processes have attracted far less attention. The vacuum in research examining the response phase, the for profit sector and natural disasters was pointed out in 2001 by Tierney et al., (2001). The scholars indicated then studies on business responses to a disaster were virtually non-existent (Tierney et al., 2001, p. 131). Similarly, in 2017, Landahl and Neaves (2017) shared the same perspective declaring "business as a unit of analysis in response is almost completely devoid of empirical study" (Landahl & Neaves, 2017, p. 117). The research on the response phase of a natural disaster associated with SBOs indicate prior assessments remain valid and studies are thin.

Turning to the literature on business and disasters in the response phase, the next section canvasses the attributes of small business and their owners. These characteristics then are set against the studies related to business and disasters situated in the response phase.

### 3.1.1 Characteristics of small businesses and their owners

The literature on small business highlights they are far from a scaled down version of a large corporation (Storey, 2016b) with ‘slack resources’ (Bradley, Wiklund, & Shepherd, 2011; Welsh & White, 1981) but rather that small businesses are differentially resourced. Generally, the business is held by one or two individuals, being independently owned and operated, with their close control over the operations and management functions (Storey, 2016a). Business owners contribute most of the operating capital of the business and have responsibility for all the decisions (Gilfillan, 2015). They tend to employ few if any staff, reflective of the notion of ‘small’. The absence of workers means fewer human resources to prepare for and respond to non-routine events like natural disasters (Smallbone et al., 2012). Lastly, they usually have a limited market share, but the share may represent a large component of a niche market (Storey, 2016a, p. 7).

With few human resources, SBOs are found to enact wide ranging managerial responsibilities across the business functions. These spread across organising, planning, decision making, troubleshooting, formal and informal communications, monitoring and stabilising (Jennings & Beaver, 1997; Mintzberg, 1990). Mazzarol and Reboud (2020) itemise key functions for business owners across financial management, marketing and sales, production and operations (procurement, scheduling, purchasing and quality controls), human resources (workforce and delegation) and physical resources and systems management (technology, information systems, equipment). They suggest these same areas are where business owners face knowledge and business competency shortcomings (Loucks et al., 2010; Mazzarol & Reboud, 2020). Other areas include legal and compliance (taxes, administration, workers compensation), government regulations and customer liaison (Mazzarol & Reboud, 2020; Schaper, Volery, Weber, & Lewis, 2011).

Despite suggested shortfalls in skill and knowledge constraints, owner-managers enact the array of functions and tasks in their business (Buttner, 1992; Cardon, Foo, Shepherd, & Wiklund, 2012) working across customers, financial institutions, governments, regulators, suppliers and other stakeholders (Howe, 2011; Jennings & Beaver, 1997; Mazzarol & Reboud, 2020).

They understand being self-employed involves risk taking (Vossen, 1998) with business owners bearing responsibility and the costs for any mistakes or errors they make running their enterprise (Buttner, 1992; Jennings & Beaver, 1997; Walker &

Brown, 2004). Poor decisions can result in loss of assets including personal savings, equipment, inventory and stocks invested in the business (Buttner, 1992; Vossen, 1998). Hence business owners understand that ownership demands coping skills to deal with daily activities of the business (Uy, Foo, & Song, 2013).

Although small business lacks a workforce the benefits they accrue relate to informal personalised relationships with external stakeholders and having internal organic arrangements (Jennings & Beaver, 1997; Loucks et al., 2010; Mazzarol & Reboud, 2020). Without complex internal structures or a line-up of specialists to operate and manage the business like larger corporations (Vossen, 1998) a small business benefits from its agility to respond quickly and creatively in times of uncertainty and changing circumstances (Loucks et al., 2010; Vossen, 1998). Business owners can adapt their routines and innovate arising from tacit knowledge (Jennings & Beaver, 1997; Vossen, 1998).

Where a small business employs staff the relationships between the owner-manager and their employees are said to be personalised (Mazzarol & Reboud, 2020; Storey, 2016b) with internal communication chains direct, informal and immediate (Loucks et al., 2010; Vossen, 1998). Thus, small businesses have few filtering processes when making decisions. This aids their responsiveness by being able to make internal adjustments quickly to disruptive events like natural disasters (Sullivan-Taylor & Branicki, 2011; Vossen, 1998).

Business growth and financial performance are constraints in small business due to their size limitations (Astebro & Bernhardt, 2003, p. 309; Bruderl, Preisendorfer, & Ziegler, 1992; Cooper, Gimeno-Gascon, & Woo, 1994; Loucks et al., 2010; Mazzarol & Reboud, 2020). Size can affect revenue generation in the firm, the size of business budgets (Loucks et al., 2010), the scale and scope of the business and business owners' investment in research and development (Vossen, 1998). Despite the perceived limits on a small business, owners understand they have responsibilities to make a certain minimum level of income to support their livelihood and employment (Greenbank, 2001), and to meet obligations to stakeholders including families, employees, financial institutions, customers, suppliers and governments (Greenbank, 2001; Jennings & Beaver, 1997).

Although small businesses exhibit heterogeneity across and within industry sectors (ASBFEO, 2019) and carry out diverse activities (Nicholls & Orsmond, 2015), they generally rely on a local market (Battisti & Deakins, 2017; Smallbone et al., 2012)

and operate from a single location (Battisti & Deakins, 2017; Storey, 2016a). They offer select product lines (Storey, 2016b), tending towards a narrow customer and supplier base (Battisti & Deakins, 2017; Storey, 2016b), and are said to be price takers rather than price makers (Greene & Storey, 2010) although they can dominate in niche markets (Mazzarol, 2005; Storey, 2016b; Vossen, 1998). Business owners enter business for diverse reasons, some motivated by financial and growth objectives as well as for lifestyle reasons related to independence, autonomy, job satisfaction and family (Greenbank, 2001; Storey, 2016b; Walker & Brown, 2004). Headd (2003) contends business owners who enter business for personal reasons stay in business for the lifestyle and will 'do what it takes' to ensure their business remains trading. The motivations of business owners are therefore considered to be a factor affecting business performance as the owners exhibit greater internal consistency in their actions (Storey, 2016b).

### **3.1.2 Small business responses to a natural disaster**

There is a lack of universal agreement for what constitutes a definition of a small business (Curran & Blackburn, 2001; Productivity Commission, 2013; Storey, 2016a). Similar observations can be found in a review of the literature into business and disasters. Table 3.1 summarises the competing definitions of a small business underpinning the business, response phase and disaster research. It shows two approaches to defining a small business. The first uses a qualitative definition. Here the emphasis is on attributes of business ownership of the operations; being 'independently owned' and 'operated' or 'managed' and having a limited market share (Cater & Chadwick, 2008; Cioccio & Michael, 2007; Morrish & Jones, 2020; Runyan, 2006). Being independent, owner-operated, with a relatively limited market share lacks detail with respect to several thresholds. First, these subjective definitions disguise the range of business types found to operate under the different types of legal structures like a family business (Cater & Chadwick, 2008), not-for-profit entities or the larger private sector corporations. Second, the definitions provide little insight into managerial control of the operations and decision making responsibilities, owners investment in the operating capital, high-low capital intensive operations of the business (Storey, 2016a, 2016b) or an indication of business turnover. Such factors can influence the spread of risks in a business, the financial resources of a business,

the division of labour alongside the delegation of responsibilities, managerial coordination and decision making (Mazzarol & Reboud, 2020; Vossen, 1998).

**Table 3.1**

*Response phase studies incorporating contextual data, business definitions, sample population and industry sector*

<b>AUTHORS - CONTEXT</b>	<b>DEFINITION QUALITATIVE</b>	<b>DEFINITION QUANTITATIVE</b>	<b>PARTICIPANTS</b>	<b>INDUSTRY SECTOR</b>
Drabek (1995) United States-Urban		Any sized business 1-15, 16-99 and $\geq 100$ employees	$n=185$ tourism executives	Tourist lodgings, restaurants, gift shops, travel, entertainment and the arts, retail
Irvine & Anderson (2004) United Kingdom - Rural		Number of fulltime employees Grampian Micro $\leq 6$ Larger $\geq 5$ Cumbria Micro $\leq 5$ Larger $\geq 4$	Tourism businesses $n=180$ Grampian $n=170$ Cumbria	Random selection of non-specific tourism related small businesses
Runyan (2006) United States Five communities Urban-rural	A small business is defined by the Small Business Administration (SBA) as one that is independently owned and operated but is not dominant in its field of operation	$\leq 100$ employees	Small businesses and business support agents	All types of small businesses
Zolin & Kropp (2006) United States-Urban		Small $n=80$ Public sector $n=1,200$ Private sector $n=1,500$	Organisational representatives	Software Engineering City University Public IT service provider
Cioccio & Michael (2007) Australia-Rural	A small business is considered as an independent, local operator in the private sector, using owner-supplied capital with a small share of the broader market		$n=11$ owner-operators or managers individual tourism, businesses	Tourism businesses Accommodation houses, retail stores, wineries, restaurants, adventure tour guides and outdoor recreation
Cater & Chadwick (2008) United States-Urban	A small business is independently owned and operated, small in relation to the size of its market and not part of a larger organisation		$n=2$ senior managers	Retail services – grocery-supermarkets and restaurant
Doern (2016) United Kingdom-Urban		$\leq 50$ employees Most micro businesses with $\leq 10$ employees	$n=15$ owner-managers retail shops	Retail sector, clothing, food and beverage, recreational goods and items for home
Morrish & Jones (2020) New Zealand-Urban	Founders or co-founders that independently owned and managed their business		$n=12$ small business owners-operators	Tourism – specifically hospitality, cafes, restaurants, and pubs

Sources: Collated empirical studies situated in response phase - citations provided

The second approach applies quantitative measures to distinguish a small business. These studies have used an objective indicator of employee numbers to define a business as small. Like the qualitative definitions the definition of a ‘small business’ applying workforce numbers introduces inconsistency across studies. The study conducted by Drabek (1995) uses ordinal categories of 1-15, 16-99 and  $\geq 100$  employees; Zolin and Kropp (2006) identifies a small business as  $\leq 80$  employees; Irvine and Anderson (2004) use two variables of micro business of  $\leq 5$  and  $\leq 6$  in the same study for comparative purposes while Doern (2016) combines a small and medium sized (SME) business definition. Runyan (2006) is the only study to connect a quantitative measure of ‘fewer than 100 employees’ with a qualitative definition to form an overall single definition. Except for Irvine and Anderson (2004) the studies conducted on small business and disasters appear to focus on businesses that are well resourced with a workforce consistent with medium to larger corporations, thus the greater likelihood of internal structures, specialisation in roles and distributed decision making rather than owner-manager control over all managerial aspects of the business including decision making.

The wide-ranging employment numbers for a small business are reflective of the countries in which the research was conducted, that is the United States (Cater & Chadwick, 2008; Runyan, 2006; Zolin & Kropp, 2006) and United Kingdom-Scotland (Doern, 2016; Irvine & Anderson, 2004). In the United States a ‘small business is considered one that is independent with fewer than 500 employees with the employee size thresholds differentiated according to the industry sector (Landahl & Neaves, 2017)<sup>6</sup>. A further complicating factor in the United States is across the tiers of government, federal, state and local there is a lack of consistent definition for a ‘small business’. Rather, jurisdictions develop definitions according to policy and program requirements or they may design a definition to attract benefits for a targeted business category, for example, exemptions for taxes or counselling supports (Anastasia, 2015; Congressional Research Service, 2019; Landahl & Neaves, 2017). Whereas the European Union regard businesses with fewer than 10 employees as micro-business while small firms are those with between 10 and 49 employees (Curran & Blackburn,

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<sup>6</sup> As an example, for the industry sector of manufacturing, the employee size threshold is  $\leq 500$  employees (up to 1,500) dependent on the product manufactured while the wholesale sector, the employee size threshold is  $\leq 100$  employees (up to 500) also dependent on the product (Productivity Commission, 2013, p. 268)

2001). Hence, this indicates that the accounting for jurisdictional differences is essential when reviewing the studies into business and natural disasters.

The arbitrariness of the qualitative and quantitative definitions presented in Table 3.1 is problematic for research purposes, and as illustrated by the extant small business research the definitions complicate the distinctiveness of a small business compared with their larger counterparts (Bradley et al., 2011; Storey, 2016a; Vossen, 1998). Consequently, one of the challenges in the business and disaster research is finding analogous studies. Without a standard definition for a ‘small’ business in the response phase a dilemma arises for researchers with respect to the generalisability of research findings temporally, and for comparative purposes across jurisdictions (Storey, 2016b; Tierney, 2007).

Two additional observations arise from reviewing the definitions across the eight studies. First, the studies provide no explanation or rationale for why researchers use either a quantitative or qualitative definition for inclusion in their study, and second, across the list of studies there is no research that exclusively focuses on a small business with ‘fewer than 20 employees’. This observation furthermore reinforces the value of exploring the very small-sized businesses.

### 3.1.3 Methodological issues

Table 3.1 detailed several important methodological features of the research during the response phase. These relate to contextual elements, industry sectors and the sample population. Each is discussed briefly next.

#### *Contextual elements*

Most of the research is dominated by investigations carried out in the United States ( $n=4$  studies) (Cater & Chadwick, 2008; Drabek, 1995; Runyan, 2006; Zolin & Kropp, 2006) with single studies in three nations: Australia, New Zealand, and United Kingdom. Drabek (1995) conducted the first study in the response phase on six American communities affected by hurricanes and flooding examining a single issue of disaster evacuations directed at the tourism industry. The other three studies related to Hurricane Katrina (2005) (Cater & Chadwick, 2008; Runyan, 2006; Zolin & Kropp, 2006) which has been described as cataclysmic (Zolin & Kropp, 2006) and recorded as the costliest hurricane in United States history at the time. The single Australian study by Cioccio and Michael (2007) examined bushfires in rural Northeast Victoria considered as ‘unprecedented in scale’ destroying 1.1 million hectares of land and



impacting 1,100 tourism businesses (Cioccio & Michael, 2007, p. 2). Morrish and Jones (2020) investigated business owners' responses to New Zealand earthquakes of 2010-2011, specifically Christchurch central business district which experienced recurrent seismic activity (Brown et al., 2015).

Studies by Doern (2016) and Irvine and Anderson (2004) relate to human-induced disasters. These studies afford opportunities to compare the impacts experienced by small business and their owners affected by human and biological hazards with natural hazards.

The majority of studies are situated in urban environments, with two set in rural and remote areas (compare e.g. Irvine & Anderson, 2004; with urban based Zolin & Kropp, 2006). Such information is particularly pertinent as businesses are reliant on their geographic location and customer base to support their livelihood (Alesch et al., 2001; Cioccio & Michael, 2007; Storey, 2016a; Wasileski et al., 2011). Location affects a business's competitors (Storey, 2016b), influences the available community resources, the degree of interdependency between infrastructure, public utilities and the community (Bosomworth et al., 2017; Lindell, 2013; Zhang et al., 2009), access to suppliers (Howe, 2011; Zhang et al., 2009) and emergency management responses (Bosomworth et al., 2017).

### ***Industry sectors***

With regards to industry sectors half of the studies involve tourism industries, skewing the research findings ( $n=4$  studies) (Cioccio & Michael, 2007; Drabek, 1995; Irvine & Anderson, 2004; Morrish & Jones, 2020) towards a sector known for its vulnerability to risks, especially macroeconomic events like disasters (Ritchie & Jiang, 2019). Despite the concentration on tourism-oriented industries these businesses can serve dual markets by diversifying their market opportunities. Morrish and Jones' (2020) examination of the hospitality sector impacted by Christchurch earthquakes revealed the downturn in overseas tourism and reduced foreign revenues and resulted in business owners switching to new demands of construction workers, aid workers and volunteers converging on the central business districts as the rebuild began (Morrish & Jones, 2020). Apart from the tourism businesses, general retail, groceries and food businesses (Cater & Chadwick, 2008; Doern, 2016; Runyan, 2006), professional services (Information Technology) and an education sector make-up the outstanding industries (Zolin & Kropp, 2006). Zolin and Kropp (2006) study combines three

different industry sectors, a small private sector software company with a public sector information technology provider and a university. A main finding by Zolin and Kropp (2006) study was the responses by these businesses was suggested to be akin to the early start-up phase of new business entrants. Such a finding was dubious as businesses interviewed have divergent organisational missions, are resourced (human capital, physical capital and financial capital) with an established internal network of relationships to support relocation of the businesses or expediently re-design and/or re-establish their respective operations. Thus, the industry sector complicates the comparability of findings especially given the heterogeneity of businesses and the varying capitalisation and technology each possesses. Having fixed (accommodation) or mobile (aircraft for tour flights) assets requires different response planning strategies and are differentially vulnerable to a natural disaster (Cater & Chadwick, 2008; Cioccio & Michael, 2007; Zolin & Kropp, 2006).

### ***Population samples and methods***

The sample business population recruited for data collection varies considerably. As shown in Table 3.1, study participants represent a range of organisational responsibilities. Recruits have included senior managers or business representatives (Cater & Chadwick, 2008; Drabek, 1995; Zolin & Kropp, 2006); owner-managers (Cioccio & Michael, 2007; Doern, 2016; Morrish & Jones, 2020) or a combination of owner-operators and managers with business support agents (Runyan, 2006).

The methods used to elicit data in most studies are based on interviews. Runyan (2006) examines participants' interview data against the crisis constructs of low probability, high consequence, ambiguity and decision making time pressure (Pearson & Clair, 1998) aggregating perspectives that offer general findings across the four crisis conditions. Drabek (1995) interviews 185 tourism executive managers from any sized business and, like Runyan (2006), aggregates the results. Likewise, Zolin and Kropp (2006) blend the interview responses of representatives from a university and public sector organisation with those managers from a "small business of under 80 employees" to develop a disaster response timetable and a conceptual entrepreneurial model of organisational survival. Cater and Chadwick (2008), on the other hand, present the results of interviews with two senior managers representing their chain organisations. Data were inductively coded to develop a model of 'enablers' and 'inhibitors' when responding to a natural disaster. Doern (2016) interviews business

owners across crisis response questions; the Cioccio and Michael (2007) narrative inquiry addresses business owners' hazard management planning in the tourism sector while Morrish and Jones (2020) designed a conceptual model of entrepreneurial marketing drawing on owners' response strategies after the New Zealand earthquakes.

Insights gathered from sample participants reflect a mix of perspectives that are comparing salaried employees' views acting on behalf of and in the interests of their employers (Cater & Chadwick, 2008; Drabek, 1995; Zolin & Kropp, 2006) with self-employed business owner-operators (Cioccio & Michael, 2007; Doern, 2016; Morrish & Jones, 2020). What is unclear is the degree of control waged officers have to make decisions or how much reliance is placed on the directives communicated from the owners or head offices (Cater & Chadwick, 2008; Drabek, 1995; Zolin & Kropp, 2006). An important difference for business owners is they can make decisions immediately at the coalface, adjust them and respond quickly to changing events (Cioccio & Michael, 2007; Morrish & Jones, 2020; Vossen, 1998) while salaried officers rely on the authority and directives of their management.

Such a blend of participants can muddle the issues and concerns facing different classes of business decision makers. To address the gap in research this study exclusively recruits SBOs who work solely in their business with direct responsibility for all aspects of business operations, managerial responsibilities and decision making.

### **3.2 BUSINESS OWNERS' RESPONSES TO NATURAL DISASTERS**

The literature on business owners' response to disasters in the disasters and business literature is reviewed next. Chapter 2 introduced the four phases of the disaster management cycle highlighting that the focus was on the response phase. During a response, governments expect the community and businesses to understand their risks, implement pre-disaster preventative and preparatory measures in order to reduce the impact of a disaster, and be self-reliant and self-organising.

The following section is organised around themes arising from the literature review. The themes coincidentally tend to follow the PPRR structure. It begins by consideration of insurance as a preventative measure, disaster planning by business', risk communications related to warnings, the human agency of the business owner, decision making in a disaster and, last, affordances available to business. Following

the literature findings, the business capitals are discussed before the research questions are presented.

### 3.2.1 Prevention measures - Insurance

Insurance has been regarded as an important preventative strategy to support business recovery after a disaster (COAG, 2011), and is a source of risk transfer (Josephson et al., 2017). Insurance overcomes financial constraints when losses are experienced across any type of hazardous disaster (Cioccio & Michael, 2007; Doern, 2016; Josephson et al., 2017; Morrish & Jones, 2020). Certain business types are mandated to carry insurance (Cioccio & Michael, 2007; Drabek, 1995) while some businesses regard insurance as the best available management response to deal with a random event (Cioccio & Michael, 2007).

Since the global financial crisis, it was noted insurance premiums have escalated in cost, especially in the tourism sector. Consequently, business owners reported limited faith in purchasing policies (Cioccio & Michael, 2007). One implication to the rising costs of insurance has been the drive to innovate internally by introducing creative solutions: equipment upgrades and hazard-proofing buildings. These actions can be a substitute for insurance protection over the business (Cioccio & Michael, 2007). Other measures were the personal involvement of business owners in self-financing and completing their own building repairs to support recovery (Morrish & Jones, 2020; Runyan, 2006; Xiao et al., 2018). Small business owners self-financing a recovery is consistent with historic studies investigating businesses' protective actions and recovery strategies (Chang & Falit-Baiamonte, 2002; Webb et al., 2000). Notably the discussion of insurance was raised by those "smaller sized businesses." That is, those that appear to be less resourced with a workforce (Cioccio & Michael, 2007; Doern, 2016; Morrish & Jones, 2020) compared with larger enterprises (Cater & Chadwick, 2008; Drabek, 1995; Zolin & Kropp, 2006).

What the previous insights mean for this study is that the place of insurance as a mitigation measure for SBOs with fewer than 20 workers may be problematic for them to purchase. Therefore, SBOs are likely to lack a risk transfer option to defray disaster-induced costs (Josephson et al., 2017), the implication being that financial capital of the business owner and their own agency along with any workforce will be invested in and redirected toward clean-up of the worksite, repairs to the building and replacement of stock. Such activities are costly in time and

resources and prevent an owner from resuming trade and restoring a cash flow to support business survival.

### 3.2.2 Preparedness measures - disaster response plans

Public authorities have the expectation the community, including business, will be in a state of readiness to activate their disaster response plans when a hazard event is imminent. The review finds a consistent picture of poor disaster response planning by all-sized businesses across rural and urban settings. It appears if a plan does exist at all, organisations are unlikely to implement it (Zolin & Kropp, 2006), do not review or update the contents (Drabek, 1995) or the plan has a low level of precautionary measures suited to last minute execution such as boarding windows, closing shutters, elevating computers and early business closure (Runyan, 2006).

Inducements for business to engage in disaster planning relates to four factors:

1. being part of a national organisation or affiliate company with policies expecting subsidiary businesses to develop local emergency plans (Drabek, 1995);
2. some form of coercive influence vis-a-vis regulatory compliance obligations related to the industry sector or conditions set out in contractual arrangements (Cioccio & Michael, 2007; Drabek, 1995);
3. having more than 10 employees increased the likelihood of having an emergency response plan (Cioccio & Michael, 2007); and
4. engaging with local government emergency management personnel (Drabek, 1995).

As to why businesses are reluctant to undertake disaster planning the research suggests planning measures have to be cost-effective (Cioccio & Michael, 2007). Disaster planning is seen as the ideal but practically there is a reluctance to expend resources into such activities (Cioccio & Michael, 2007).

Experiencing a disaster can be an incentive to plan for unpredictable events (Cioccio & Michael, 2007; Doern, 2016). However, even having the experience of a disaster the likelihood of business owners following through on disaster plans is low. Researchers find disasters absorb business owners' energy (Doern, 2016) when they are pre-occupied with managing everyday operational matters (Cioccio & Michael, 2007). Such findings have implications for the current study. The evidence indicates

small business with few, if any human capital resources, who are financially constrained, are unlikely to undertake disaster planning unless required to comply with contractual or legal obligations. It is therefore most likely a disruption is absorbed into their usual routines. Interestingly, the literature notes there is far from a dearth of educational materials to help business owners understand what is required to prepare for natural disasters. Rather, literature reinforces public authorities, and professional trade journals and internet sites produce accessible information about what business owners need to know and do with respect to disaster planning (Josephson et al., 2017). Despite the creation of targeted educational material to help business owners there is little indication they resort to this information as a strategy to plan and prepare for adverse events.

### **3.2.3 Response phase-hazard detection and community warnings**

Chapter 2 indicates public authorities have an official role issuing public warnings and for education and dissemination of disaster risk communications to the public. Although warnings form a crucial role to alert the community of an imminent event research about business owners' knowledge of warnings, how business owners source disaster communications and how they respond to such information in this response phase is scant. This was a point Mehta and colleagues (2020) emphasised in their study examining risk communications and warnings targeting the small business sector in Queensland.

Drabek (1995) examined disaster communications uptake by business executives in the tourism sector. In the context of a single hazard risk reduction strategy of evacuation, Drabek (1995) identified executives rely on employees and customers for current disaster information but would search for warning data from official sources where possible. Executives tended to trust warnings issued by local government authorities and mobilise evacuation plans based on perceived reliability and trustworthiness. Notwithstanding, if warning information was made difficult to find, business managers considered it both a hindrance and an annoyance when deciding whether to activate a plan (Drabek, 1995). As Drabek's (1995) study relates to hazard evacuation plans, the knowledge is narrow, historic and examines a single aspect of a high-risk sector.

An Australian-based study by Mehta et al., (2020) reviewed the adequacy of natural hazard warnings sourced by business owner/operators within the risk

communications field. Drawing on interviews with 16 Queensland-based business owner/operators with an average of 60 employees the scholars found business owners/operators felt the official warnings were oriented to households more so than the business community. Hence some businesses viewed the messages from a homeowner perspective rather than as a business owner. The study also identified business owner/operators sought detailed information about protective measures, how to interpret the warning messages and to understand the impact of a disaster on the business.

Apart from these main observations the contemporary experiences of SBOs' use of warnings to mobilise a response remain light. Given the criticality of warnings linked to implementing disaster plans and readiness, further insights about business owners' accessing of publicly available disaster information is necessary. This is especially relevant given the reliance of governments on technologies and media platforms to disseminate warnings and alerts. As Chapter 2 reveals, governments are tasked with education and public awareness campaigns to guide the community on how to prepare and manage disasters. Gaining first accounts from official sources would be beneficial to assist in our understanding of how early warning information is circulated, what specific details are provided to business and how business owners respond to such information.

#### **3.2.4 Mobilising the individual SBOs agency**

Turning to the literature on business owners' human agency when confronted with a disaster the review reports they are pro-active mobilising a response. Business owners are largely self-reliant and self-determining in the face of a disaster (Xiao et al., 2018), being influenced by several underpinning drivers. Apart from lacking staff to help respond to an event, business owners are motivated to protect their business because they have a passion for it (Doern, 2016; Morrish & Jones, 2020) and it reflects the lifestyle they seek (Cioccio & Michael, 2007). Where the owner-manager and the business are closely intertwined some owners suggested the business is equivalent to their home (Doern, 2016, p. 285).

Business owners are also deeply connected with their communities, having a mix of weak and strong ties across financial institutions, suppliers, government bodies, their neighbourhoods, family and friends (Cater & Chadwick, 2008; Cioccio & Michael, 2007; Doern, 2016; Xiao et al., 2018). Consequently, business owners seek

to support and serve their communities when a natural disaster strikes, mobilising swiftly to resume operations (Cater & Chadwick, 2008; Doern, 2016). Ultimately SBOs indicate they have few options other than to respond because “you can’t sit still and think the world owes you a living” (Doern, 2016, p. 285). Financial survival is a priority for business owners being the principal source of livelihood (Cater & Chadwick, 2008; Doern, 2016; Morrish & Jones, 2020; Runyan, 2006). Business owners run their business on the margins and operate day to day (Cater & Chadwick, 2008; Doern, 2016), drawing a steady income (Runyan, 2006).

The literature documents several advantages for quickly resuming trading. These include competitive advantage by capturing trade with increased patronage if supplying high-demand goods and services (Cater & Chadwick, 2008; Morrish & Jones, 2020); getting employees back to work (Cater & Chadwick, 2008; Runyan, 2006); returning the business to its usual routines (Doern, 2016) and providing structure for communities and heightened business reputation (Cater & Chadwick, 2008).

### **3.2.5 Natural disasters impact on business owner’s health**

Some attention was given to the health and wellbeing of SBOs from exposure to disasters. Limited explicit focus on a business owner’s health has been documented in the business and disaster literature. Scholars suggest the psychological wellbeing of business owner/operators can be compromised.

With respect to a response to a disaster the literature finds business owners “operate on adrenaline” to re-open their business (Morrish & Jones, 2020, p. 86). Some can find the disaster response traumatic (Cioccio & Michael, 2007; Doern, 2016; Morrish & Jones, 2020) which can result in serious medical ailments. For example, Doern (2016) identified business owners suffered sleep deprivation and lethargy and felt unsafe and insecure in their business environment (Doern, 2016, p. 284). Morrish and Jones (2020, p. 86) list increased stress, debt levels, building damage and family breakdown as adversely affecting an owner’s health. Xiao et al. (2018) added the time and effort given to the dual responsibilities of resolving household and business damages “pile on” as emotional stressors for business owners.

Despite the physical and mental loads resulting from a natural disaster the literature reveals meagre research has been undertaken on SBO health and wellbeing.



Tyler and Sadiq (2019) is one study that observed in Hurricane Irma (2017) that stress and emotional reactions had an impact on business continuity and disaster recovery. The neglect of mental, emotional and physical health of SBOs could be attributed to the realities of being in business and that the business owner may acknowledge they have little choice other than to manage the situation (Cioccio & Michael, 2007; Doern, 2016) and forge ahead because the realities of the micro and macro environment (Cioccio & Michael, 2007; Doern, 2016; Morrish & Jones, 2020; Runyan, 2006) are such that they need to make a living. Otherwise, the business will face debt, potential business failure and then an exit from the marketplace.

Deeper knowledge is needed about the extent to which business owners' mental and psychological wellbeing is impacted by their response to a natural disaster. This information could determine the type of supports required for business owners to respond to a disaster. Conversely, the details could provide the basis for evaluation of current strategies and their effectiveness for this population group.

### **3.2.6 Characterising the business owner's decision making**

The response phase is characterised by actions and decisions made by the business owner. The review identifies within the response phase that cursory attention is paid to understanding the decision processes used by business owners. Drabek (1995) described decision making under pressure by tourism executives as *incrementalism*: a process involving a continuous flow of decisions made in an ad hoc manner whereby as one decision is made and executed it may be altered as new information is received. The implication of short-term decision making is the lack of foresight into the unintended consequences on business operations (Drabek, 1995).

Some studies suggest SBOs display versatile qualities when responding to a disaster event. Business owners have been characterised as fast decision makers (Cater & Chadwick, 2008; Morrish & Jones, 2020; Zolin & Kropp, 2006) who are decisive in the face of an emergency situation (Morrish & Jones, 2020). Being on site of impact is an 'enhancer' to responding to a disaster because the business owner witnesses firsthand the problems, assesses the situation and acts (Cater & Chadwick, 2008; Doern, 2016). Other studies suggest business owners have specific cognitive attributes. Morrish and Jones' (2020) design of a conceptual entrepreneurial marketing model claim business owners enact an entrepreneurial mindset displaying behaviours and decisions reflective of risk-taking, opportunity seeking, resource organising and

customer attraction as they navigate the post disaster business environment (Morrish & Jones, 2020, p. 88).

Doern (2016) conversely claims business owners have either a ‘containment’ or ‘anticipatory mindset’ as opposed to an entrepreneurial one. Containment mindset is linked to building a ‘conceptual slack’ through flexibility and improvisation to situations, while an anticipatory mindset emphasises problem recognition and contingency planning (p. 294). Mindset, contends Doern (2016), is a source of resilience (Doern, 2016, p. 294). Based on crisis literature Runyan (2006) suggests whereas SBOs are familiar with making routine decisions outside a disaster situation, decision making in a natural disaster context gets complicated. Disasters create layers of uncertainty arising from government bureaucracy, local councils’ rules and regulations, ambiguous financial and economic business circumstances, and there are time pressures to make decisions without all the salient information (Runyan, 2006).

Missing from the business and natural disaster literature is a theoretical framework that can capture real-time decision-making processes of business owners during a natural disaster. That is, a model of “decision making in the wild” (McAndrew & Gore, 2013) where decisions are made under time pressure, dynamic conditions, and with incomplete information that can have significant consequences for the business owners and their business (Orasanu & Connolly, 1993).

A relevant theoretical framework that could account for these contextual factors is recognition prime decision (RPD) model (Klein, 1998; Klein, Calderwood, & Clinton-Cirocco, 1988, 2010; Klein & Crandall, 1996). The RPD model emerged from the naturalistic decision making (NDM) paradigm with its emphasis on decision making that takes place in real time in a natural setting (Klein et al., 2010; Lipshitz et al., 2001). The RPD is a cognitive based, fast decision making model that has been tested in the emergency response environments like firefighting, ambulance operations and outdoor recreational activities (Blandford & Wong, 2004; Boyes & O’Hare, 2003; Boyes & Potter, 2015; Klein et al., 2010; B. L. Wong & Blandford, 2004).

The use of RPD theory to describe SBO’s decision processes during the response phase of a natural disaster has yet to be achieved in the disaster and business literature. Likewise, a natural disaster context drawing on a SBO as the decision maker has yet to be undertaken in NDM applying the RPD model. Combining the cross disciplinary fields will contribute either confirmatory or new empirical data and knowledge to business, disaster management and naturalistic decision making.

### 3.2.7 Decisions during the response phase

Table 3.2 summarises an indicative selection of the decision areas and issues facing business owners, managers and operators responding to a disaster. Keeping in mind the studies were conducted across all business sizes, four international contexts, different hazard types (bushfire, earthquakes, hurricanes and flood inundation) and select industry sectors, there is a degree of convergence with the issues and decision areas faced by businesses.

**Table 3.2** Indicative issues faced by business owners and organisations

Decision issues	Business type	Context	Citation/s
Evacuation staff customers	Tourism	USA	Drabek (1995)
Evacuation of equipment	Public-private small	USA	Zolin & Knopp (2006)
	Tourism/hospitality	NZ	Morrish & Jones (2020)
	General businesses	USA	Runyan (2006)
Employee entitlements	Tourism	USA	Drabek (1995)
Employee welfare/care	Public/private/ small	USA	Zolin & Knopp (2006)
	Restaurant-grocery	USA	Cater & Chadwick (2008)
Staff, retention and supply	Tourism	UK	Irvine & Anderson (2004)
	Tourism-hospitality	NZ	Morrish & Jones (2016)
Locating staff, communicating with them	Public/private/small	USA	Zolin and Kropp (2006)
	Restaurant-grocery	USA	Cater & Chadwick (2008)
Staff losses	General retail/wholesale	USA	Runyan (2006)
	Tourism-hospitality		Morrish & Jones (2016)
Loss of income/ cash flow	General businesses	USA	Runyan (2006)
	Restaurant-grocery	USA	Cater & Chadwick (2008)
	Tourism-hospitality	NZ	Morrish & Jones (2016)
	Tourism	AUS	Cioccio & Michael (2007)
	Public/private/small	USA	Zolin & Kropp (2006)
	General retail	UK	Doern (2016)
	Tourism	UK	Irvine & Anderson (2004)
Security of worksite	General retail/wholesale	USA	Runyan (2006)
Looting and vandalism	Restaurant-grocery	USA	Cater & Chadwick (2008)
	Tourism sector	USA	Drabek (1995)
	General retail	UK	Doern (2016)
Supplier issues	Restaurant-grocery	USA	Cater & Chadwick (2008)
	General retail/wholesale	USA	Runyan (2006)
Re-entry to the worksite	Hospitality	NZ	Morrish & Jones (2016)
	Restaurant-grocery	USA	Cater & Chadwick (2008)
	Tourism	USA	Drabek (1995)
Relocation of business	Information technology	USA	Zolin and Kropp (2006)
	Hospitality	NZ	Morrish & Jones (2016)
Power outages	Restaurant-grocery	USA	Cater & Chadwick (2008)
/product losses	General retail/wholesale	USA	Runyan (2006)

Industry sector has an influence on the type of decisions made. Evacuation of customers and staff was central to tourism executives managing accommodation establishments (Drabek, 1995) while information technology firms were focused on protecting stock and essential equipment to secure business continuity (Zolin & Kropp, 2006). Employing organisations faced several employment relations issues (Cater & Chadwick, 2008; Drabek, 1995; Morrish & Jones, 2020; Zolin & Kropp, 2006); and communicating with staff (Cater & Chadwick, 2008; Zolin & Kropp, 2006). Relocation was necessary for two businesses (Morrish & Jones, 2020; Zolin & Kropp, 2006), however relocation is not always practical when businesses have fixed capital assets (such as accommodation premises compared with aircraft for flight tours) (Cioccio & Michael, 2007; Drabek, 1995) or owners remain committed to preserving their established relationships with neighbours, customers and staff (Doern, 2016; Xiao et al., 2018).

The looting and vandalism of business sites was a concern for large and small enterprises alike (Cater & Chadwick, 2008; Doern, 2016; Drabek, 1995; Runyan, 2006). The damage to worksites from the hazard can be exacerbated by malicious vandalism although Cater and Chadwick (2008) point out reputation and embeddedness in the community can be a protective factor against theft and damage to shops. In the face of riots business owners took action to reduce losses by removing stock and equipment, or hid items from looters, but also stayed nearby their business to share local intelligence with police and other first responders (Doern, 2016).

Disruption to revenue sources was a consistent theme across the studies. Cash flow is vital to business continuity. Business owners have an ongoing flow of financial commitments that endure irrespective of a disaster. Business owners not only have repayments on their mortgage or lease agreements, rates and power bills (Zolin & Kropp, 2006), they often have tight timeframes to pay their creditors and suppliers (Cater & Chadwick, 2008).

Even though resumption of a business is important to a business owner's livelihood, re-opening a business requires a cost-benefit analysis (Cater & Chadwick, 2008; Doern, 2016; Runyan, 2006). Businesses may carry forward pre-existing debts into the disaster. The debt is a crucial concern for business owners, especially if planning to borrow more money to repair damages, replace equipment and to restock the business to re-open. Runyan (2006) points to business owners, especially those

without insurance, risking potential economic ruin if trading revenues fail to cover past and future debts, forcing a business to close. Thus, not only does the indebtedness create hardship for a business owner but can also transfer to their family as bankruptcy or insolvency is carried forward into their future (Runyan, 2006).

Business owners manoeuvre quickly once their revenues decline or cease in a disaster setting (Doern, 2016). Various strategies are adopted to support business survival and continuity. These may take the form of restricted trading hours, ceasing staff employment, cutting back on staff work hours, wages or increasing employee workload, growth plans are reviewed, cutback or cancelled, a consolidation of multiple work sites or their closure or relocation (Doern, 2016, Morrish & Jones, 2020; Zolin & Kropp, 2006). Others report diversification of their product (Irvine & Anderson, 2004), innovation in supply chain (Cater & Chadwick, 2008) or conversion of space into multi-purpose facilities to maximise trading hours and revenues (Morrish & Jones, 2020).

With respect to bushfires and foot and mouth disease, the hazards disrupt business operations immediately directly affecting the livelihood of business owners (Cioccio & Michael, 2007; Irvine & Anderson, 2004). Tourism destinations specifically can be tarnished by media portrayal of images of the disaster or the reporting of the disaster (Cioccio & Michael, 2007; Irvine & Anderson, 2004). Further, the tourism product and destination can be destroyed, with time essential to restore the environment, especially in bushfire-affected communities (see Cioccio & Michael, 2007). For these businesses it was not so much about managing the event but how best to cope with the manifest income loss (Cioccio & Michael, 2007; Irvine & Anderson, 2004). Consequently, scholars suggest many SBOs find themselves impacted twice from losses to both their business and their home (Cioccio & Michael, 2007; Irvine & Anderson, 2004; Runyan, 2006; Xiao et al., 2018), thereby putting additional pressure on business recovery.

### **3.2.8 Community support for business responses to a disaster**

To this point responding to a disaster has emphasised individual business owners' agency, overlooking community support in the form of social resources to help business owners respond to a disaster. Social resources synonyms include social capital and social capacity. The concept of social capital relates to resources available to individuals (or communities) that arise through social networks, relationships,

connections and interactions that can be accessed or mobilised in purposive actions (Lin et al., 2001; Meyer, 2018). Three sources of social capital can be distinguished: *bonding* social capital linked to close-knit ties and relationships reflective of next of kin, close friends, employees and neighbours (homophily) (Meyer, 2018, p. 265); *bridging* social capital includes contacts and connections with people whose ties are weaker and outside one's close networks such as professional organisations, industry sector bodies, other businesses and charitable organisations (heterophily) (Meyer, 2018, p. 264); while *linking* social capital describes networks and connections with people associated with power and political authorities including politicians, government authorities and their delegated representatives, professional groups, private sector corporations and not-for-profit groups (Woolcock & Narayan, 2000).

Several business-related studies in the response phase of a disaster indicate that resuming business operations relies on social resources to accomplish such a goal. In the context of Hurricane Katrina senior managers of chain stores reported their employees at hurricane-affected workplaces self-organised and initiated clearing and cleaning of the sites to hasten the return to business operations (Cater & Chadwick, 2008). Entrepreneurs, Morrish and Jones (2020) claim entrepreneurs draw on a network of family, friends and other business owners who offer their time and labour helping with remedial and repair work. However, it is questionable that only those business owners defined as “entrepreneurs” benefit from social capital resources. Riot-impacted business owners (Doern, 2016) were receiving support from the public and private businesses. These social resources were responsible for ‘donations’ of building materials, fundraising activities, providing storage space, helping with the clean-up of business sites and the establishment of a financial support scheme (High Street Fund). The High Street Fund offered business owners an alternative to government-approved grants by approving emergency response financial support quickly to enable business owners to repair their damaged premises without delay (Doern, 2016).

### **3.2.9 Involvement of political institutions during disasters**

The findings reported next are linked to the types of relief and assistance businesses receive from different institutional stakeholders. Most notably are government authorities, private sector businesses and not-for-profit entities. Multiple tiers of government have responsibility for relief and assistance to the business sector and the community broadly. Providing financial assistance with specific reference to disaster

aid (USA based) (Haynes et al., 2018; Haynes et al., 2011) is one area of government responsibility, however studies that consolidate the broader array of affordances available to business owners have been absent. The affordances arising from the public authorities are discussed next.

### ***Government instrumentalities helping small businesses***

Knowledge around the help provided by governments and local councils to small business during a natural disaster is mixed, uneven and limited. Communities, including business, expect governments to oversee and monitor infrastructural and energy sources to ensure mitigation and preventative measures are carried out in advance of an emergency event. This is especially relevant in relation to natural disasters as the business sector depends on robust infrastructure and reliable utilities notably electricity, gas, waste management, telephony and communication systems for essential business functions (Tierney, 2007; 2015). Damage or breakdown to infrastructural systems and services and utilities failures are key barriers to business continuity (Cioccio & Michael, 2007; Runyan, 2006; Zolin & Kropp, 2006). Research findings are reinforced elsewhere in the disaster and business literature (e.g., Webb et al., 2000; Brown et al 2015).

With respect to Hurricane Katrina scholars identified the disruptions to electricity rendered businesses inoperable for lengthy periods (Runyan, 2006). Power downtime shuts down telephony, communications and network systems preventing contact with customers, suppliers and employees (Cater & Chadwick, 2008; Runyan, 2006; Zolin & Kropp, 2006). Further, electronic transactions cease, resulting in reduced sales transactions, revenue, and cash flow (Runyan, 2006; Zolin & Kropp, 2006). With infrastructural damage to transport networks including bridges, roads and rail and supply chains customer access to a business is severed and disrupted (Cater & Chadwick, 2008). Several scholars have observed having a disaster plan, whether implicit or explicit, becomes redundant when utilities are lost and infrastructure is impaired or destroyed (Runyan, 2006; Zolin & Kropp, 2006).

Alongside infrastructural disruptions issues associated with political and legislative matters hamper a business from responding to and overcoming the impact of natural disasters. For example, following Hurricane Katrina poor political leadership, government officials failing to return to work or being unclear about what they needed to do, as well as the lack of support to businesses, impeded how businesses

responded to the event (Cater & Chadwick, 2008). Further, government confiscation of business-owned delivery vehicles for official tasks delayed business resumption (Runyan, 2006). Other political actions like cordoning off adversely impacted zones force businesses to close, relocate or delay their reopening. Each option has an effect on the customer base and the generation of revenues for the business (Morrish & Jones, 2020; Zolin & Kropp, 2006). The quarantine of an area prevents early inspection and damage assessment of worksites for insurance claims (Morrish & Jones, 2020), the removal of equipment and assets (Zolin & Kropp, 2006) or carrying out repairs to resume trading quickly (Cater & Chadwick, 2008).

In the aftermath of a disaster government laws affect business owner decisions to trade. After Hurricane Katrina (2005) and the New Zealand earthquakes (2010-2011) local councils introduced changes to building codes and regulations that impacted a business location, building standards, and industry sectors (Morrish & Jones, 2020; Runyan, 2006). New laws, regulations and codes create uncertainty and insecurity for business owners including an obligation to act upon the enacted changes. Business owners who rely on landlords to implement local government regulatory arrangements are hamstrung, especially when landlords are reluctant to comply or to act in accordance with the regulatory requirements. Inaction or long delays in landlord decision making to repair buildings have a direct influence on a business owner's decision to restore and re-open their business (Doern, 2016; Runyan, 2006).

Governments are a source of financial assistance to businesses. Studies indicate providing disaster assistance, especially financial, should be administered efficiently and be released to applicants quickly (Doern, 2016; Runyan, 2006; Zolin & Kropp, 2006). Any business in the aftermath of Hurricane Katrina could apply for a disaster recovery loan through the Small Business Administration, a United States federal government agency. Recovery loans are available at low interest rates (Haynes et al., 2018, p. 2) with the caveat they are generally approved for firms on a "sound financial footing" (Stafford et al., 2013, p. 190). However, the literature on disaster assistance, both response (Runyan, 2006) and historic recovery studies (Alesch et al., 2001; Chang & Falit-Baiamonte, 2002; Webb et al., 2000) suggest a reluctance by business owners to apply for loans with most owner-operators self-funding their disaster recovery.

Several explanations have been offered for the negative perspective on the low interest disaster loans. Historic studies have identified indebtedness as a key deterrent



to applying for a loan (Alesch et al., 2001). In the case of Hurricane Katrina Runyan (2006) found the Small Business Administration loans proved problematic. First, the application was onerous requiring support documents covering years of financial statements, records that were lost or destroyed in the flooding; and second, long delays (85 days or more) in approval of an application (Runyan, 2006). In the aftermath of Hurricane Sandy, seven years on from Hurricane Katrina, Xiao et al. (2018) report the same concerns persist with the Small Business Administration loan and government assistance programs more generally.

With respect to knowledge about the various types of government assistance the literature revealed business owners had limited insight about what government supports existed. This included before exposure to a disaster with marginal increase in awareness after the disaster (Xiao et al., 2018). Moreover, compared with households businesses received disproportionately less government financial assistance, explained largely by a lack of knowledge about the assistance program and the procedures to apply for it (Xiao et al., 2018). With respect to the Small Business Administration loans, few businesses received financial support with the loan conditional on raising capital-security and agreeing to specific loan conditions (conditions unreported) (Xiao et al., 2018).

The New Zealand Government and its local councils are sources of financial assistance to the small business sector.<sup>7</sup> These political institutions provide wage subsidies and insurance to resolve initial financial barriers when a business experiences a disaster (Morrish & Jones, 2020, pp. 86, 91). Following the London 2011 riots government support was offered in several ways. Doern (2016) found local councils were quick to clear debris to re-open roads and restore power so business owners could access their shops. Further, councils established streamlined case management services, so business owners dealt with one official who handled all their matters (Doern, 2016). Governments have run marketing campaigns to reinvigorate disaster-affected communities and help boost tourism to regions (Cioccio & Michael, 2007; Irvine & Anderson, 2004). However, the research makes clear when governments promise offers of help and support that it needs to be forthcoming

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<sup>7</sup> A small business lacks definition in the study apart from the qualitative definition – “founder or co-founder that independently own and manage their business” (Morrish & Jones, 2020, p. 85). This study is also limited to the hospitality sector.

otherwise, if withheld, it intensifies the losses, pressures and resentment experienced by business owners, and erodes trust in public authorities (Doern, 2016).

So far the studies of business and natural disasters offer a limited insight into the affordances provided by governments to help small business respond to a disaster. The existing accounts of support and insights are principally those of individual business owners. The accounts overlook the lived experiences and perspectives of public authorities, first responders, insurance companies and not-for-profit enterprises (an exception being Runyan, 2006). Notably these essential service providers, insurance companies, governments and not-for-profit organisations have diverging missions and objectives to fulfill, therefore differing priorities and decisions to be made in a disaster context. Doern (2016) recognised this anomaly and recommended research be conducted with a broader range of stakeholders beyond business owners. To address the narrow and single-sided worldview the study will engage with multiple stakeholders with knowledge and insights about the policies, procedures and supports for the small business sector during a natural disaster. In doing so this study attends to the current omission in the literature.

Having reviewed the literature on the for-profit businesses, the response phase and disasters, the next section introduces the business capitals. An observation from the literature review thus far, is the absence of how capital resources vital to the functioning of all business' can affect a business owner's decision making. This is despite the review having themes that signify different types of capital resources are involved in a business owner's response to a disaster. A small body of literature has applied some capitals to investigate disasters and crises. The review now turns to look at these limited studies which act as a prelude to the design of the business capitals conceptual framework to explore SBOs' decisions and decision making responding to a disaster.

### **3.3 BUSINESS CAPITALS – CONCEPTUAL FRAMEWORK**

The notion of capitals historically has been a core concept in the disciplinary fields of economics and accounting theory being linked to the financial resources of organisations (Coulson, Adams, Nugent, & Haynes, 2015). However, this is a narrow focus. Consideration of different categories of capitals was recognised in the early work of sociologist Bourdieu (1986) and underpin the theoretical traditions related to

sustainable livelihoods literature (Beddington, 1999; Scoones, 1998, 2009), the assets-based community development approaches (Alevizou, Alexiou, & Zamenopoulos, 2016; Bennett et al., 2012; Green & Haines, 2015); the community capitals framework (Emery & Flora, 2006); the organisational sustainability frameworks including the Multicapital Scorecard (Thomas & McElroy, 2016) and the sustainability accounting methodology developed by the International Integrated Reporting Council (IIRC, 2013b).

Specific to this study, capitals are understood to be a range of resources a small business possess' or to which they can access (Stafford et al., 2010). Broad categories of capitals exist including natural, financial, manufactured, knowledge, psychological, social, cultural, political, human and intellectual although these are not exhaustive (Beeton & Lynch, 2012; Costanza & Farley, 2007; Emery & Flora, 2006; Flora, Flora, & Gasteyer, 2015; IIRC, 2013a; Zahra & McGhee, 2013). In this study six business capitals are selected, namely human, financial, manufactured, natural, social and political capitals. The choice of these six capitals reflects those essential inputs to support the functioning and survival of a small business. They also correspond with the Sustainable Livelihood theory (below). The capitals form two sides of a coin. On one side they are a source of opportunity, production and growth in an enterprise, while on the obverse side the capitals can be a source of vulnerability, loss and degradation.

In the business context, *human capital* comprises the productive capacities of the individual business owner embracing inherited attributes along with accumulated knowledge and learning gained through education and work experience. *Financial capital* incorporates the cash and savings, revenue, income and debt capital from loans of a business as well as physical assets owned by a business and grants. *Manufactured capital* refers to the built environment and human-produced objects and assets to generate goods and services. *Natural capital* relates to place-based assets in the environment with emphasis here on extreme natural events and hazardous environment of SEQ. *Social capital* is associated with the resources arising from one's networks and connections that involve close and weak ties, and *political capital* includes the institutional laws, policies and processes across three sectors: the public, private and not-for-profit sectors. For instance, government and non-government entities provide assistance and programs when a disaster strikes to support the small business sector as part of their respective roles in the community.

The capitals are located within the traditions of the assets-based model (Alevizou et al., 2016) and Sustainable Livelihoods Approach (Beddington, 1999; Scoones, 1998, 2009) which link to understanding human survival and development issues. Sustainable Livelihoods is a reference to the set capabilities, assets or the store of resources and activities required for living (Scoones, 2009, p. 175). However, a limitation of the approach is the stress on five capital resources of human, natural, economic, built and social, overlooking political and power relations on livelihoods. From a community perspective the capitals have been used to consider the resources available to a whole of community identified in the Community Capitals Framework (Emery & Flora, 2006). The community capitals framework addressed the political vacuum by incorporating it as part of its seven capitals of natural, cultural, human, social, financial and built capitals (Emery & Flora, 2006).

The business capitals schema offers a more nuanced approach to understanding how business owners respond to external shocks of natural disasters. Capitals can be identified in terms of a quantity or stock that is available at a point in time. These capital stocks can change over time (Goodwin, 2003; Schafer, 2002), thus they exhibit a fungibility or the ability to be converted from one form to another (Beeton, 2006, p. 5). Business owners are frequently making decisions as to how each of their capitals are deployed. Capitals may be damaged or depleted, divested, invested, increased, decreased or transformed to maintain the business' value (Coulson, Adams, Nugent, & Haynes, 2015). Although the fungibility of a stock varies with each type of capital, financial capital is the most mobile of these capitals.

The coupling of literatures on small business, business capitals and natural disasters during the response phase are thin, disparate and novel. Literature has emerged in the community development field influenced by the work of Emery and Flora (2006). Himes-Cornell et al. (2018) combines two disaster events, a natural and human-induced one, at two points in time. The scholars mapped qualitative community response data across the disaster cycle functions of prevention, response and recovery to identify those community capitals (natural, cultural, human, social, political and financial) most relevant to overcome each event. Stofferahn (2012) similarly based his study on community capitals framework to analyse how community capitals aided the Northwood community recovery efforts after a tornado struck in July 2009 resulting in widespread damage to the community. However, there is a marked difference

between the collective actions and resources of a community and those possessed by a SBO to respond to a natural disaster.

Another collection of studies applies capitals to family businesses (Brewton, Danes, Stafford., & Haynes, 2010; Danes & Brewton, 2012; Danes, Lee, et al., 2009; Haynes et al., 2011; Haynes et al., 2019). Family capitals refers to the stock of the owning families' human, social and financial capitals (Danes, Stafford, Haynes, & Amarapurkar, 2009). Features of family capitals relate to the intermingling of these capitals between business and family and vice versa to support business and family livelihoods. These studies are based on a national dataset of American family businesses and retrospective surveys. Relevant to the disasters context is inquiry into federal disaster financial assistance in the context of family business (Haynes et al., 2018; Haynes et al., 2011; Haynes et al., 2019). Studies remain inconclusive as to the benefits of disaster loan assistance to family business. Early studies (Haynes et al., 2011) applied county-wide data establishing that family enterprises in receipt of disaster assistance were not necessarily more likely to survive. However more recent research drawing on firm-level data identified disaster assistance was important to family business survival (Haynes et al., 2018). Apart from the emphasis on family businesses which complicates the business management and decision-making processes the family business research is generalisable to the United States.

Lastly, Xiao et al. (2018) examined community recovery decisions after Hurricane Sandy. Taking a sample of households and businesses recruited from inner New York City, Xiao et al. (2018) survey compared businesses with household recovery decisions and the effect of access to social, financial and institutional resources. Xiao et al. (2018) found business decisions were influenced mainly by social ties and community attachment rather than financial drivers. The study is confined to three capacities being financial, social and institutional. Its limitations include the absence of business decision making as the survey responses aggregated business size categories and overlooked separating business owners from managers (Xiao et al., 2018).

Missing in the business and disaster extant literature is a conceptual framework that pulls together the different business capitals possessed by a business owner or to which they can gain access. For example, through political institutions such as governments or via social networks. This study then attends to this oversight.

### **3.4 FILLING THE LITERATURE GAPS**

Chapter 1 introduces the background to this study of natural disasters which are identified as recurrent events with increasing frequency, intensity and scale in SEQ. The study sample is small businesses being defined in terms of headcount, as one with fewer than 20 employees (Australian Government, 2017; Gilfillan, 2015). It was revealed the majority of small businesses have few, if any, workforce, mainly non-employing or micro-enterprises with up to four employees (ASBFEO, 2019; 2020). The Australian Government has a policy expectation that small business will be self-reliant and prepared to respond to a natural disaster (AIDR, 2019; COAG, 2011). Yet, there is little data and knowledge that connects very small businesses, natural disasters, the response phase and a decision theory with a business capitals conceptual framework to inform how business owners make decisions during a response to such events. Chapter 2 reveals small business is a special category of business in Australian policy eligible to receive disaster assistance from a sudden onset natural disaster. Chapter 3 highlights the research has yet to incorporate government and non-government voices and perspectives in the discussion on business and their responses to natural disasters.

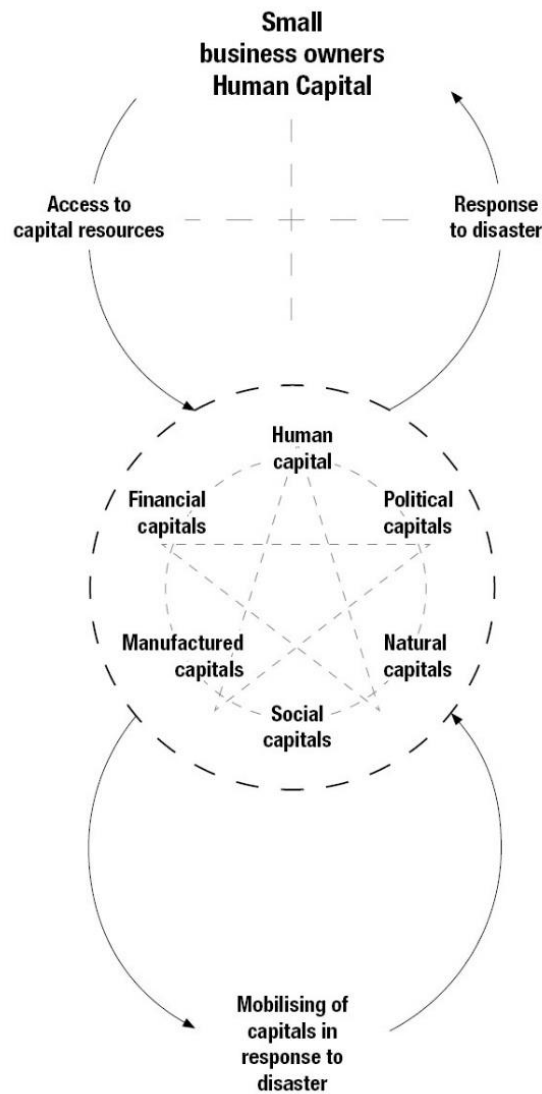
Each of the components identified in the preceding section is combined into this research project. The study addresses the identified gaps in the business and disaster response literature as well as the decision theory literature. These gaps are collated in Table 3.3. Flowing from the gaps three research questions were determined (refer Table 3.3) to address the two study aims. First, to explore the decisions and decision strategies of SBOs during and after a natural disaster and to understand how the decisions interact their business capitals. Second, to explore the affordances provided by government and non-government entities to support business continuity through the response phase.

**Table 3.3** Research gaps in the response phase of disaster and business studies

Research Gaps	Research Questions
<p>The response phase of the disaster cycle has received limited attention in the business and disasters literature (Landahl &amp; Neaves, 2017; Tierney et al., 2001).</p> <p>Researchers have studied a blend of salaried employees, business managers and aggregated results of business owners, managers, and support agents.</p> <p>Researchers have yet to exclusively examine SBO with fewer than 20 staff.</p> <p>Missing from the business and disaster literature is a decision theory to explore real-time decision-making processes. A relevant theoretical framework to account for experienced decision makers is the RPD model (Klein, 1998).</p> <p>Small business in Australia is eligible for disaster assistance after a sudden onset natural hazard, e.g., flooding, earthquake, bushfire, tsunami, severe storms (Australian Government, 2017).</p> <p>Responses to a disaster involve capital resources that a SBO possesses or can gain access to. Business owners make decisions as to how each of their capitals are deployed in a disaster (Stafford et al., 2010).</p> <p>Across the business and disaster extant literature a business capitals conceptual framework is missing that can organise SBO mobilising of their capitals (Haynes et al., 2018; Himes-Cornell et al., 2018; Xiao et al., 2018).</p>	<ol style="list-style-type: none"><li>1. What are the decisions faced by SBOs in the context of a response to a natural hazard disaster?</li><li>2. How are SBOs mobilising their business capitals to secure business continuity in response to natural hazard disasters?</li></ol>
<p>Researchers have yet to fuse the voices of a SBO with those representing government and other entities about the affordances available to SBO after a disaster. Existing accounts are the insights of business owners rather than other stakeholders (Doern, 2016).</p>	<ol style="list-style-type: none"><li>3. What are the affordances provided by external business stakeholders, notably governments and other non-government entities, to support SBOs to overcome natural hazard disasters?</li></ol>

Figure 3.1 provides a conceptual representation of an SBO as a key resource in their business, that is human capital. Through their agency, during the response phase of a disaster they make decisions as events unfold. Responses to a disaster involve various capital resources the business owner possesses or can gain access to. This study looks at SBO's decision making in a natural disaster and is mapped against six business capitals [middle circle] to provide a wholistic and more nuanced insight into the impact of a natural disaster on their business.

**Figure 3.1** Schematic representation of small business owner's decision making encapsulating business capitals



Notes: Adapted from Beddington (1999)



### 3.5 SUMMARY

The literature review identified research joining business, natural disasters and the disaster response phase is limited, messy and situated in a narrow range of contexts. Notably the United States (four studies), New Zealand (one study), rural Victoria, Australian (Cioccio & Michael, 2007) (one study) with two studies related to human induced disasters, situated in the United Kingdom and Scotland. This study recognises there are shortfalls in the literature and there are limited settings examined. Therefore, this study sets out to address the literature gap while concurrently broadening the contexts that are investigated, that is hazard prone SEQ in Australia.

The review also identified business population size samples have thus far varied. Business size has incorporated employee headcount from fewer than six employees (Irvine & Anderson, 2004) to large corporations of 1,200 (Zolin & Kropp, 2006). Studies have applied qualitative and quantitative definitions of a “small business” with these appearing to be arbitrarily selected. The review found studies neglect a justification for selecting an employee headcount with no definition that targets a business with few, if any employees, that is “small” business. The latter being a distinguishing feature in the small business literature. This study is different. It adopts a definition of small business with “fewer than 20 employees” with this size chosen because it aligns with eligibility criteria for access to natural disaster relief and assistance from the Australian governments. This size business is found to be the most populous in Australia and makes a substantial economic contribution to the nation’s GDP and socio-economic system.

Several themes were reported in this chapter that follow elements of the disaster cycle functions of PPRR. The pre-planning and preventative activities of the PPRR revealed implementing an emergency response plan was poor across any business size while the mitigation measure of insurance was generally more problematic for small businesses. Insurance was found to be expensive, often provided inadequate coverage or the policy was purchased for compliance reasons. Business use of disaster communications and warnings is under-examined. Business owners were identified as pro-active when responding to a disaster, however health and well-being emerged as issue of concern for them.

Despite the response phase being characterised as mobilising of resources that implicates decision making, the literature lacks a decision model to understand SBOs’

decisions and decision strategies. Support available to business owners in the face of a disaster was linked to social resources in the community including other business owners, employees, family and friends and the public. Political authorities offered support via debris clearance, power and utilities restoration, tax deferment and case management.

Finally, there is a small body of literature that applies a capitals model to investigate natural disasters. The capitals reflect the themes in the literature thereby offering a model for understanding how business owners manage resources in a disaster response. Studies applying a capitals framework tend to be situated at the community level with a few at the micro level of a business in the business and disaster literature. What research that has used a capitals model is limited to three capitals. With sparse studies combining six business capitals that revolve around the resources essential to a business' livelihood namely human, financial, social, political, manufactured and natural capitals, this research applies each as an organising framework for the analysis.

Next, in Chapter 4, the theoretical lens of recognition primed decision is described. This decision model emphasises experienced people and suggests that in their work domain, they can make timely and workable decisions, when faced with uncertainty, incomplete information and time pressure reflective of natural disaster conditions.

# Chapter 4: Theoretical lens-recognition primed decision model

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This chapter turns to consider the theoretical lens for this study, the recognition primed decision model to understand business owners' decision strategies during a natural disaster. The chapter begins with an overview of the naturalistic decision making paradigm from where the recognition prime decision theory emerged. Key features and limitations of the theoretical lens and its fit for this research are then discussed.

## 4.1 NATURALISTIC DECISION MAKING

Recognition primed decision (RPD) is a well-known and applied decision making model that emerged from the naturalistic decision making paradigm (NDM) (Hoffman & Militello, 2009) in the 1980s. NDM examines decision making performed by experienced people, professionals or subject matter experts working in complex, real world settings making decisions that are meaningful to them (Klein & Klinger, 1991; Lipshitz et al., 2001). Decision making in NDM environments is characterised by contextual factors (Klein & Klinger, 1991; Macquet & Pellegrin, 2017; Orasanu & Connolly, 1993) including ill-structured problems; dynamic and unstable conditions; vague goals; action/feedback loops to the changing conditions; time pressure; and high stakes consequences for the decision maker. Not all contextual factors need be present together (Orasanu & Connolly, 1993) or be at their most difficult simultaneously; rather a combination can make performing tasks challenging (Chaudet, Pellegrin, & Bonnardel, 2015).

NDM arose in response to the inadequacies perceived in the classical and rational choice models of decision making (Klein, 1998). These normative models of decision making propose decisions are reached by applying prescriptive or analytical methods (Janis & Mann, 1977; Klein, 1998). That is, decisions are the result of a systematic review of all possible options available to the decision maker with a weighing of each one's advantages and disadvantages. A rating is assigned to each option that facilitates a score, with the highest-ranking criteria considered the optimal choice (Klein, 1998; Klein & Crandall, 1995). Concurrent evaluation of the options is premised on access to complete information by the decision maker. The process

applies quantitative measures and assumes the decision is made within a context-free environment (Lipshitz et al., 2001; Ross, Shafer, & Klein, 2006). Moreover, normative decision models tend to be based on laboratory experiments using university students as the population sample who undertake straightforward reasoning tasks (Hoffman, 2015, p. 4; Klein, Orasanu, Calderwood, & Zsombok, 1993). Consequently, these artificial settings fail to replicate the real-world decision environment (Chaudet et al., 2015) with time pressures and incomplete information to support quick decisions (Klein, 1998). NDM sought to address this shortcoming with its focus on domain experts engaging in cognitive functions and decision making while working in their operational domains handling non-routine events (Klein, 1993; Klein & Crandall, 1995).

Naturalistic Decision Making was coined in 1989 at the inaugural conference of naturalistic decision researchers at Dayton, Ohio (Klein, 1998; Lipshitz et al., 2001). Since then, a community of practitioners have gathered biennially, investigating decisions across diverse work domains (Gore & Ward, 2018; Hoffman, 2015). Historically the work domains and the subject matter experts were from the public sector (Lipshitz, Klein, & Carroll, 2006). Research examined emergency responders in firefighting, military leaders, aviation, medical and neonatal nursing (Brezovic, Klein, & Thorsden, 1990; Crandall & Calderwood, 1989; Klein, 1998; Klein & Klinger, 1991). Since these early studies research has diversified into a cross-section of workplace domains and “experts” illustrated by the papers presented at the biennial NDM conferences held for more than 30 years in Europe and North America (Chaudet et al., 2015; Gore et al., 2018; Hoffman, 2015). Emerging areas of interest and individuals include managers decision making in the recruitment of employees (Armenis & Neal, 2008), outdoor education leaders (Boyes & O'Hare, 2011; Boyes et al., 2018) and elite athletes and sports players (Johnston & Morrison, 2016; Kermarrec & Bossard, 2014; Macquet, 2009; Macquet & Skalej, 2015). The cognitive decision strategies of SBOs within the natural disaster context is absent from this line-up of research areas.

In 2015 Hoffman called for the application of the NDM model to be applied to the “new complexities, dilemmas and conundrums facing the Free World” (Hoffman, 2015, p. 11). Explicitly he recommended research should target natural disasters (Hoffman, 2015, p. 9) with an emphasis on examining the cognitive features of a

broader range of decision makers beyond “domain experts” to people across “all walks of life.” (Hoffman, 2015, p. 13). Responding to these calls this study applies the RPD model to SBOs in the natural disaster’s context to explore their decisions and decision processes.

## **4.2 RECOGNITION PRIMED DECISION MODEL**

### **4.2.1 Background**

Klein (1998) developed the RPD model in the mid-1980s while researching decision making of experienced urban ground firefighting commanders in America (Klein et al., 2010). Klein and colleagues initially attempted to apply analytic or normative decision models to test decision making of firefighters while carrying out their tasks in emergency situations (Klein et al., 1988). However, the initial model they applied was found to be unsupported (Klein, 1998; Klein & Crandall, 1995). In more than 85 percent of non-routine high-risk emergency decisions the researchers discovered firefighters took less than a minute, and in most situations seconds, to reach a decision (Klein & Crandall, 1995). The researchers reasoned fast decision making was the result of patterns imprinted in memory accrued from years of work experiences (Klein, 1998). These patterns were retrieved to match a current challenge that enable firefighters to reach a single workable plan of action without delay (Klein, 2008).

### **4.2.2 Underlying assumptions of recognition primed decision model**

Recognition primed decision making is a cognitive based theoretical decision model that is process oriented. The model is underpinned by several assumptions:

1. It is about people who have accumulated experience in their work domain. They use their amassed experiences to generate a workable plan of action.
2. The experiences of the decision maker create patterns of information that are stored in their memory. When faced with a challenging event requiring a speedy response the repertoire of cognitive patterns is activated, with patterns from the past matched with a current situation which in turn facilitates a course of action.
3. The decision emphasis of an experienced decision maker is on the closest workable option that matches the situation. This contrasts with normative

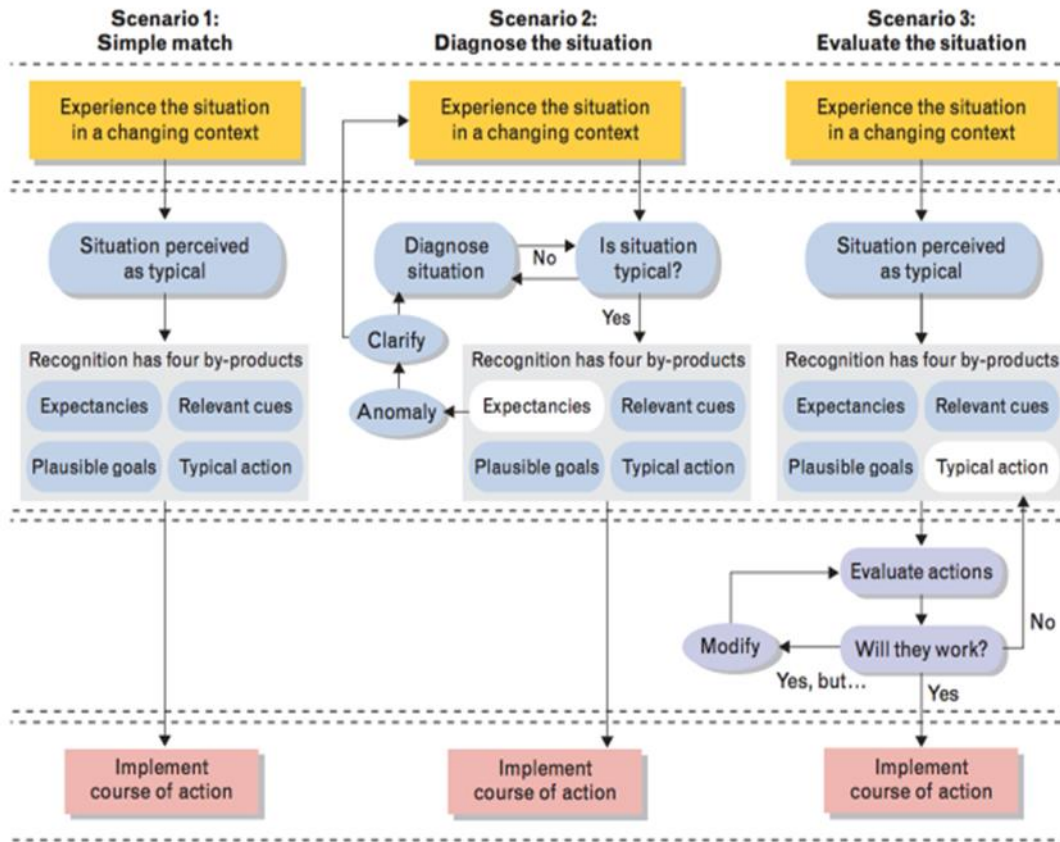
decision models that compare many alternatives concurrently to reach an optimal outcome. Experienced decision makers seek options that are satisficing (Simon, 1955, 1957) rather than searching for the best solutions (Klein, 1998; Macquet & Pellegrin, 2017).

4. When evaluating a decision, the decision maker mentally visualises the outcome to reduce problems when the decision is implemented (Klein, 1998).
5. The RPD model emphasises being primed to act quickly rather than on analysis and paralysis when faced with decision making under uncertainty, dynamic conditions and high-stakes consequences (Klein & Klingler, 1991).

#### **4.2.3 Description of the recognition primed decision model**

The RPD model combines two processes: situation recognition and mental simulation (Klein, 1998). The first process is the way a decision maker sizes up a situation to implement a fast, workable course of action (decision). The second process of mental simulation considers the way an action (decision) is evaluated (Klein, 1993, 1998). The processes are depicted in the RPD model in Figure 4.1.

Figure 4.1 Recognition primed decision model – Multiple scenarios to experience a situation in a changing context



Notes: Diagram from Senne and Condon (2007, p. 240) based on Klein's (1998, p. 25) RPD model and three scenarios

#### 4.2.4 Situation recognition

Situation recognition is the main component of the RPD model. This component considers the process used by decision makers to recognise the current situation as one that is familiar or typical or as one that is novel. Whether a situation is classed as typical or not depends on a decision maker's historical and collective experiences imprinted in their memory (Klein, 1998). A situation assessment which finds the set of circumstances as 'typical' means a current event can be matched to some prior event. When a pattern match is found it facilitates knowledge about what to do in such circumstances, that is, the retrieved information provides a typical action (Klein, 1998). When a decision maker is selecting a course of action they tend to generate one option, not several as found in rational decision models. RPD asserts actions are based on an action queue of typicality (Lipshitz, 1993, p. 107). An action closest to the current situation will be first in the line-up of reactions to choose from. Hence typical actions tend to be "satisficing" or good enough choices (Simon, 1957) rather than

optimal (Klein, 1998). By selecting the first option, the decision maker reduces time evaluating their options and delaying the implementation of their response.

Recognising a situation as typical involves the decision maker considering four pieces of information. Identified as recognition by-products (refer Figure 4.1) the relevant information to support a situation recognition combines: relevant cues; goals; expectancies; and typical action to be implemented (Klein, 1998). This information helps make sense of what is happening at the time.

Cues are any ‘stimuli’ within the environment where a situation is unfolding that has implications for action (Okoli, Weller, & Watt, 2014, p. 123). The literature identifies that multiple cues exist such as sound; smell; taste; visual such as an observation of an individual’s behaviour or attitude; and verbal and non-verbal communication; or the environmental conditions and weather patterns (Crandall & Getchell-Reiter, 1993; Johnston & Morrison, 2016; Klein, 1998; Okoli, Watt, & Weller, 2017; Okoli, Weller, & Watt, 2014). Cues *in situ* must be able to generate meaningful and worthwhile information for the decision maker to interpret, process and translate into a workable course of action (Okoli et al., 2014, p. 123). Experienced people use cue information to forecast causal relationships in each situation (Boyes & O’Hare, 2003), thus those cues most relevant and meaningful to the decision maker are emphasised when planning an action (Klein, 1998).

Flowing from critical cues is an understanding of the possible goals. Goals are specific to the actions taken at that time and the given contextual circumstances. Goals help to filter out irrelevant and unachievable actions. As situations are dynamic, goals will shift according to how the cues are perceived by the decision maker (Klein, 2000).

Expectancies relate to what is likely to happen next and when based on the decision maker’s understanding of the situation (Klein, 2000). Should the expectancies in a situation be unclear or not recognised as anticipated it suggests a misinterpretation or misjudgement by the decision maker as to what has happened. Consequently, more searches occur to find information that helps to understand and reassess the situation to establish what is going on (*refer Figure 4.1 to black arrows pointing from expectancies*). Expectancies act as a check on how well the situation dynamics have been understood (Klein, 1993, p. 142).



Typical actions relate to the type of workable options in the situation that are likely to be successfully carried out by the decision maker based on their pre-stored repertoire or patterns (Klein, 2000). When a decision maker is selecting a course of action they tend to generate one option at a time.

#### **4.2.5 Mental simulation**

The second process of the RPD is the evaluation of the course of action using mental simulation. Mental simulation involves the decision maker running through a mental image of the typical action to check for any problems if the action is implemented (Klein, 1998). In complex cases an evaluation of the planned action may reveal flaws. In such a case the decision maker may consider adapting the action, rejecting it and looking for the next typical action in the queue (Klein, 1993). Mental simulation combines information taken from changes in the environment with the attentional and perceptual skills of the decision maker (Macquet & Pellegrin, 2017).

In summary, when a decision situation is happening the decision maker can tap into their memory bank of patterns, based on experience, to find a pattern that offers a typical action to support a response to the situation. RPD provides a means to make decisions quickly, especially in dynamic, time-constrained settings that make deliberative and analytical strategies difficult to apply. The situation recognition and pattern matching are intuitive decision processes with responses appearing instantaneous, automatic and subconscious (Klein & Kahneman, 2009), while mental simulation is analytical and deliberative. Decision makers emphasise more time is spent on the recognition phase rather than comparing options and evaluating them (Klein et al., 1993).

#### **4.2.6 Multiple scenarios within the recognition primed decision model**

Klein's (1998) RPD model is presented as three scenarios (refer Figure 4.1): 1. simple match; 2. diagnosis of the situation, and 3. evaluation of a course. In a simple match the decision problem is recognised as a typical situation that generates a typical action that is implemented immediately (scenario 1).

The second scenario, diagnosis of the situation, relates to situations that cannot be recognised immediately. Scenario 2 presents more complexity in the situation because patterns or features are missing or not clearly matching previous encounters of a decision maker. Consequently, inconsistencies may arise, or the situation

assessment has been misunderstood or misinterpreted by the decision maker. The decision maker needs time to diagnose the situation and to gather extra information to understand what is happening. When a decision maker recognises the situation s/he adapts to the circumstances then implements a typical action (Klein, 1998). Scenario 2 involves less rapid decision making since it relies more on analytic or deliberative strategies to find a typical action (Klein, 1998). The focus is targeting specific cues and patterns found in the environment (Klein, 2000).

The third scenario of the RPD-model is linked to the evaluation of the course of action. In this situation a decision maker mentally imagines the workability of the course of action and envisages how it will play out and what, if any, may be the potential effects. Using mental simulation, the decision maker can choose to modify, reject or accept the course of action. If rejected the next option stored in memory will be generated and considered (Klein, 2000) until an acceptable option is found.

#### **4.2.7 The role played by experience**

The RPD is premised on decision makers that are considered experts in their work domain. What constitutes an expert decision maker? The literature suggests various definitions and descriptions for the concept of an expert (Farrington-Darby & Wilson, 2006). In the context of RPD and NDM experts are those individuals who “operationally have been recognised within their profession as having the necessary skills and abilities to perform at the highest level” (Shanteau, 1992, p. 255). Such a definition relies on peer assessment (Klein & Kahneman, 2009, p. 519). In the RPD model performance relates to domain-specific knowledge and experience. An individual’s experience is specific to their work domain and work tasks rather than generically applied (Klein, 2015). Experts hold mental models containing a “rich repertoire of ‘patterns’” and cues gathered over years of direct, vicarious and virtual experiences (Klein & Kahneman, 2009), along with deliberate practices and procedures from engaging in their work environment (Klein, 2015). These patterns form the basis of intuitive judgements in experts. Experts are able to “make fine discriminations that are invisible to naive individuals” although difficult to articulate (Klein, 2015, p. 165). Cognitive pre-stored sophisticated mental models offer solutions to explain “how things work” that can be adapted to emerging conditions and situations (Klein, 2015, p. 165).

As experts display qualities of discriminating between patterns, when faced with a decision they draw on their patterns to understand the situation (Klein, 2015). Rarely will these experts rely on the evaluation of, and selection of, a course of action based on consideration of multiple options. Situations trigger their pattern recognition, pattern retrieval process (Klein, 2015) to decide on a course of action. Pattern matching supports automaticity and rapid decision making under dynamic, time sensitive, high-stakes circumstances (Orasanu & Connolly, 1993).

Scholars have compiled a set of psychological characteristics and strategies that differentiate expert decision makers from novice decision makers (Farrington-Darby & Wilson, 2006). Based on reviews of literature, scholars Klein and Miletto (2004) cited in Crandall, Klein, and Hoffman (2006, p. 135) and Ross, Shafer, and Klein (2006) identified several themes that experienced individuals have. These are collated in Table 4.1.

**Table 4.1** Cognitive elements of experienced decision makers

<b>Cognitive elements</b>	<b>Brief description</b>
Mental models	Experienced people have a rich reservoir of internal representations (imagery) of the way things work in their field of work. They understand causal connections about how things work and relate to each other which facilitates rapid understanding of situations
Perceptual skills	Experienced people can see and notice cues and patterns that allows them to make fine discriminations in a situation
Associations and typicality	Because experienced individuals have built up a repertoire of patterns, they can quickly assess a situation as typical or novel that requires attention
Routines	Experienced people know how to get tasks done because they have built up and learnt a range of routines and tactics to respond to problems. They can combine different routines to help adapt to a situation and address the immediate issues
Declarative and tacit knowledge	Experienced people have a considerable body of declarative knowledge, that is information about facts, rules, standard operating procedures, operational knowledge to help them deal with situations. They also hold tacit knowledge that is often inaccessible to consciousness and difficult to express.
Manage uncertainty	Experienced people tend to have a variety of strategies they use when faced with and needing to manage uncertainty
Understanding personal strengths and limits	Individuals with experience can self-reflect and self-monitor themselves.

*Sources:* Crandall, Klein, and Hoffman (2006) and Ross et al. (2006, pp. 405-406)

#### 4.2.8 Rationale for studying experienced people

The historical rationale behind studying experts has been to establish a yardstick by which to measure performance between experts and novices (Hoffman, 2015).

Knowledge of expert performance and expert levels of proficiency provided the basis for designing training programs and decision support aids to help novices build competencies and acquire the necessary performance skills across different professions (Crandall et al., 2006; Klein, 1998; Klein & Kahneman, 2009).

Past research has concentrated on domains involving experts in leadership roles (Klein, 1998; Klein & Kahneman, 2009) guided by highly-procedural operating environments that experience emergencies as part of their usual routines, such as the military (army and navy officers), firefighters, nurses and pilots (Crandall & Calderwood, 1989a; Crandall et al., 2006; Klein et al., 2010; Lipshitz et al., 2006). The point of departure in this study is the focus on experienced SBOs whose attention is on the day-to-day running of their small business and providing goods and services to their customers rather than responding to emergencies. SBOs are self-reliant and their decisions may be the difference between the life or death of their business and their livelihood. This is a significant difference from previous subjects examined who were employed by large corporations funded by taxpayers (Lipshitz et al., 2006) rather than subjects who are self-funded relying on a customer base and cash flow from the sale of goods and services.

#### **4.2.9 Limitations to recognition primed decision model**

Several shortcomings have been associated with the RPD. First, it is an *in situ* cognitive processing model that relies on the accumulated internal knowledge structures of the decision maker that is their experience. Second, the focus is on situation recognition of four pieces of information: plausible goals, cues, expectations of what will happen leading to an action. One limitation of the model is its inability to accommodate advanced situational identification. That is, situations which are dynamic where changes happen suddenly and without time to use memory recall. McLennan and Omodei (1996) addressed the absence of time in the RPD model by suggesting decision makers undergo mental processing when they become aware of an event but prior to actually encountering it and its recognitional features (cues, goals, expectancies and action). McLennan and Omodei (1996) referred to this process as mental pre-priming. Two types of circumstances were examined by McLennan and Omodei (1996), Australian Football League umpires and firefighters, where pre-recognition simulations in naturalistic, time-constrained environments take place. Firefighters think about possible scenarios of a situation while driving to a fire while

football umpires actively simulate possible decisions during play, drawing on their coaching history and pre-empting what is likely to unfold as a game is played. The researchers found evidence for the incorporation of pre-priming into the pre-recognitional phase. Pre-priming provides an explanation for how appropriate actions can be made faster and more specific to the event (McLennan & Omodei, 1996).

A second shortcoming of the RPD model is its lack of planning as a construct in the model (Lintern, 2010; Macquet & Pellegrin, 2017). Planning has been identified as a contributor to the pace of RPD processes, for example in the outdoor adventure environment (Boyes et al., 2018). Some scholars have encouraged planning to be part of the model (Macquet & Pellegrin, 2017). Boyes et al. (2018) have distinguished four stages of planning, notably long-term planning, formal meetings, day-to-day planning and in the immediate period before a decision event. They found planning can facilitate information processing within the RPD. Planning allows a decision maker to adapt to eventualities and it reduces the cognitive load during decision making (Boyes et al., 2018). The different stages of planning provide scaffolding for the decisions being made in the moment. Long-term planning accumulates in the long-term memory or mental models and forms background information. Planning through meetings and day-to-day discussions prior to a situation creates updated memory patterns and supports more immediate cognitive associations when an event or situation arises (Boyes et al., 2018).

Not all decision making situations will necessitate fast decision responses; nor are they suited to the RPD model (Lipshitz, 1993). The RPD model was initially developed for non-routine, time-pressured circumstances and is associated with experienced people (in their work domains) (Klein, 1998; Klein et al., 1993). Therefore, in situations involving complex weighing of the advantages and disadvantages of a decision such as in the case of a policy, purchase of a house or a building project where coherence is required, the RPD model is redundant. In such decision situations the decision process will benefit from rational choice approaches incorporating analytical and deliberative processes. These types of decisions are illustrative of conditions which need an optimised outcome or require justification for the selection of the final decision. RPD in contrast is linked to intuitive and automatic decision responses that are made without comparing options or needing an explanation for the course of action chosen (Klein, 1998, 2015; Lipshitz, 1993).

### **4.3 RECOGNITION PRIMED DECISION MODEL ‘FIT’ FOR THE STUDY**

The rationale for selecting Klein’s RPD theory is covered next. It is noted the decision theory field offers a broad range of rational and naturalistic decision models (Klein, et al., 1993; Klein, 1998) that could be applied to this study. First, a key factor in the selection of the RPD relates to its origins in a decision model that is situated in naturalistic settings (NDM paradigm). In this qualitative and exploratory study I was seeking a decision theory that would retain the features of the real-world work environment of a small business and the owner: imperfect information, dynamic and changing conditions, time pressure and high-stakes consequences (Orasanu & Connolly, 1993; Chaudet et al., 2015); contextual features that correspond with a small business work domain during “business as usual” but become more exaggerated when a business owner responds before, during and after a natural disaster. The author drew on the RPD so as to accommodate the small business work domain, the disaster conditions and business owners’ operational tasks.

Second, the RPD is a descriptive, process-oriented decision theory. Therefore, it accommodates understanding decision processes and provides the opportunity to explore individual cognitive resources that can be beneficial when a business owner has few physical, financial, human and social resources to support a response. Cognitive knowledge suggests a competitive advantage in a business owner by quickly recognising situations, discriminating cues, arriving at workable, meaningful solutions to that business owner and business then implementing them immediately. It also can evaluate a decision, being able to accept, modify or reject any option without delay, implement it and move on quickly. It is a fast-paced, uncomplicated decision lens that reflects the strengths and competencies of the business owner rather than applying a lens that examines errors in the business owner’s decision processes (Klein, 1998).

As a contrast, normative models of decision making (e.g., Janis & Mann, 1977) were considered inappropriate, being unable to integrate operational variables of time pressure, dynamic conditions and high stakes. They are inflexible and redundant when dealing with rapidly-changing circumstances (Klein et al., 1993). Further, rational decision models emphasise the decision event, reviewing all the options concurrently to reach the best decision outcome. This approach needs time. One needs to search for the relevant information as it requires complete information to support the decision making (Klein, 1998; Sokolowski, 2012). Taking time to locate data when a business

owner is responding to a natural hazard is unrealistic and impractical. Their focus is on immediate intervention to minimise or eliminate losses to their business and livelihood, but also protect against harm or injury to their person and others. Their decisions are most likely to be satisficing (Simon, 1955, 1957) rather than an optimal choice (Klein, 1998; Klein et al., 1993).

The RPD model was considered a good fit to capture the on-the-ground, in-the-moment decision processes of SBOs. The model can explicitly accommodate the cues and actions of business owners faced with a natural disaster. It can account for their individual personalities, the heterogeneity of business domains they work in and the diversity in SBOs' backgrounds and work experiences. Further, in addition to fast decision making, the model integrates deliberative or analytical strategies (Klein & Kahneman, 2009) which business owners may use in a decision that requires deeper reasoning. Last, as this study is exploratory in nature, the RPD model was considered appropriate to achieve this objective.

#### **4.4 SUMMARY**

This chapter has introduced the RPD model as the theoretical framework for the study. The chapter began by situating the origins of RPD model in naturalistic decision making, with its emphasis on experienced decision makers making decisions under complex and dynamic conditions involving vague goals, high stakes and time pressure. Such an environment for decision making contrasts with multi-attribute rational decision theory. Rational decision making assumes time and knowledge of all the options to make an informed decision that gets the best outcome. RPD is a fast decision processing model that focuses on satisficing decisions.

The review highlighted RPD model was based on research investigating command and control performance of urban fireground commanders in the United States. Since its emergence in the 1980s it has been applied and validated in work settings including the military, medical-nursing, sports, outdoor education and large organisations. Yet, studies applying the RPD to the small business domain to explore business owners' decisions in the context of a natural disaster are novel.

It was established the RPD model combines two processes. First, a situation recognition process which draws on four sources of information to support a decision maker size up a situation fast. Second, a process involving an evaluation of the course

of action with the decision maker mentally visualising the workability of the proposed action. Experienced decision makers tend to generate a single option rather than concurrently comparing several of them together.

The second part of this chapter considered the central role of experience of the decision maker in this model. Then the justification of RPD model as a suitable theoretical decision theory was provided, the rationale being based on the knowledge RPD making is suited to decisions made in real-time, under time pressure and uncertainty. In the context of real-world decision making an SBO, when confronting a natural hazard event, has little, if any, time to search for optimal solutions. Therefore, the study has a strong theoretical foundation for analysis of decisions and decision processes of SBOs in their natural setting. Chapter 5 turns to the research design for this study.



# Chapter 5: Research design

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This chapter turns to describing the research design adopted to achieve the two aims of this study stated in Chapter 1.

The chapter starts by clarifying the philosophical position underpinning this research before justifying the choice of qualitative methodology to explore SBOs' decisions during the response phase of a natural disaster. The research method covering the study setting, population samples, recruitment eligibility criteria and participants profile is then presented. Then the data collection strategy, data triangulation and data analysis are discussed. Lastly, the trustworthiness of the study is considered, followed by ethical considerations and the limitations of this research.

## 5.1 PHILOSOPHICAL STANCE

### 5.1.1 Critical realism

Research paradigms provide a worldview of the way in which we make sense of our surroundings. Defined as 'the basic set of beliefs that guide action' (Creswell, 2009, p. 6), paradigms shape the conceptual framework for a researcher to follow when conducting social research. That is, a paradigm details the design, implementation and analysis of one's research (Perry, Riege & Brown, 1999).

The philosophical orientation and research paradigm of critical realism has informed this study. In brief, critical realism provides a bridge between the positivist view of a single, apprehensible reality of discrete elements both known and objectively categorised (Perry et al., 1999, p. 16) and the constructivist view of truth which holds there are multiple realities that are based on an individual's mental construction of the meanings they give to a social phenomenon. In critical realism both the natural and social worlds are characterised as 'emergent' (Blundel, 2007, p. 52) within a differentiated world.

Critical realism places an emphasis on ontology (how one views the 'reality of the world') and proposes the world is stratified into three layers: the real, the actual and the empirical (Sayer, 2000). In the domain of the real there exist underlying structures, processes or mechanisms that, while not always visible, operate

independently of human agency and observation to generate patterns of an event; in the actual domain there are events, whether observable or not, that take place in time and in space, while in the empirical domain there exists human perceptions and experiences in the world which reflect what takes place in the actual and real domains (Blundel, 2007; Bollingtoft, 2007; Sayer, 2000). Table 5.1 sets out this stratified ontology.

**Table 5.1** Critical realism – stratified ontology

<b>Domains</b>	<b>Entity</b>
Empirical	Human knowledge, experiences, and perceptions
Actual	Events
Real	Structures, associated mechanisms, processes, and causal powers

*Source:* Blundel (2007), Sayer (2000) and Perry, Riege, and Brown (1999)

The focus of critical realism research is to understand the relationships between the observable and invisible structures and mechanisms that influence the outcome of events and human agency<sup>8</sup>, experiences and observations. Human agency here is defined as an individual SBO’s capacity to act independently and exercise preference with respect to business decisions. Explaining causation within critical realism takes account of the causal mechanisms that are operating within a context, discovering their triggers and how they operate under contingent conditions (Perry et al., 1999). Research arising from a critical realist approach presents a distinctive worldview by attempting to understand what is happening in the world “beneath the surface” (Blundel, 2007, p. 52) when a particular event occurs, to clarify the circumstances or context in which the event will occur, and the type of explanation that will be considered valid (Schiller, 2016).

Table 5.2 translates the implications of selecting a realism paradigm for the design of this study. The ontology aim is to explore and understand the complex phenomenon of SBOs decision making during a natural disaster and the role of political stakeholders (government and non-government stakeholders), policies and processes that can constrain or enable SBOs to overcome the event and continue operations. Methodologically, the techniques proposed for collecting data involve methods associated with interviewing and triangulation of multiple sources of data.

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<sup>8</sup> Human agency has been defined by the author for this study as: the capacity of the SBO to act independently, influence, shape and exercise their choices with respect to their business and decisions.

Realism ontology regards reality as “real” but fallible (C. Perry et al., 1999, p. 18) with findings arising from the study to be true until disproven by future inquiry (Schiller, 2016, p. 18).

**Table 5.2** Realism philosophical belief system

<b>Element</b>	<b>Philosophical assumptions</b>
<b>Ontology</b>	Reality is “real” but imperfectly and probabilistically apprehensible. To understand reality, the use of multiple sources of data and information or triangulation is necessary to try and know it
<b>Epistemology</b>	Modified objectivist Findings of the research considered most likely true Researcher values and role in the research process is important to acknowledge Triangulation of data
<b>Methodologies</b>	Mainly qualitative methods incorporating convergent interviews and triangulation of data Supports How and Why research questions
<b>Theory development</b>	Inductive theory building Qualitative
<b>Evaluation criteria</b>	Credibility, dependability Transferability and confirmability

*Sources:* Sohb and Perry (2006), C. Perry et al. (1999), Healy and Perry (2000)

## 5.2 QUALITATIVE METHODOLOGY

Following the guidance of the critical realist paradigm a qualitative inquiry is adopted for this study to answer the three research questions. The justification for qualitative research as a suitable approach for this research is extended here. Apart from the qualitative study being chosen because of its ‘fit’ within the realist paradigm four reasons support its suitability for the study. These are canvassed next.

First, qualitative research corresponds closely with NDM settings and the RPD with its focus on decision making happening in real-world settings (Klein, 1998). Second, this research seeks to explore ‘insiders’ accounts of the little-understood phenomenon of SBO decision strategies during the response phase of a natural disaster. SBOs and relevant institutional stakeholders’ experiences of natural disasters including detailed, subjective accounts and interpretations of the important issues relevant to the topic is sought (Marshall & Rossman, 2011). Moreover, scholarship on the six business capitals - natural, financial, human, social, political and manufactured - remains underdeveloped in the business and disaster literature. These knowledge

shortcomings can be best addressed through qualitative methods. Both Bhattacharjee (2012) and Marshall and Rossman (2011) encourage qualitative inquiry when doing exploratory studies of little-understood phenomena to generate new ideas on an issue, follow hunches or test the feasibility of future study.

Third, qualitative research offers scope to collect and analyse textual data. It lends itself to capturing participants' perspectives in their native voice, on their terms and in their natural settings using word-based activities (Avis, 2005) like transcriptions, audio recording and film. Hence an advantage is the coalescence of multiple voices, elicitation of multiple realities and the opportunity to present multiple themes to explain the dimension of the topic. This contrasts with laboratory-produced knowledge using variables established by the researcher and participants, often with peripheral interest in the topic. Then the data are presented in narrow numerical and statistical formats (Gray, 2014) that inhibit the insights found in the fine-grained details and nuances reported through textual data.

Finally, qualitative inquiry is set in the field allowing direct interaction between the researcher and study participants. Data can be collected in an informal and unstructured manner that promotes flexibility and encourages the uncovering of issues 'below the surface', or to explore novel or ignored phenomena (Marshall & Rossman, 2011).

Adopting a qualitative approach, the basic design characteristics of the methodology apply. Features include inductive analysis, the researcher as a key instrument in data collection, triangulation of various data sources and detailed reporting of multiple participants' perspectives (Creswell, 2014). Providing rich and detailed accounts of the phenomena supports quality and rigorous research (Healy & Perry, 2000). Consistent with the critical realism worldview multiple layers of detailed information allow the exploration of the complex way in which human agency and structural factors produce the events observed and capture the causal tendencies at work (Miles & Huberman, 1994, p. 4).

### **5.2.1 Research setting and participants**

Silverman (2010) observes that when conducting qualitative research, one needs to find the relevant environments where one is most likely to find the people and processes desired to be studied. Phillips (2014) contributes when studying natural

disasters not only should individuals be sampled but sites as well. Observing these recommendations, the next section addresses each element. The site is discussed first and then the participants for the study are outlined.

### *Setting – Southeast Queensland*

Chapter 1 identified Southeast Queensland (SEQ) as the setting for this study. The region experiences a variable climate and is recognised for its natural hazard events, especially sudden onset cyclones, heavy rainfalls, winds, flooding, severe storms, storm surges and bushfires (Queensland Government, 2017b). Both elements make SEQ a relevant setting to conduct this study as they relate directly to the research questions (Bryman, 2016, p. 408). Conveniently living and studying in the region, my residence provided access to ten local governments, making the environment ideal to find suitable locations and appropriate participants (Phillips, 2014; Silverman, 2010). Proximity to the relevant field environment aids in managing time and cost factors associated with carrying out the project (Lofland, Snow, Anderson, & Lofland, 2006; Marshall & Rossman, 2011).

A map of Australia is at Figure 5.1. It identifies the position of SEQ in the state of Queensland and its relationship to other states and territories. The LGAs relevant to this study are also included in the diagram (shaded yellow). Interviews were carried out in urban, peri-urban and rural settings in seven LGA areas. Each site has experienced extreme weather events.

**Figure 5.1** SEQ Local Government Areas



Source: SEQ Food Trails, 2021, <https://seqfoodtrails.com.au/>

### 5.2.2 Sample and recruitment processes

Identifying the most suitable research participants is critical to ensure the most useful and credible data to answer the research questions (O'Leary, 2017). The choice of SBO was influenced by two observations. First, research into small business with fewer than 20 employees has been neglected in the business and disaster literature. Second, the definition of small business with fewer than 20 employees correspond with the definition applied by the Australian Government under NDRRA (Australian Government, 2017). Australian, state and territory governments' policy guidelines provide relief and assistance to these businesses including eligibility for loans and grants if they are impacted by natural disasters, thus strengthening sample validity. Two population samples were recruited for this study: SBOs and key informants each with knowledge, experience or exposure to disaster management in the SEQ.

### 5.2.3 SBO recruitment strategy

Small business owners were selected in a purposive manner (Kumar, 2014) to this study. As a non-probability sampling strategy, purposive sampling involves choosing participants based on personal judgment. They are chosen because they achieve the aims of the research, can contribute the relevant information to answer the research questions and are prepared to do so freely (Kumar, 2014; O'Leary, 2017). Gray (2014) relates such participants are information-rich cases. Despite using a purposive approach to recruit participants, the strategy has shortcomings including the potential to omit cases in the sample or show bias in the selection process (Gray, 2014). However, resources and time can hinder sample choices (Silverman, 2005, p. 131).

Seven eligibility criteria were used to recruit SBOs:

1. The business employs fewer than 20 employees.
2. The person interviewed is the SBO and works in the business.
3. The business owner experienced a natural hazard.
4. A natural hazard is identified as rapid onset (bushfire, flooding, storm surge, tsunami, cyclone).
5. The natural disaster event happened within SEQ.
6. The business legal structure is either a sole trader, partnership, company or trust.
7. At the time of the interview the SBO was trading and surviving in their business.

Gaining access to a sample of SBOs affected by a natural disaster is recognised as difficult (Kuruppu et al., 2013; LeSage et al., 2011). Studies in the disaster and business literature indicate researchers have applied several strategies with varying degrees of success to recruit business owners-managers to participate in disaster research. Approaches adopted include large-scale mail surveys (Webb et al., 2000; Webb et al., 2002); telephone interviews (Josephson et al., 2017; M. Marshall et al., 2015); cold canvassing street-front businesses (Chang & Falit-Baiamonte, 2002); bicycling from business to business (LeSage et al., 2011), and purchasing databases through business-to-business marketing firms (C. Brown et al., 2015). These studies were supported by a mix of funding and research teams with an orientation towards business sizes greater than 20 employees.

Similar recruitment approaches were impractical for this dissertation given the limits of the doctoral program, budget, and timeframes. Therefore, recruitment combined snowball and convenience strategies to locate participants with the researcher relying heavily on referrals (O'Leary, 2017). Contacts were sourced via the supervisory team, work and student colleagues and friends with small business contacts. Referrals were also suggested by key informants. As well, the researcher invited SBOs to refer other business associates. To do this SBOs were given an Expression of Interest form to circulate among their colleagues. In addition, the researcher carried out telephone cold call canvassing as well as walking into business owners' shops seeking an interest in participation in the study. Telephone contact was made with business network groups, industry associations and Chambers of Commerce, with contact numbers sourced from websites and business directories. An article about the study was also placed in a business association newsletter to encourage participation.

What proved least effective in recruiting participants was contacting local councils to distribute the research information sheets [to businesses registered on their database], Chambers of Commerce, business networks and home-based business associations. These strategies proved ineffective, resulting in no responses. Cold canvassing via telephone, making direct contact face-to-face with business owners and referrals from personal friends, university colleagues and political informants were more successful approaches to secure participants.



#### **5.2.4 Key informant recruitment strategy**

Purposive sampling strategy was used to recruit key informants (Kumar, 2014). Key informants who had rich insider understanding, knowledge and experience of the disaster management topic, and were considered to fit the eligibility criteria, were selected to participate in the study. Importantly, these informants expressed a willingness to share their realities to inform this study (O'Leary, 2017, p. 212).

Key informants were recruited against two eligibility criteria:

1. A person with experience, knowledge and skills acquired through employment associated with a federal, state or local government organisation; examples being individuals working in emergency management as a practitioner or an allied support area such as a recovery centre, or being part of an activated recovery team posted to disaster-stricken sites; or
2. A person in a not-for-profit organisation such as a volunteer with the State Emergency Services; a member of a professional association (like an accountant, lawyer, small business advisor); a representative of a small business association linked directly to SBOs, or a for-profit 'resource' that contributes to SBOs in some way.

Convenience and snowball techniques were used to locate these participants (O'Leary, 2017). Referrals were via the supervisory team, colleagues at the QUT and personal networks. One key informant was recruited from a radio interview while others were located through cold calling via telephone. Personal referrals proved the most successful way to find suitable participants. Two insurance companies were contacted via telephone and an email. These initial attempts to engage insurance representatives failed to secure a discussion with a person with natural disaster insurance knowledge and experience.

#### **5.2.5 Profiles of recruited participants**

Approximately four months was dedicated to recruiting suitable participants for this study. A total of 24 participants were selected for interview comprising 11 SBOs and 13 key informants. Once recruited and interviewed by the author part of the data management process involved de-identifying participants, allocating each a pseudonym and distinguishing the two samples by labels: small business owner

managers and key informants. Participants and their pseudonyms are listed against participant type in Table 5.3. To discriminate between the three types of key informants, public sector or government informants were referenced as public sector informants, non-government private sector informants were identified as private sector informants, and non-profit sector participants were titled as non-government informants.

**Table 5.3** Research participants

<b>Participant type</b>	<b>Background</b>	<b>Pseudonyms</b>
Small business owners	Small business owner	Pippa, Erin, Lucas, Audrey, Chloe, Mia, Fleur, Sally & Sage, Harriet & Martin
Key informants	Public sector informants	Nick, Marc, Kate, Charlie, Ava, Emilio, Menzies
	Private sector informants	Tomas, Benita
	Non-government informants	Rueben, Roman, Grace, Matilda

To protect the confidentiality of participants and to reduce the possibility of matching settings with participants the LGA has not been disclosed for either SBOs or key informants.

### ***Small business owner profiles***

Table 5.4 captures background details on the 11 SBOs and their nine businesses. Information is provided across legal structure, workforce numbers (full-time, part-time, casual or permanent employees), location and the disaster event discussed. This is followed by a narrative description of each respondent. Most SBOs came from rural areas, and four of the nine were home-based businesses. Two businesses were owned by couples – Harriet and Martin, and Sally and Sage – who were interviewed together.

**Table 5.4** Small Business Owners' profiles

SBO	Legal	Industry	Employees	Location	Disaster event
Pippa	Sole trader	Retail	6 full-time 1 part-time	Urban/suburb Street front	STC Debbie 2017
Erin	Company	Professional	13 associates	Rural/digital Home-based	Brisbane floods Jan 2011
Lucas	Sole trader	Retail	1 casual 1 part-time	Rural Street front	Brisbane floods Jan 2011 STC Oswald Jan 2013
Fleur	Partnership	Retail	3 casuals	Rural Street front	STC Oswald Jan 2013
Mia	Partnership	Accommodation Professional Creative	Non- employing	Rural Home-based	Brisbane floods Jan 2011
Chloe	Company	Wholesale/retail	8 casuals 1 part-time	Peri-urban Home-based	STC Debbie 2017
Harriet & Martin	Company	Retail	2 casuals	Rural Street front	Inundation Floods 1999
Audrey	Company	Retail	1 permanent 7 casuals (approx.)	Rural Street front	Bushfire 2014
Sally & Sage	Sole trader	Wholesale/retail	Non- employing	Rural Home-based	Bushfire 2014

*Notes:* Information collected from transcripts and demographic data sheets completed by small business operators.

**Pippa:** Pippa is a sole trader situated in the main street of a central business area of a suburban shopping area. She has owned her own business for seven and a-half years, and beforehand managed businesses from the age of 19. Positioned on a corner block, the building is leased and has been problematic for this small business owner during tenure. The event discussed was Severe Tropical Cyclone Debbie (March 2017). The effect of cyclonic winds and the heavy rainfall caused extensive flooding throughout her premises, with most water coming through from the damaged roof.

**Erin:** Erin is one of the two directors of a leading research company. Erin has worked in the public and private sector before she and her brother established their company in 2009. The company works virtually with its client base Australia-wide and internationally. The company employs 13 associates who reside globally. The business is the second one Erin and her brother established. Their first business dissolved within a month of starting, after the Global Financial Crisis. The current business was

subsequently established and has survived since 2009. The home-based business was impacted by the Brisbane 2011 floods with the loss of infrastructural and power utilities.

**Lucas:** Lucas is a 42-year retail business owner whose enterprise is established in rural SEQ. His employment has been in the same industry as his small business. In 2005 he purchased the current business and the building. Lucas experienced two extreme weather events: the Brisbane floods of January 2011 followed by the impact of Severe Tropical Cyclone Oswald in 2013. Both events inundated his workplace. Following the second cyclone Lucas sold his business premises and now rents it. Lucas works full time in his business, employing two staff on a casual basis.

**Fleur:** Fleur has been in business since 1985 but has previously worked in the public sector. She sold her first business in 1991. In 1995 Fleur and her husband purchased three adjoining commercial buildings. Two were turned into a single retail shop. Each building was tenanted. Fleur experienced two natural disaster events, one as a landlord and the second as an owner-occupier of her own building. At the time of the first flood event in January 2011, the Brisbane floods, Fleur, at 56, and her husband had been in retirement for a month. The flood event caused extensive damage to the tenanted premises. Fleur and her husband repaired the building using insurance and personal funds. Fleur re-entered the workforce in November 2011 running a new business in the repaired building. In 2013 Severe Tropical Cyclone Oswald extensively damaged her business premises from inundation, exacerbated by inadequate repairs carried out from the first flood event.

**Mia:** Mia runs a home-based business she established following her family's move from Brisbane to the rural area in mid-2010. The couple ran a professional practice in Brisbane for over 20 years. They researched extensively to find the right property. Mia and her husband have had the experience of two flood events since living at the property, the Brisbane Floods of December 2010-2011 and Severe Tropical Cyclone Oswald in 2013. The Brisbane Flood event of January 2011 was the topic of discussion.

**Chloe:** Chloe's business began 20 years ago in response to a business need arising from her husband's small business enterprise. The property was purchased to diversify business operations. The business has experienced multiple natural disaster events with Severe Tropical Cyclone Debbie the event discussed for this study. At the time

of interview Chloe advised she was 62 and single-handedly manages the business supported by nine employees (mainly casually employed).

**Martin and Harriet:** Martin and Harriet are partners in their retail business located in rural SEQ which they purchased in 1994. Initially they rented the building to run their business, then purchased it in 2000. The building is in a known hazard-prone area subject to flooding. Both had professional careers before their retail careers. Their business and building were inundated in 1999 with flood waters reaching 21.95 metres high. At the time of interviewing the couple Martin is 73 and Harriet 68. They employ two casual staff. Martin had recently opened a second business due to the long-term vacancy of the building which they own.

**Sally and Sage:** Sole traders Sage and Sally operate a small enterprise originally owned and run by Sage's father. An established business for more than 40 years, Sage took it over from his father as part of family succession planning. Prior to taking on the business Sage worked in a trades-related role. In January 2014 Sally and Sage lost half of their production supplies in a bushfire that devastated bushland surrounding leased sites. The business is non-employing.

**Audrey:** In November 2013 Audrey took ownership of two businesses located in a relatively remote location. The purchase of both businesses was part of the contractual arrangements to secure the main business. "They were sold together as one" [Audrey]. Six weeks after moving into the businesses, in January 2014 bushfires threatened the community and destroyed bushland. The natural hazard event occurred during the peak trading season for community business and affected trade in both of Audrey's businesses. Audrey employs seven staff, one on a permanent part-time basis and the others casually.

### ***Key Informants***

Thirteen key informants voluntarily agreed to participate in the study. Their views and perspectives reflect their personal observations, experience and knowledge of the natural disaster phenomenon. Informed consent was obtained from each of the key informants. Key informants came from a combination of five urban and rural LGAs. One key informant was recruited from interstate with a national focus. A brief profile of each key informant is collated in Table 5.5. This is followed by a narrative description about them.

**Table 5.5** Key informants' profiles

<b>Informant</b>	<b>Relevant experience</b>	<b>Small business experience</b>	<b>Location</b>
<b>Charlie</b>	Public sector – disasters	Not specified	Urban
<b>Ava</b>	Public sector – disasters	Not specified	Urban
<b>Tomas</b>	Business sector, consultancy services. Lost business from disaster event	Small medium sized business owner (89 employees)	Urban
<b>Emilio</b>	Public sector disasters	Not specified	Urban
<b>Nick</b>	Public sector – disasters	Former small business owner	Urban
<b>Menzies</b>	Public sector – business assistance	Nil	Urban
<b>Kate</b>	Public sector – disasters	Not specified	Rural
<b>Marc</b>	Public sector – emergency management	Nil	Rural
<b>Benita</b>	Private sector – public sector	Small business owner non-employing -15 years	Urban
<b>Rueben</b>	Private sector, community development	Non-profit, non-employing owner six years	Urban
<b>Roman</b>	Private and third sector experience	Non-profit business, 20+ employees. Managed medium to large corporations affected by natural disasters	Urban
<b>Grace</b>	Non-profit sector, direct experience with SBO, policy, and advocacy	Experience with family-owned business	Rural
<b>Matilda</b>	Non-profit sector direct experience working with policy, and advocacy	Ran own small business	Urban

**Charlie and Ava:** Both have worked across urban and peri-urban communities supporting regional economic initiatives developed as part of the response and recovery measures to natural disasters. They explored key local business development activities and programs to stimulate local business activities in the aftermath of a natural disaster and issues facing the small business sector relating to natural hazards.

**Tomas:** Tomas owned a medium-sized business impacted by the Brisbane Floods in January 2011. He is an entrepreneur who has used his past experiences and skills to provide support and advice to other business owners on business development. Since the loss of his business in 2011 he has opened three small, non-employing enterprises with his partner.

**Emilio:** Emilio understands public sector natural disaster deployments across Queensland. He has knowledge of community recovery centres and offers insights into

details about the types of investment state and federal governments make to building infrastructure to support local communities in the aftermath of a disaster.

**Nick:** Nick has firsthand experience as a small business owner prior to having a role with emergency management application. He has been involved in activities when natural disaster activations have been declared. In addition, he has knowledge of economic development strategies to enhance small business growth at the grass roots.

**Menzies:** Menzies has worked in rural and urban settings involved in financial and banking services. His first-hand experience working with local communities enabled him to provide insights into state and federal government assistance. He provided knowledge and insights about grants and loans offered to SBOs under the NDRRA scheme.

**Roman:** Having worked in the private sector running medium-sized organisations Roman has shifted his experience from the private sector to the not-for-profit sector. He works directly with small, medium-sized and larger business, especially at times of natural disasters.

**Kate and Marc:** Both informants have worked in different areas of Queensland. At the time of interview, the two were living and working in a rural area of SEQ. Kate works with small business on economic development issues while Marc has emergency management knowledge.

**Benita:** Recently Benita changed careers after working in her own non-employing small business for 15 years. Over time she has helped a wide range of business owners clean up after natural disasters, but also spoke about her knowledge and experiences linked to natural hazard supports and information.

**Rueben:** Having work experience in the private sector before establishing a not-for-profit business, Rueben now works extensively with local communities. His business is non-employing and is operated with his wife. In 2017 his business was deployed to support various flood-affected small businesses following the inundation from Severe Tropical Cyclone Debbie.

### 5.3 DATA COLLECTION

Data were collected in two ways. First, data were gathered through interviews with participants while the second strategy involved data triangulation. Both interviewing

participants and data triangulation are consistent with a qualitative methodology and are recognised methods suited to the critical realism paradigm (Guba & Lincoln, 1994; Healy & Perry, 2000; C. Perry et al., 1999). In the next section the interview techniques employed for this study are discussed. Two distinct semi-structured interview approaches were used. The critical decision method (Klein, Calderwood, & MacGregor, 1989) was administered to elicit information from SBOs while a semi-structured interview was applied to key informants.

### **5.3.1 The critical decision method to gather information from SBOs**

The critical decision method (CDM) was used for gathering information from SBOs (Klein & Armstrong, 2005; Klein et al., 1989). The CDM is a knowledge elicitation tool developed to explore cognitive tasks and functions of individuals within their natural environment (Crandall et al., 2006). The interview uses a series of probes to obtain information from an interviewee about a memorable and specific decision event. Modelled on the critical incident technique by Flanagan (1954) with its focus on a critical incident, the CDM emphasises critical decisions during non-routine or emergency situations (Hoffman, Crandall, & Shadbolt, 1998; Klein et al., 2010).

The CDM has been used in numerous domains. Historically Klein and colleagues tested its application in the firefighting environment (Klein et al., 2010). Hoffman et al. (1998) declared the rigour of CDM had been tested on more than 30 research projects involving corporations, critical care nurses, computer programming, military operations and laboratory medicine. In recent years the CDM has application in e-commerce (Resnick, 2001), leadership and outdoor education (Boyes & O'Hare, 2011; Boyes & Potter, 2015), employee promotion decisions (Armenis & Neal, 2008), missing persons (Harrington, Brown, Pinchin, & Sharples, 2018), nursing education (McNelis, Ironside, Zvonar, & Ebright, 2014), cockpit decision making (Plant & Stanton, 2013) and emergency services physicians (Sedlar, 2017), highlighting its versatility and adaptability. CDM application to natural disaster research as distinct from emergency management studies of first responders of ambulance, police and firefighters is less evident and appears non-existent for examining SBOs' decision making in the natural disaster context.

As the intention of this study was to gain insight into the decisions of SBOs in their work domain the CDM was considered a suitable method to elicit the relevant knowledge. It is flexible, it can accommodate non-routine events and it has been tested



under various naturalistic conditions and applied to many domains (Crandall et al., 2006; Hoffman et al., 1998; Klein & Armstrong, 2005). Further, it addresses decision making as described by the RPD model (Klein et al., 1989), providing a robust link to the theory. Since the CDM emerged from the RPD model the method was considered well-placed to be applied to the natural disaster's environment. Testing the CDM in the disaster context and on a sample of SBOs will make an original methodological contribution to research.

### ***Steps in the administration of the CDM***

The CDM is a retrospective interview protocol using a series of cognitive probes to draw out information about a crisis (Klein et al., 1988, 2010). The administration of the interview protocol follows a sequence of steps. The first step starts by the SBO selecting a memorable natural disaster event that impacted their business and they exercised their decision judgment. The next step is an account of the event including timelines and contextual issues. Then probe questions delve into the incident and on decision points. Decision points refer to the juncture of alternative courses of action (Klein et al., 1989). The probes explore *in situ* information about the cues, goals, expectancies, background knowledge and time pressure for decision making along with SBO justification for decisions and any consequences (Hoffman et al., 1998; Klein et al., 1989). Lastly, a review of the incident, searching for whether other alternatives or decision choices were possible or considered at the time.

Advantages of the CDM lie in its flexibility. It can accommodate variations to the core procedures based on the research aim and circumstances (Klein & Armstrong, 2005). It facilitates the discovery of “perceptually based cues that are difficult or unnatural for people to articulate” (Klein et al., 1989, p. 465), being part of their tacit knowledge developed over time. The semi-structured format allows latitude to explore content as it arises in the natural flow of a participant's conversation, which permits leads to be followed (Boyes, Potter, Andkjaer, & Lindner, 2018). Hence the semi-structured nature enables information mining that would remain undisclosed or hidden if a tightly-structured and controlled interview format was followed (O'Leary, 2017, pp. 239-240).

Several shortcomings are recognised with the CDM. It is known to be time-consuming, taking up to two hours or more to administer (Hoffman et al., 1998). Klein and Armstrong (2005) have offered adaptations to the practice to reduce time

conducting the CDM. They suggest modifying the timeline, adapting the probes or reducing the number of probes to target the research questions. It is also recommended the investigator who administers the CDM have experience in using the tool (Crandall et al., 2006; Klein & Armstrong, 2005). In response to this latter recommendation the researcher acknowledges the tool is a new skill area to build competency. However, the researcher felt past experiences working in the field of alternative dispute resolution with its emphasis on reflection and listening skills of people's stories would translate to eliciting accounts of business owners' decision situations. Additionally, extra reading of literature was undertaken specific to the CDM to create confidence in applying the tool.

The CDM typically involves a small sample, as few as four participants, hence it remains unrepresentative (Wong, 2006). This study also uses a small sample. Because the present study is exploratory and a new domain the focus here is on gaining insights and discovering what the issues and complexities are that surround SBOs' decision making in a novel context. Findings of this study can therefore form the basis for future research.

### ***Salient lessons learnt from the administration of the CDM***

With respect to the administration of the CDM for this study the researcher points to modifications made when applying the protocol to SBOs (Klein & Armstrong, 2005). Time constraints meant that the decisions discussed with SBOs centred chiefly on one main decision [Fleur, Pippa, Erin], the exceptions being Harriet and Martin, Chloe and Lucas. These business owners provided insights into two elements of their decisions, *before* the impact of the flooding events and in the immediate *aftermath* of the disaster *during* the clean-up.

Several lessons were gained from working with the CDM. These are mentioned below. First, the role of a neutral interviewing environment without phones and other interruptions. A business owner's office is not always an ideal space to conduct the critical decision method process. Since each small business office is unique the author was faced with workplaces that were unpredictable and uncontrollable settings. This necessitated improvising in the different settings.

Second, time was important. Time management to interview SBOs using the CDM can take up to two hours. As time is a scarce resource for business owners it

needs to be respected by researchers, consistent with the findings in Chapters 6 and 7. As business owners had competing tasks the CDM was modified to manage presenting worksite constraints (Klein & Armstrong, 2005). Consequently, short cutting the sweeps, limiting probe exploration and minimising the depth of knowledge discovery was necessary (Klein & Armstrong, 2005). The CDM therefore was potentially compromised, thus noted as a limitation in this research.

Third, working with SBOs about natural disasters can reveal bottled-up emotions and raise peripheral matters beyond the focus of the discussion. This study highlighted that SBOs have few opportunities to voice their perspectives and frustrations or talk about the impact of a disaster at a personal level. Emotions are often repressed as business owners' focus is about protection and preservation of their livelihoods, overriding the impact of the disruption, the trauma, exhaustion and stress that a disaster causes them. They get on with the job of running the business and do "what it takes" to do so (Headd, 2003). Emotional factors may influence the quantity and type of data collected from the CDM. Notably, Wong (2004) cautioned in respect of the RPD/CDM interview data generated, with much of the data proving unrelated or redundant to the research questions. Further, he states the meanings attached to a response will be context-dependent (Wong, 2004).

The preceding caveats are reported as useful contributions to be mindful when collecting CDM generated data. However, for reference, based on the lessons above, it is suggested two interviewers are encouraged to be involved in the administration of the CDM. Training is undertaken by the interviewers to develop the techniques to use the tool. Especially in relation to structuring the interview session to proficiently elicit knowledge. This will help reduce extraneous material (Klein et al., 1989), and manage the 'drift' and 'rabbiting on' (Wong, 2004) that can happen. Further, confirm the configuration of the worksite as to its suitability for a confidential interview and minimal third party disruption. Early identification of a workplace that is impractical for an interview can be remedied by arranging a meeting in a public place like a library room or after business closing hours. Last, allocate sufficient time to finish the CDM sweeps.

### ***CDM protocol for SBO***

The protocol developed for administering the CDM to SBO was based on questions and probes designed by Klein et al. (1988), Hoffman et al. (1998) and Gazarian (2013).

The protocol probes were modified to suit the small business environment emphasising natural disasters. The full interview protocol is at Appendix A with a sample of the questions presented at Table 5.6.

**Table 5.6** SBOs critical decision method interview protocol

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**Situation**

Can you begin by telling me about your business and the background to the natural hazard event/ other business crisis you have had direct experience of over the past 20 years?

Can you describe the situation – when the event happened, the type of event, what was going on before the situation occurred (context, general environmental factors, what were you aware of)?

What were you doing?

What were you hearing, seeing, noticing at the time?

Were you alerted to the seriousness of the situation – and how did this happen?

What did you do at the time when you realised the seriousness of the situation?

What was the outcome of your decisions?

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**Pre-planning and contingency measures**

Had you anticipated the possibility of this type of problem when you were developing your business plan, or general planning you do for the business?

Tell me about the type of contingency measures you have in place, to protect your business.

How have your contingency measures been implemented?

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### 5.3.2 Eliciting information from Key Informants - semi-structured interviews

A semi-structured interview protocol was developed for the Key Informants to answer the third research question regarding the affordances and assistance provided to SBOs by political and other stakeholders (non-government) when a natural disaster happens.

The choice of a semi-structured interview relates to its flexible and looser structure as well as its ability to accommodate emergent and unexplored areas by being able to respond to the shifts and flow of an interviewee's conversation (O'Leary, 2017). Having an interview structure that can be responsive to individual differences and situational changes is advantageous (Patton, 1990) because the interviewees in this category can explore a wide range of issues. They are also informants with something of interest to say, especially as they hold knowledge and experience which the researcher, as an 'outsider', has no access to or experience of (Hesse-Biber, 2017). Therefore, the benefits of a semi-structured interview lie in its ability to deviate from the set questions and delve into tangent areas that are relevant or interesting to the topic area.

Despite the flexibility of a semi-structured interview shortcomings are inherent in this interview type. The application of a semi-structured interview can become problematic where a wide range of informants 'fit' into the recruitment category and the process can generate diverse situational information. The approach can elicit many responses and different perspectives which creates substantial data to be organised and analysed (Patton, 1990).

Nevertheless, acknowledging the previous points and the potential volume of data, the nature of a natural disaster is recognised as one of complexities. There exist numerous interrelationships across the multiple levels of government (e.g., roles and responsibilities of each tier of government, legal and financial obligations), third sector organisations (i.e., Chambers of Commerce, community groups) and the private sector such as the insurance industry. Getting multiple perspectives from a range of key informants helps to identify the issues facing political entities with respect to small business, and acts as a confirming or disconfirming source of information that contributes to triangulation.

The complete semi-structured interview protocol developed for key informants is located at Appendix B with a sample of the questions provided at Table 5.7.

**Table 5.7** Key informants interview protocol

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In your role as ...

...tell me about the type of information you provide to small business owners around disaster risk reduction management and the disaster cycle components (that is Prevention/mitigation, preparation, response, recovery)?

From your perspective, observations, and experience...

How well informed are the local small business owners before you provide the information?

How is this information provided?

How frequently is this information provided?

How frequently do you 'educate or inform' the small business community?

What information do you believe supports the current approach to help small business owner's make sound business decisions to influence their survival?

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### 5.3.3 Participants interview program

In addition to the interview protocols developed above an interview schedule was arranged in consultation with each participant once their eligibility and interest to participate was confirmed. Upon agreement to an interview time with a participant an email was sent containing documents and confirmatory information. Emails included details of the interview time, the venue and the researcher's contact detail should they need to change the arrangements. A copy of the interview questions was also attached, corresponding to the participant group, and copies of the University-approved ethics forms<sup>9</sup>: *Participant Information Sheet* (relevant to their category of SBO or Key Informant); *Expression of Interest*; and *consent*.

Interviews were conducted face-to-face at a location convenient to all interviewees. The researcher attended SBOs' home-based business, street-based business or a public venue like a community library. Similarly, Key Informants' interviews took place at their workplace using private meeting rooms or at a public venue. The use of private meeting rooms protected the confidentiality and privacy of the participants who offered their personal perspectives about the areas of which they had knowledge. Lucas, Fleur, Grace and Matilda were interviewed away from their workplaces in a neutral setting.

Interviews all followed the same process. At the commencement of each interview participants were given a copy of the Participant Information Sheet, the consent form, Expression of Interest form and the interview questions. Each form was

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<sup>9</sup> Documents provided to research participants were cleared as part of the Ethics approval process. Refer to QUT Human Research Ethics Committee approval number 1700000546.

reviewed by the researcher emphasising the voluntary nature of involvement in the study and participant's right to withdraw at any time.

Mention was made to audio-record the interview with the author seeking participant written consent to do so. Each participant voluntarily signed their consent form. Then the researcher gave an overview of the study project with a proposed plan as to how the interview would proceed. An opportunity to ask questions or seek clarification of any matter before proceeding with the interview was offered. Once interviewees confirmed they understood the process and were ready to start the interview began with participants providing an overview of their background, experiences and knowledge relevant to this study. From this introductory background the interview served as a "construction site for knowledge" (C. Marshall & Rossman, 2011, p. 142).

Regarding key informants the interview protocol formed the basis to delve into their personal accounts of how their role links to natural disasters and the ways in which they support small business. Importantly, their experiences, perspectives and interpretations as they relate to research question three were explored.

Small business owners were asked to nominate the natural disaster event they wished to discuss. Consistent with the CDM the first 'sweep' involved getting details about the nominated natural disaster, being the background to the event, with a timetable of what occurred. Interestingly SBOs spoke of multiple natural disasters as each event had cumulative implications for them. The SBO recalled the events leading up to the natural disaster, what decisions they were making, how they were feeling, thinking, and their concerns, insecurities and uncertainties at the time. Business owners spoke in general terms in relation to time rather than in minutiae details of time-event relationships. During the interview, across the third 'sweep', SBOs explored their situation assessment and the environmental scanning of cues and information they used to make decisions, including the warnings they were heeding at the time. Closer probes were asked where inconsistency was found in any discussion.

After the interview the researcher provided a summary of the actions to follow from the meeting. Participants were told a copy of the transcript would be emailed to them within 24-48 hours with a request to verify the details of the interview and for any feedback, comments or amendments they wished to make. Also, mention was made that identifying names, places and 'things' in the transcript would be removed

for confidentiality reasons in the final thesis. Finally, participants were asked if they had any questions, were thanked for their time and willingness to speak with the author before closing the session. Contact details of the researcher were referenced if participants wanted more information.

Small business owners completed a demographic information sheet collecting general details about their business and strategies used for disaster mitigation and preparation (refer to Appendix C Demographic Data). The form was completed on a voluntary basis.

Face-to-face in-depth, semi-structured interviews of between 45 and 80 minutes were held with 24 purposively-selected participants between August and November 2017. Participants Ava and Charlie and Kate and Marc were interviewed together for convenience as they respectively had a shared knowledge base from their experiences at the same workplaces. Couples Harriet and Martin and Sally and Sage were interviewed as joint business partners.

This study did not form part of any commissioned or funded research project. Financial and other incentives were not provided for participation in the research.

#### **5.4 DATA TRIANGULATION**

In addition to the interviews a second method applied in this study is data triangulation. Triangulation involves combining the same set of data gathered from several sources to realise the research objectives and contribute to answering the research question (Kumar, 2014). Gathering different sources of data enables the researcher to corroborate, confirm or disconfirm the information they gather to substantiate the research findings (Kumar, 2014). Convergence of research findings is sought as an outcome for the researcher.

From a practical perspective triangulation can be achieved in various ways and is used to strengthen the research findings (Patton, 1990, pp. 187-188). These include a research design that combines multiple qualitative methods in a single design, mixing purposive samples, design and analysis and providing multiple perspectives. The mixing of data sources via triangulation enhances the robustness of the research and assists in countering threats to validity (Robson, 2011).



Data triangulation for this study incorporated two interview strategies (CDM and semi-structured interview) with two types of participant groups, SBOs and Key Informants. Both groups bring contrary experiences and first-hand accounts of natural disasters along with divergent interests, knowledge, roles and responsibilities to the study. Small business variation was sought including sizes (non-employing, micro-and small businesses) and a range of industry sectors and geographic locations (rural, peri-urban and urban). Multiple natural hazard events were also reported in the cross-sectional study (flooding, heavy rainfalls, bushfires).

Key informants were drawn from various work experiences and backgrounds. Several coincidentally had first-hand experience as a small business owner-operator before moving to their public or non-profit sector roles [e.g., Roman, Rueben, Benita, Mia, Nick].

Additionally, official documentary evidence was collected. This included LGA maps, LGA Disaster Management Plans, business planning templates and business continuity plans (e.g., checklists for bushfire and flooding). The *Queensland Disaster Management Act 2003* and Queensland Prevention, Preparedness, Response and Recovery Disaster Management Guideline were also sourced to corroborate data. Accessing official publications confirmed information, used to cross reference details and clarify interview transcripts comments. Further it was used to fill in gaps in verbal data, to clearly explain the roles and responsibilities of different stakeholders across government, non-government and community members and to clarify terms/definitions being used. The official documents ensured greater accuracy when writing up the thesis

Official evidence was sourced about disasters via online websites across multiple tiers of government. This included local, state and federal government websites. With respect to local government websites (one example, Redlands City Council at [www.redland.qld.gov.au](http://www.redland.qld.gov.au)), they release up-to-date, practical information to support the LGA community prepare for, respond to and recover from a disaster; provide flood maps; list the official radio stations with responsibility for disseminating updates on disaster events; and social media to respond to currency and speed of information. Accessing LGA websites provide the evidence to clarify information and resources available to community members.

The Queensland Government websites sourced were associated with departments of small business, community services and the Queensland Reconstruction Authority. At the Commonwealth Government level various departments and agencies were reviewed. Examples include the Department of Home Affairs which provide information on NDRRA, and the Bureau of Meteorology ([www.bom.gov.au](http://www.bom.gov.au)) as Australia's national weather and climate agency. The BOM was interrogated to check climate and weather related matters including cyclone events (Tropical Cyclone Knowledge Hub); information about historic cyclones to confirm data and check cyclone names. As well, the Australian disasters and resilience organisation also known as Australian Institute of Disaster Resilience (AIDR) ([www.aidr.org.au](http://www.aidr.org.au)). The AIDR shares knowledge and resources to facilitate informed decision making and to strengthen Australian communities resilience to disasters. The website was used frequently to refer to the glossary of terms, search the Australian Handbook collection notably for current data on the Australian Emergency Management Arrangements, and approaches to Community Engagement for Disaster Resilience; and to access the peer reviewed Australian Journal of Emergency Management.

## **5.5 DATA ANALYSIS**

Marshall and Rossman (2011) describe data analysis as the “process of bringing order, structure and interpretation to a mass of collected data” (p. 207). This section turns to data analysis. Thematic analysis as described by Braun and Clarke (2006) was followed and is described next.

### **5.5.1 Thematic analysis**

Thematic analysis as outlined by Braun and Clarke (2006) was applied for the analysis of interview transcripts. Thematic analysis is suited to a realist paradigm with data contributing to theorising about motivations, experience and meanings participants offer to the phenomenon under investigation (Braun & Clarke, 2006). Thematic analysis involves searching across a dataset to find the occurrence of patterns of meaning that capture something of importance to the research questions. Patterns of meaning are also known as themes (Braun & Clarke, 2006; Gray, 2014). Further, the prevalence of the patterns or themes can occur on multiple occasions or a few times in the data, although the number is not always important. Rather, it is what the theme

may contribute to the overall research questions that is important (Braun & Clarke, 2006; Gray, 2014). In this study inductive thematic analysis is followed with themes emerging from the data, that is data-driven (Braun & Clarke, 2006, p. 88). Applying an inductive approach means the coding of the data has no pre-conceived theoretical structure imposed on the process nor by the researcher (Braun & Clarke, 2006).

As listed in Table 5.8 Braun and Clarke’s (2006) thematic analysis is carried out across six steps. Thematic analysis starts with familiarising oneself with the data which begins once the interviews have commenced. This first step is described fully under *Data Management* next, and then the subsequent steps are discussed.

**Table 5.8** Stages of thematic analysis (Braun & Clark, 2006)

<b>Step 1</b> - Familiarise yourself with the data	<b>Step 2</b> - Generate initial codes
<b>Step 3</b> - Search for themes	<b>Step 4</b> - Review the themes
<b>Step 5</b> - Define the themes	<b>Step 6</b> - Write up the themes

### *Data management*

The initial stage of data analysis focuses on data preparation of the interview transcripts. Several activities were involved. First, prior to conducting interviews a third-party transcription service based in the United States of America was engaged to transcribe the audio-recordings with a transcriber agreement signed. Once the interview schedule was finalised and instituted, following each interview the audio-recording was uploaded to the transcription service. A turnaround of completed transcriptions of approximately 24 hours or less was experienced for 98 percent of transcripts. Upon receipt of the transcript the researcher sent an email to the interviewee containing the electronic copy of their transcript for verification purposes. The email reiterated a message of thanks and a request to review the transcript with any comments documented in a return email. A single request was received for amendments to be addressed. This was completed as part of the data cleaning process described below.

Second, the researcher de-identified all transcripts and applied a pseudonym to each participant. De-identification of towns, creeks, bridges, other people’s names and place names was carried out across each electronic transcript. As each transcript was read the original audio-recording was played. This approach had the benefit of checking the accuracy of the transcriptions on a line-by-line basis. A cleaning process was instituted with rectification of words incorrectly spelt (e.g., BOMB for Bureau of

Meteorology, BOM) or a sentence that was distorted or reported as ‘inaudible.’ Further, replaying the audio recording offered more immersion and familiarisation with content (Braun & Clarke, 2006, p. 87).

Third, while listening to the recordings and reviewing the transcripts the researcher wrote notes and memos on the right-hand side of each page. The strategy acted as a form of ‘field notes’ and was a useful way to recall the interview with a mental image of the interviewee, noting the tone of their voice when responding to interview questions, visualising their gestures, facial expressions and emotional reactions. The process offered the opportunity to connect participants’ comments and ideas to each other, whether convergent or divergent views. It also provided early insight into several ideas and themes emerging from the data. Additionally, ‘penny dropping’ moments were highlighted in colour with a linking note, as were memorable quotes.

Finally, a checking process was carried out in addition to the data management and cleaning process. Notes prepared prior to the interview, pre-interview comments and post interview reflection sheets were reviewed for completion. The sheets were written up on the day of an interview. Recordings, notes, transcripts and SBO’s demographic sheets were filed and labelled then stored electronically in separate locations.

### ***Coding***

The second step in thematic analysis involves coding. Braun and Clarke (2006) consider codes are the basic raw data or information that is considered in a meaningful way by the researcher. Codes identify interesting features found in the data (Braun & Clarke, 2006, p. 88). The process of coding involves the means by which one identifies ‘recurrent words, concepts and themes’ throughout the raw data (Gray, 2014, p. 680) and forms part of the analysis (Miles & Huberman, 1994). Coding was carried out in an inductive manner, meaning that codes emerged out of the data, ‘data-driven’, as distinct from being influenced and shaped by theory, ‘theory-driven’, and *a priori* codes (Braun & Clarke, 2006). Data-driven coding was preferable because the approach provided the opportunity to explore broadly the decisions and decision processes of SBOs and gather affordances provided through key stakeholders. This facilitated the capturing of interesting aspects of the topic rather than being restrictive and narrowly focused (Braun & Clarke, 2006). The approach was especially important

as the decisions and decision processes of SBOs are under examined, likewise the affordances of political institutions of governments and non-government entities.

A combination of electronic and manual coding was carried out across each interview transcript. First, codes were assembled into an electronic word document table containing details of the code, source (Participant group – *SBO-Key Informant name*) and the code extract. A vignette example for key informant Menzies is at Table 5.9. while Table 5.10 is an example of SBO Fleur’s codes and code extracts.

As the two examples of the code lists reveal (Table 5.9 and Table 5.10), a notional category was included to represent the type of business capital the code closely resembled. Table 5.9 shows Menzies’ codes contains information about an element of political capitals concerned with financial relief available to small businesses in the form of a low-interest concessional loan. Also, a code was associated with workforce signifying the place of trained assessors who help carry out and complete assessments for grants and/or loan applications lodged by business owners. In contrast Table 5.10 links to Fleur and indicates she was a recipient of a natural disaster loan. A loan ‘fits’ two capitals: it is a source of political capital, provided through government/political instrumentalities to SBOs; and it is a source of financial capital to the business owners (debt capital), being a transfer of funds to the business owner from taxpayer-funded assistance to rebuild and repair their premises or replace equipment. These nuanced distinctions in the business capitals were resolved as part of code sorting.

**Table 5.9** Step 2 – Key Informant code list

Code	Source	Capital	Quotation
<b>Relief – Grants Assistance</b>	Menzies	POLITICAL	“At a minimum those grants are open for six months ...could be a shortage of tradesmen, infrastructure not repaired, the insurance claims take some time to settle.”
<b>Workforce</b>	Menzies	POLITICAL	“Have a register of people that have financial and now analytical skills and assessment skills. Tap into Retired Bankers Association.”

**Table 5.10:** Step 2 – Small Business Owner code list

Code	Source	Capital	Quotation
<b>Loan – extra financial help</b>	Fleur	FINANCIAL POLITICAL	“They came out and gave us a loan of \$130000 - ...that was on the second flood.” (2013)

<b>Multiple flood events</b>	Fleur	NATURAL FINANCIAL	“We actually traded for 13 months before we got the next one and then that took us another 10 months to get over that.”
<b>Insurance</b>	Fleur	FINANCIAL POLITICAL	“The insurance company argued, it wasn't a flood. We got no money from them.”

After completing the coding for the two population samples the codes were individually cut up, manually sorted then allocated (Bernard & Ryan, 2003) into piles according to the business capital of human, financial, natural, manufactured, social and political capitals. This helped establish a preliminary overview of the patterns emerging and the relationships between the patterns within a capital and across the capitals. Being an early activity, it illuminated the tensions and conversations that were existing between the two population groups for the study, and the emergence of contrary stories and experiences of the participants.

Steps three to five were carried out as part of a cyclical process of refining the sorted codes into the six business capitals to identify the sub-themes (Saldana, 2016). Data codes found to offer information around a similar theme were grouped together. Therefore, as this study was seeking to report the findings organised around the six business capitals each capital provided the overarching theme into which the codes were allocated. Each ‘capital’ definition<sup>10</sup> helped guide a codes allocation.

A continuous process of refining the sub-themes occurred as the data were re-examined and codes were reviewed along with the data extracts. Duplications were resolved through the fine-tuning iterative processes. Apart from the business capitals as the conceptual organising framework the researcher kept forefront the purpose of this study, the research questions, the literature on natural disasters, business and small business, the RPD lens along with official documentation as the anchor to inform the analysis of the codes and data extracts.

Not all the codes fitted easily into the clustered groups. Those that were found to be peripheral to the research questions were one-off comments or redundant, and were set aside (Bernard & Ryan, 2003). Once the key candidate sub-themes were finalised they were reviewed for their internal consistency to each other. Each business capital theme and its sub-themes were checked for their distinctive insight and

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<sup>10</sup> Refer to List of Definitions for each capital definition

meaning they contributed to the SBO story about their decisions and decision processes during a natural disaster and the affordances available to them.

When this process was completed two global themes were derived for this study to explore small business owner decisions and decision processes in the context of a natural disaster. These are: *Minding my own Business* and *Institutional Inputs*. A brief description of each overarching theme was drafted to reflect the essence of what each theme meant and its content (Braun & Clarke, 2006). Beneath these overarching themes the six business capitals of human, financial, natural, manufactured, social and political formed the main sub-themes which support a series of sub-category themes to address the three research questions for this study.

In relation to the conceptual framework of business capitals *Minding my own Business* embeds human, natural, manufactured, financial and social capitals with the respective findings while *Institutional Inputs* brings together the political capitals data and findings from key informants with knowledge and understanding of disaster management affordances for small business. A fruitful contribution of the conceptual framework is that it accommodates multiple voices, multiple perspectives, temporally and spatially, that can be reported in a layered fashion.

## 5.6 TRUSTWORTHINESS

The trustworthiness of research depends on the quality of its methods used (Mays & Pope, 2000) and refers to the confidence or trust one has in the study and its findings. In discussing trustworthiness of qualitative research, researchers are required to produce reputable results and provide details on how the results were achieved. According to the critical realist paradigm research evaluation involves four criteria, namely credibility, dependability, transferability and confirmability as noted in Table 5.2. The following section illustrates how this research has met each of these conditions. Trustworthiness in qualitative research has equivalence in quantitative research (Bryman, 2016).

*Credibility* relates to the positivist notion of internal validity and focuses on building confidence in reporting the phenomenon accurately (Shenton, 2004). Several approaches to ensure credibility were observed for this study. These include a range of informants, several methods (interviewing, official documents), selecting participants willing and interested in the study, and respondent validation. The study

sample used purposive sampling. One individual self-selected to participate. Recruitment involved individuals selected from a range of LGAs in SEQ (and one interstate) from rural, urban and peri-urban locations. Businesses were of different sizes (non-employing, micro and small), from several industry sectors with multiple experiences of natural disasters. Also, key informants came from backgrounds with local and state government experience bringing knowledge about the policies and processes relevant to small business and natural disasters. Non-government sector participants demonstrated direct involvement with small businesses. Therefore, bias was minimised through triangulation of participants in the study. At the same time the interweaving of multiple voices added rigour to the study. As each person recruited for the study has a background in the phenomena each could speak with authority and insight, strengthening the authenticity of the study.

Because the study involved multiple voices a multifaceted understanding of the phenomena was obtained. Similarities and differences in viewpoints help build patterns and themes and permits verification of perspectives. Verification was enhanced with triangulation of official documents. Use of official documents provides a wider context beyond participants to facilitate proof and rigour in the data (Shenton, 2004).

Triangulation can be in the form of different methods (Shenton, 2004). This study used two types of interviewing techniques, the CDM for SBOs and semi-structured interviews for key informants. The goal of having two approaches was to maximise collecting as much information as possible in a flexible and responsive manner to achieve the aims of the study. Additionally, official documents, legislation and website searches were also sourced and referenced where relevant to strengthen the data,

Each participant was personally contacted prior to selection for the study. This action allowed the researcher to gather preliminary details about the individual in relation to the topic. As well, the researcher was able to assess the person's suitability for the study and their genuine interest in it. At the time participants were also advised of their rights in relation to consenting to the study and the option to withdraw at any time. After initial contact with each participant an electronic copy of the ethics forms



was emailed to them <sup>11</sup>with confirmation details of the interview time, venue and the researcher's contact details. At the interview participants were again provided a copy of the ethics forms and reiterated their rights of voluntary participation in the study. Participants demonstrated honesty, frankness, openness and transparency in their contributions to the study (Shenton, 2004), enhancing its credibility. Finally, participants were given copies of their interview transcripts with an opportunity to confirm the content. This allowed participants to amend errors in their transcript or to ensure the content adequately reflected their intentions (Shenton, 2004).

*Dependability*, which parallels with reliability in quantitative research, considers whether the study, if repeated, would achieve the same results (Shenton, 2004). This criterion is concerned with creating an audit trail (Bryman, 2016) on the steps taken to collect and analyse data (Shenton, 2004). The audit provides a record for others to replicate the study. The procedures followed in this study are reported in this chapter and throughout the thesis. The research design and decisions related to sampling, methods, data collection and data analysis have been documented. Tables and diagrams are included to provide a visual representation of information and to clarify textual descriptions. Attachments in the appendices contribute additional information to assist reproducing the study.

Replication of a study is not without its criticisms, and is recognised to be problematic (Kumar, 2014; Shenton, 2004). Despite the points reported above qualitative research promotes flexibility and freedom, and consequently it will be difficult to repeat this study. Moreover, reproducing this study is questionable as the nature of the study is a natural disaster. Natural disasters are unpredictable, uncertain, uncontrollable and occur on wide-ranging scales. Often they produce secondary hazards in a single event, for example heavy rainfalls can create flood inundation, storm surges and cyclonic winds. They occur over different times and space. Furthermore, the population samples of small business, their size category (non-employing, micro, small and home-based), their heterogeneity, capitalisation and the background of the owners each separately add to the variables if intending to replicate this study. Such factors will inevitably impact on the results of a study of this kind and its reproduction.

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<sup>11</sup> That is, the participant information sheet, interview questions and consent form.

A further caveat for repeating this study is the approach taken to recruit the samples. Recruiting SBOs is challenging as mentioned elsewhere in this chapter. Social media approaches to communicate with business owners may prove more effective to increase participation although, as found at Chapter 7, the use of digital and social media by the small business sector is not clear cut. What does appear to be important working with SBOs is trust. Having a personal referral or making direct personal contact with business owners was the most reliable way to obtain participants in this study. It is acknowledged recruitment of an appropriate sample is a significant issue for research in the disaster and business field and, therefore, future replication of the study.<sup>12</sup>

*Transferability* is associated with external validity and generalisability (Bryman, 2016; Miles & Huberman, 1994), and looks at the ability of this study to be able to transfer to other situations (Shenton, 2004). This study as a qualitative inquiry was exploratory and set out to examine a complex area of small business decisions and decision making and how their business capitals are impacted. The researcher's intention was on understanding the complexity experienced by SBOs and the influences of other stakeholders in the context of a natural disaster over statistical generalisability to broader populations. This study had a limited sample of 24 participants, 11 of whom were SBOs. Therefore, the study has contributed 'thick descriptions' of the narratives of participants (Gray, 2014), presented a wide range of sub-themes and provided extensive contextual background to provide readers with insight into the phenomenon. Consequently, the study offers 'baseline understanding' of the phenomenon in which they can compare the applicability of this study to similar contexts (Shenton, 2004).

*Confirmability* corresponds with objectivity (Shenton, 2004). Here the researcher is required to reflect as accurately as possible on the opinions and experiences of their participants rather than their personal preferences and biases. Several activities were undertaken to reduce researcher bias in the findings of this study and are reported next. From the outset of the study, I declared my motivations for doing the research, noting I have friends and relatives in small business. Field notes and pre-and post-interview records were prepared with a summary of thoughts and

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<sup>12</sup> Another case in point refer to Australian study by Kuruppu et al., 2013.

reactions/reflections related to each interview. These sheets also set out ideas and themes emerging from the interviews. Throughout this document weaknesses in the methods were admitted. Multiple data sources were used to confirm information and support the data and findings reported in chapters 6 and 7. Methodological description has been included and rich descriptions (Gray, 2014) have been provided in the results and findings chapters to support objectivity in the study (Shenton, 2004).

## **5.7 ETHICS AND LIMITATIONS**

### **5.7.1 Ethics**

Ethical approval for the conduct of this study was obtained through the Queensland University of Technology (QUT) Human Research Ethics Committee, QUT Ethics Approval Number 1700000546. There were no specific conditions for this study that was designated as low risk. Project ethics covered core concerns of supervision, data collection, data storage, confidentiality and safeguarding the privacy of the participants and informed consent.

Two areas of ethical consideration were important in this study. First, Phillips (2014) highlighted conducting research in the field of natural disasters requires care to protect the wellbeing and comfort of participants. Acknowledging possible latent trauma experienced by participants exposed to natural disasters, the Participant Information Sheet included referral details for psychological counselling should the interview and topic event trigger distress from recounting the subject matter.

Second, ethical approval was given to conduct interviews on two decisions, a natural disaster and one other type of business disruption decision. Following several interviews with business owners it was apparent SBOs were reluctant to discuss two contrary decision examples. Certain events that had affected SBOs were found too confronting and painful to talk about. Consequently, in consultation with the supervisory team, agreement was reached to set aside a non-natural disaster event and remain focused on a natural disaster. In doing so consistency in interviews was maintained and the ethical principle of “do no harm” in research was upheld (Vanclay, Baines, & Taylor, 2013).

### **5.7.2 Limitations**

Several limitations have been identified with the research design. Notably, this study is cross-sectional in design, it is non-representative of the small business population,

suffers survivor bias, and lastly, the project was undertaken by a single researcher. These points are elaborated below.

### ***Cross sectional***

The study is cross-sectional with respect to the time of investigation (Kumar, 2014). It provides a 'snapshot' of data collected between August and November 2017 (Gray, 2014). Therefore, the data need to be interpreted with respect to this timeframe, the people interviewed and their backgrounds. Additionally, the sample disaster events are also cross-sectional. This study involved interviews with business owners who experienced retrospective natural disaster events, each of differing scale and magnitude, spanning an 18-year period between 1999 and 2017. Despite the advantage of cross-sectional research, being its simplicity in design and administration (Kumar, 2014), it cannot easily integrate change over time. For example, political decisions and legislation changes over time from public inquiries to natural disasters like the Queensland Floods Commission Inquiry into the 2010/2011 Queensland floods (Queensland Floods Commission of Inquiry, 2012; Queensland Government, 2011) and inquiries into natural disaster funding arrangements (Productivity Commission, 2014a, 2014b; Royal Commission into National Natural Disaster Arrangements, 2020). The inability to capture change is a limitation for this type of research design (Kumar, 2014). Consequently, cross-sectional studies will reflect some inconsistencies in data collection and the information obtained.

### ***Representativeness***

Noting recruitment is difficult in the natural disaster and small business field this study is not seeking representativeness within a population of small businesses. Instead, as Sohb and Perry (2006, p. 1195) state, an aim in realism is to generalise to theoretical propositions rather than to populations. Furthermore, the focus here is on exploration and discovery of information in a research field where knowledge about a SBO's decisions and decision strategies is limited. Research documenting the affordances of government and non-government stakeholders to support SBOs is meagre. Therefore, the intention here is to capture preliminary data to establish a baseline for further inquiry.

### *Survivor bias*

Survivor bias limits the generalisability of the results and conclusions in this study. The small business and disaster literature acknowledge survivor bias is an important research design limitation (Dietch & Corey, 2011; Lam et al., 2009). Participants eligible for recruitment to the study were business owners who continued trading in their business impacted by the disaster when interviewed. They are natural disaster business survivors. Although the study excluded demised businesses one participant, Tomas, who lost his business in the Brisbane floods, contributed valuable insights from his experience of losing a business. Previous literature has also recognised there are challenges with locating demised businesses (Schrank et al., 2013).

The analysis was conducted by a single researcher, the author of this dissertation. Hence, this can impact the validity of the study.<sup>13</sup> The researcher also declares employment in the small business sector. This first-hand experience provides an understanding of the challenges of running a small business with few human resources. To overcome any perceived bias in analysis future studies would benefit from multiple researchers conducting the analysis and interpretation of the data for verification purposes.

Despite these limitations the study offers a rare examination into the decisions of SBOs during the response phase of the disaster cycle. The study reports on real-world experiences of SBOs as they deal with high consequence, disruptive events that can adversely impact their business and livelihoods quickly. It offers a snapshot into how business owners draw on their experiences, knowledge and resources to survive and overcome the negative consequences of natural disasters.

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<sup>13</sup> The codes developed for the study were confirmed as appropriate by the supervisory team based on a reading of the literature and transcript extracts.



## Chapter 6: Minding my own business

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In Chapter 5 two global themes emerged from the thematic analysis: *Minding my own Business* and *Institutional Inputs*. This chapter is directed towards the first overarching theme *Minding my own Business*. As outlined in the previous chapter, data for this research were obtained from interviews with small business owners (SBOs) trading in Southeast Queensland (SEQ) and from key informants with knowledge of or experiences in Queensland's disaster management activities that help small business during a natural disaster.

This chapter reports on SBOs' decisions and responses to a natural disaster. Findings are arranged around the five business capitals of human, natural, manufactured, financial and social capital. First, human capital considers the attributes of SBOs, drawing on several demographics and their work history. The decisions and decision processes are also covered. Natural capital illuminates SBOs experiences of natural disasters and any protective actions they have in place to support a disaster response. Human and natural capitals provide substantiation of the 'experience' component of the recognition primed decision (RPD) model. Manufactured capital details the disruption caused to business owners from utilities outage and infrastructural damage influencing decisions of business owners. Damage to SBOs' properties is also canvassed. Then financial capital is discussed, highlighting how different types of financial resources are impacted by a natural disaster. Finally, the place of social capital and the roles played by three types of social capital are explored.

The findings in this chapter address research questions 1 and 2 of the study: In the context of SEQ:

1. What decisions are faced by small business owners during the response phase of a natural disaster?
2. How are small business owners mobilising their business capitals to secure business survival in response to natural hazard disasters?

The following conventions will apply across the next two chapters. The use of ellipses [...] signals edited gaps in the quotes; [FN] is an abbreviation for field notes,

square bracketed italicised information [*local organisation*] indicates author intervention including replacement of information to protect the confidentiality of the transcript (including identifiable places, people and business names and use of pseudonyms) to fill in missing information or to clarify a point. Where direct quotes are used the author will identify ownership, as exemplified [Chloe].

## **6.1 HUMAN CAPITAL –AGENCY IN A NATURAL DISASTER**

As discussed in Chapter 4, the RPD (Klein, 1998; Klein et al., 1988, 2010) was considered a plausible theoretical lens to explore the decisions and decision processes of SBOs. Emerging from the naturalistic decision making (NDM) framework with its focus on real-world settings rather than contrived laboratory experiments the RPD is premised on experienced decision makers situation recognition and mental simulation of a course of action (Klein, 1998).

Establishing human capital and the human agency of the decision maker is central to RPD. Human capital has been defined as the education and training, both formal and informal, and the knowledge, workplace experiences, skills and awareness SBOs acquire from operating in their workplaces. Further, the health, both physical and psychological wellbeing of the SBO, contributes to their human capital as a business owner's good health is essential to managing their usual business routines (Author developed based on: Emery & Flora, 2006). Their human capital and their experiences of natural disasters input to the patterns and mental models amassed in their memory. When a natural disaster occurs, business owners' pre-stored patterns are retrieved to generate a workable solution (Ross, Lussier, & Klein, 2004).

### **6.1.1 Small business owner backgrounds**

#### ***Demographic details***

Table 6.1 is a summary of each business owner's demographic details linked to their human capital: academic and vocational training, work history and time in small business ownership. As revealed in Table 6.1, these business owners have a combination of both vocational education and university qualifications. Four business owners held vocational certification [Pippa, Lucas, Fleur and Sage] while five individuals had university qualifications [Erin, Mia, Audrey, Harriet and Martin]. Notably, business owners Harriet, Martin and Sage gained educational qualifications



in fields unrelated to their current small business. Chloe's academic background was undisclosed.

**Table 6.1** Qualifications and work experiences of small business respondents

SBO	Academic Qualifications			Employment sector before opening SB*	Was work history related to SB?	Small Business ownership (years) <sup>a</sup>
	Vocational	Degree	Postgraduate			
Pippa	√			Private sector	Yes	June 2009 7.5 years
Erin		√		Public sector	Yes - 22 years in related field	Since 2008 9 years
Lucas	√			Private sector	Yes	July 2005 12 years
Fleur	√			Public sector Private sector Self-employed	Yes - 25 years in similar work	Nov 2011 6 years
Mia		√		Private sector Self-employed	Not directly	Early-2010 7 years
Chloe				Public sector	No	1997 20 years
Harriet		√	√	Public sector Primary industries Self-employed	No	1994-2009 <sup>b</sup> 2014-2017
Martin		√	√	Public sector Primary industries Self-employed	No	1994-2009 <sup>b</sup> 2014-2017
Audrey		√	√	Private sector	Yes - 17 years	2013 6 weeks
Sage <sup>c</sup>	√			Public sector Small business	Yes - family business	40 years Family run business

Notes – Demographic details provided by SBOs – self reported \*(SB = small business)

- Column relates to the SBO business in which they experienced the natural disaster.
- Harriet and Martin sold the business in 2009. In 2014 they reopened the same business in their building.
- Only Sage's details reported. The business transitioned to Sage through family succession planning

Business owners have been employed in three business sectors: the non-government sector (private and not-for-profit) and the public/government sector. Three people had been self-employed [Fleur, Mia, Harriet & Martin], however the self-employment was not connected to the current business ownership. Most of the business owners have the experience of being a wage earner with the security of a regular income before transitioning to business ownership and becoming an employer.

### ***Work experience – same business type or new***

With respect to SBOs' work experiences before opening their own business, several had worked in the same type of business or industry sector as their small business [Pippa, Lucas, Fleur, Audrey] or in a closely aligned field [Erin]. Noteworthy, Pippa managed staff in the same type of business since she was 19 [estimated at the time of interview to be in her mid-30s], Lucas worked in his industry since his apprenticeship from his late teens until the present [Lucas identified he was 42 years old], while Fleur had worked in similar establishments for over 25 years [Fleur disclosed she was 56 at time of interview]. Erin had certifications and 22 years' relevant experience that underpinned the establishment of a small business that capitalised on her expertise.

Pippa, Lucas, Fleur and Audrey had relevant qualifications and credentials to trade in their business consistent with required industry standards. Mia, Chloe, Harriet and Martin opened a business in a sector in which they had no previous experience although for Mia it was her passion. "I love it" [Mia]. Sage inherited his father's business as part of succession planning. The business began in 1977 with Sage's father mentoring him. Sage took over the business around his 40<sup>th</sup> birthday, becoming "financially secure" before leaving a permanent job for self-employment.

### ***Business ownership***

The last column in Table 6.1 sets out the "years" each person/couple has owned and managed their small business. As the column reveals, current business ownership for this sample of small businesses is of long duration ranging from six years [Fleur] through to 20 years [Chloe]. The exception in the list is Audrey who took ownership of her business six weeks prior to experiencing the bushfire. However, despite a short period of ownership Audrey had 17 years managing similar establishments elsewhere. Harriet and Martin had wide-ranging work histories. Most recently they owned, sold and then re-opened the same business. In 2009, after 15 years operating the current business, they sold it to retire. They kept ownership of the commercial building from which the business operated and leased it to the new business operators. The new owners traded between 2009 and May 2014 during which time they experienced two floods, in 2011 and 2013. The cumulative effects of flooding led to bankruptcy [Harriet]. Consequently, rather than have the building remain vacant and without a rental income Harriet and Martin re-opened the retail store. They had an "established brand" and a "successful business" [Harriet]. Further, at the time, multiple premises in

their business precinct had been empty for 18 months [Harriet], unleaseable because of the label “flood prone area” and an inability by business owners to secure insurance [Martin & Harriet]. Notably, at the time of interview Harriet was aged 68 and Martin was 73 [Martin].

### ***Industry sector***

Absent from this table is the information about the industry sector in which these business owners operate. Table 5.3 [Chapter 5] revealed this sample of business owners were operating their businesses in five industry sectors. Six business owners had a retail business [Pippa, Lucas, Fleur, Harriet & Martin, Audrey, Sally & Sage] with Chloe and Sage trading in wholesale as well as the retail sector. Mia ran three businesses from her property: accommodation; a professional service; and creative industry service. This sample of businesses reflects the heterogeneity of the small business sector with no one business offering the same goods or services. Notably, several businesses could be classified as “discretionary” offering non-essential consumer goods and services [Lucas, Harriet & Martin, Mia, Sally & Sage, Pippa] while others provided essential products and services governed by regulatory compliance [Mia, Audrey, Fleur], or offer “niche” markets driven by demand [Chloe, Erin].

### ***Business category and employees***

In terms of the small business classification, Chloe, Audrey, Erin and Pippa fall into the small business category employing between five and 19 employees with Chloe employing the largest workforce of nine staff. Harriet and Martin, Lucas and Fleur are micro-businesses that employ between one and four workers, with this cohort of business owners averaging two casual employees each while Sally, Sage and Mia are non-employing businesses. Therefore, with respect to the employment of staff, most of the SBOs in this study were employers. Significantly, in this sample of nine small businesses, seven collectively employ 45 staff [Pippa, Erin, Lucas, Fleur, Chloe, Harriet & Martin, Audrey]. This finding of 45 individuals employed by seven small businesses reinforces the centrality of small businesses in their communities as important job creators (ASBFEO, 2019; Zhang et al., 2009).

Casual employment arrangements on either a full-time or part-time basis dominate the employment status of workers [Lucas, Fleur, Chloe, Harriet & Martin]. Erin’s virtual business engages associates working globally on individual assignments.

Pippa was the main employer with permanent full-time and part-time staff. Having a predominantly casualised workforce, this sample of small businesses contrasts with international historic research on disasters and business which express business size in terms of full-time employees (Howe, 2011). Such a finding is a notable difference between the current study and historic research. This finding also reinforces the centrality of the business owner as having primary responsibility for enacting all aspects of business management and decision making because of having few permanent employees to delegate responsibilities to and devolve proprietorial control to (Atkinson & Meager, 2019; Jennings & Beaver, 1997). A casualised workforce also signifies higher costs for employment of casual staff during a natural disaster taking account of the casual loading of around 25 percent on top of the hourly wage (Gilfillan, 2018). Wages are known to be the single most costly expense in running a small business (Schaper et al., 2011)

## **6.2 NATURAL CAPITAL – EXPOSURE TO HAZARDS**

This sub-theme considers the element of SBOs' exposure to extreme natural hazards. Weather patterns and natural hazards are a component of natural capital, a reference to the assets that abide in a particular geographic place or location (Emery & Flora, 2006). SEQ was acknowledged by SBOs as prone to extremes in natural hazard events and regarded as an inescapable part of living and working in the region, with Harriet notably stating natural hazard disasters are “indelibly engraved” in memory. Consequently, when asked to nominate a single natural disaster to discuss their critical decisions most business owners could recall being mobilised to several events. In the sample of business owners Harriet and Martin had experienced these disasters over decades as part of owning a primary production business:

We had a banana farm for 13 years...during which time we experienced two cyclones. One of which was Cyclone Winifred in 1986... And then five years later we had Cyclone Joy [1990] [Harriet]. In 1999 [in our retail business we experienced] the biggest flood of the century. [Martin]

Now they operate a retail shop in a business precinct well known for persistent flooding. Harriet declared the area “floods tens of times and will continue to do so”, indicating flooding is part of her business routines [Demographic Information Sheet].

Other SBOs have been exposed to at least two natural disasters in the past decade [Chloe, Sally & Sage, Mia, Lucas, Fleur]. Chloe asserted she was well-rehearsed in

natural disasters having experienced such events with increasing frequency “... in 2010 and...three weeks later 2011 there was another event. We flooded twice within three weeks. ... around 2013 [Cyclone Oswald] ... and then the Cyclone Debbie [2017] that happened this year in March.” Similarly, Fleur cited two close floods: “We traded for 13 months [after 2010/2011 Brisbane floods] before the next one [Cyclone Oswald in 2013] happened,” while Sally & Sage dealt with sequential bushfires “...2013, 2014.”

Not all SBOs had experienced a natural disaster event. Audrey had not been directly exposed to a natural disaster until the bushfires that surrounded her community and business in 2014. Before then she was vicariously aware of the Brisbane floods and managing a business interstate. Likewise, Lucas explained he had no personal involvement in a natural disaster until the Brisbane floods: “I’ve never lived in an area which flooded, never been through a flood,” flooding “never defined my community” and had never been discussed with him [Lucas].

Business owners observed natural hazards are unpredictable in nature happening “at any time” [Lucas]. They described them as part of everyday routines, being “random,” arrive and “pass quickly” without incident or disruption in their communities [Erin, Pippa]. They can be variable in how they present. Like the 2011 Brisbane Floods they built up over time: “In [January] 2011 the flooding occurred from basically [a] long-term rainfall event” in contrast to flooding in 2013 which happened quickly and were impactful in a short amount of time “... in 2013 ... we had a huge amount of rain ...in 24-36 hours when...over a metre [1000 millilitre] of rain fell” [Lucas]. However, in 2016 Chloe responded to public warnings alerting the community to an imminent natural hazard. For seven days she mobilised staff to execute her flood plan finding the hazard failed to materialise into a full-scale natural disaster. “It was a non-event” [Chloe].

Natural hazard events were changing in complexity. Chloe’s experience of three events over the previous seven years revealed shifts in intensity and frequency of such events: “...we flooded in December 2010-2011 ... but it affected us minimally. 2013 was bad. 2017 was the worst.”

### 6.2.1 Business owner's investment in disaster planning and preparedness

Aware these SBOs were living and operating a business in a hazard-prone environment they were asked whether they engaged in hazard management and disaster response planning. A Demographic Information Sheet with a dichotomous format of Yes/No responses was completed by each business owner (refer Appendix C). These findings are presented next. Table 6.2 details the measures SBOs have in place to protect their business from an unexpected event. The table shows business owners have given forethought to unexpected disruptions to their business and have mapped out protective strategies to respond to a disaster.

**Table 6.2** SBOs reported natural hazards protective measures

Measures	Pippa	Erin	Lucas	Fleur	Mia	Chloe	Harriet & Martin	Audrey	Sage & Sally
<b>Emergency plans</b>	√	√	√	√	√	√	√	-	√
<b>Business plans with emergency strategies</b>	-	√	-	√	√	√	√	-	√
<b>Business Continuity Plans</b>	√	√	-	-	√	√	-	-	√
<b>Flood and fire plans</b>	√	√	√	-	√	√	√	-	√
<b>Measures to improve premises</b>	√	√	√	√	√	√	Partial	-	√
<b>Do risk assessment</b>	√	√	√	√	-	√	√	-	√
<b>Generator</b>	-	-	-	-	√	√	-	-	-
<b>Staff training</b>	√	√	√	√	n/a	√	√	-	n/a
<b>Team meetings for emergency</b>	-	-	-	√	n/a	-	Casual 3 staff	-	n/a
<b>First aid</b>	√	√	√	-	√	√	-	√	-
<b>Emergency kit and supplies</b>	√	√	√	√	√	-	-	-	-
<b>Back-up records and files</b>	√	√ Cloud based	√	√	√	√ Cloud based	√	√	Files in hard & soft copy
<b>Insurance a/b</b>	√	-	√	-	√	-	-	√	<b>c</b>

*Notes:* List devised from literature Webb et al. (2000), Chang and Falit-Baiamonte (2002), Powell (2010). Based on self-reported responses from demographic information sheet completed by SBOs.

- Unless specified insurance relates to public liability and/or contents – not all small businesses were able to get building insurance
- Building insurance and business interruption insurance was generally not mentioned by this sample
- In interview Sage did mention public liability insurance and vehicle insurances to cover his business

Across the list of protective measures six of the nine SBOs have at least eight measures implemented out of a total of thirteen. Three businesses were found to have 10 measures in place. With respect to the first three measures, relating to emergency planning, business planning and business continuity planning, most of the SBOs have dual plans. These plans are regarded as high-level preparedness strategies in the disaster management and business literature (Powell, 2010). An unusual finding as historic empirical literature finds few small businesses invest in higher level preparedness actions. Studies tend to show it is larger businesses with many full-time employees who are more likely to undertake broad-ranging protective and planning activities (Howe, 2011). The finding is also contrary to the literature in the response phase discussed at Chapter 3 where it was identified the implementation of business planning and protective measures by businesses of any size across all the industry sectors was generally poor (Cater & Chadwick, 2008; Cioccio & Michael, 2007; Drabek, 1995; Zolin & Kropp, 2006).

In this study the adoption of flood and fire plans is of interest. Research by Gissing (2003) into business flood action plans in Australian cities (Inverell, Lismore and Adelaide) found they are generally poorly developed and applied. However, Gissing's (2003) study is 17 years old targeting flood plans. The high number of small businesses with flood and fire plans may be misleading as to which plan is in fact in place. Having fire plans may reflect legislative requirements for fire safety compliance required of business owners under the Queensland Building Fire Safety Regulations 2008 (set out under the Queensland *Building Act 1975–Fire and Emergency Service Act 1990*). The coupling of a flood plan with a fire plan on the Demographic Information Checklist may also distort the strategy in place with the potential of business owners having a fire plan because it is enshrined in legislation. The distinction between separate flood and fire plans was not verified during interview.

One business owner had no formal planning strategy in place [Audrey]. This was confirmed during interview. Despite having no explicit plans developed Audrey said an informal verbal arrangement between herself and another [organisation] to access a 'generator' in the event of a natural disaster operated. This suggests that forethought has been given to deal with risks posed by unexpected threats including a natural hazard event.

Lifesaving activities like first aid training and meetings with staff, an emergency kit and supplies were important to this sample of business owners, and corresponds with older international research (Powell, 2010; Webb et al., 2000). These measures are inexpensive and straightforward to implement. The limited number of staff meetings dedicated to emergencies is of interest, especially given the investment in training by most employers. A possible explanation for the difference is most business owners employ few staff, and where staff are employed, they are engaged on a casual basis, hence training may target induction matters, immediate operational and work health and safety concerns over crisis and natural disaster events. Further, because most staff in this sample of business owners are employed casually, in a disaster context, a business owner is likely to release staff from their duties quickly. This is because the line of communication between business owners and their staff is personal and direct, reflecting one of the unique attributes of being a small business (Vossen, 1998).<sup>14</sup>

### 6.2.2 Less obvious protective measures by business owners

While the list of protective measures found in Table 6.2 are commonly documented in the business and disasters literature (Powell, 2010; Webb et al., 2000) these SBOs revealed other types of protective actions were equally important. Harriet and Martin, for instance, purchased their business in a hazard-prone environment as well as their commercial building. Their decision to do so was a calculated one involving economics, the practical advantages of the building and its location [Harriet]:

People ask us why would you buy a building in a flood zone area? We didn't. We rented for five years...Ultimately, we bought it...we looked for premises elsewhere out of the flood zone and for a much smaller building it would cost us far more than this had. When the landlord of this place heard that we were looking elsewhere he made us an offer...At the time we were paying \$6,000 a month in rent, and we borrowed the entire money to buy this premises. And capital repayments and interest repayments were less than \$6,000 a month. So we thought we would own it. [Martin]

Harriet mentioned the building was two-storeyed with two access points. Visitors and customers access the shop from the ground level entrance off a main road into the display and sales area while the deliveries/loading bay is positioned at the second level. The ground and second level are separated by stairs (20 in total) [Harriet].

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<sup>14</sup> Insurance findings are explored as part of SBO financial resources under Financial Capital.



The second level is an office and storage space for stock and supplies. During floods the second level accommodates the ground floor display stock and business equipment. Should stock need to be evacuated to another venue the delivery entrance has a parking area for removalist vans to load stock for ease of evacuation. Such circumstances can occur when flood waters exceed the height of the stairs. Similarly, Lucas mentioned his building has a mezzanine level where he stores equipment, stock and assets in flood inundations.

Mia knew the property her family purchased was in a hazardous environment: “...We were aware of that.” The family had specific criteria to meet when buying their property and the businesses on that property: “It [being hazard prone] wouldn't have put us off buying this place...we brought this place to suit us”. The hazardous elements of the area were addressed by purchasing their property on elevated land which was self-contained (“We are off the grid”) with independent water supplies, a generator and buildings constructed to “cyclone proof” standards.

Chloe and her husband/business partner (deceased) began their home-based business in 1997. The business is in a place well-known for its vulnerability to flooding. The couple knew this when they purchased the property. “We always knew it's a flood plain.” The site was undeveloped, but it matched their business needs. Knowing the site was hazard-prone the couple strategically planned the infrastructure of the site. “[We]...prepared as much as we could...we built [the house] as high as we could” above the 1974 flood heights; installed utilities like power and gas supplies high up on the side of house with systems for switching over supply when the area flooded. The property had solar power installed and had a generator. The site contained various levels and structures designed as contingencies to relocate stock and to protect equipment during an inundation. Sally and Sage said that they carry out regular, manual clearance across bush worksites to remove flammable material as a hazard reduction measure.

### **6.2.3 Key Informants' observations on SBO investment in hazard protective measures**

Several observations were reported by key informants regarding SBOs' investment in hazard protection measures. Key public sector informants stressed the importance of business owners having protective measures and planning in place consistent with official guidelines (AIDR, 2019; COAG, 2011):

Ultimately you can't stop an event from happening. It's going to happen. It's just how you respond or recover from it. It's a key part. It... comes down to a plan beforehand. [Nick]

Nick was doubtful planning was carried out by many SBOs because he has found it uncommon in the small business world [Nick]. Nick, who coincidentally came from a small business background, stressed SBOs' focus was on keeping the business "alive" because the economic environment was a challenging place to operate in: "... its tough out there ... they struggle to survive anyway ... their focus is running their business" [Nick]. He considered the benefit of planning for business owners is that they are in a stronger position to act in the event of a crisis. A plan becomes a blueprint of how best to prepare a business for unexpected events, review the impact, and 'regroup' to facilitate recovery [Nick].

Based on anecdotal observations Marc concurred with Nick's views. He hypothesised few businesses enact disaster plans or were adequately prepared to respond to a disaster because they lack an appreciation for the gravity of such an event: "...I don't think they get it myself. All sized businesses found to be unprepared." Being unprepared according to Marc is problematic because "... if they're [business owners] not on the front foot in the planning and preparedness stage" it puts them "behind the eight ball in response and recovery" [Marc]. Marc suggested business size influenced a willingness to engage in mitigation and preparedness strategies:

The smaller the business the less focused they are on business continuity. It's not their core business that doesn't make them money so they just [do] not think about it until something happens. [Marc]

There was a suggestion SBOs were highly dependent on others to help overcome natural disaster events rather than implementing their own protective measures: "I think businesses need to do a lot more for themselves" [Nick]. The implication embedded in the statement is small businesses expect 'others' to be responsible for protecting their business. The point was further elaborated that:

... government was there to support them, or insurance will take care of the lot. So long as I have insurance that's all I need to worry about. [Nick]

Contrary to the key public sector key informants' perspectives, other narratives suggest SBOs understand they are solely responsible for protecting their business. How they protect their business and how they plan for events may not necessarily be neglected as suggested in the preceding remarks. Emilio, a key public sector informant,

has observed small businesses are well-organised, self-reliant and quick to resume operations in the aftermath of a disaster:

It was small business that opened first ... Coles wasn't open, Woolies wasn't open, Bunnings wasn't open. But you know the local Night Owl and 7-11 were open... some lucky to have their own gen[erators] sets.

Benita, a former non-employing business owner, claimed business owners are proactive in their planning but they “don't dwell on what has to be done.” The implication is that business owners' planning may not be as explicit as a written document; rather it involves a range of strategies including hands-on, practical experience and knowledge, and physical effort. Business owners, she suggested, understand they need to get their business back on its feet after a major disruption as the business is “their income and their livelihood” therefore “you either get in and get it fixed and get it back on the road or you don't have any more income...and you find a job.” [Benita]

Three key non-government informants [Reuben, Grace and Charlie] expressed similar sentiments to Emilio and Benita. They contend SBOs understand their business responsibilities and are dedicated to their business continuity regardless of setbacks. “It might be a loss of, well, in some cases millions and millions of dollars, but they will pick themselves up and repeat the process.” [Grace]

### **6.3 HUMAN CAPITAL – DECISIONS IN ACTION**

Findings about SBO decisions and their decision strategies during a natural disaster are reported next. As the previous sections identified, these business owners have accumulated experience and knowledge in owning and running their small business with the majority having had to respond personally to a disaster during business ownership.

The decisions confronted by this sample of SBOs are shown in Table 6.3. The decisions made *in situ* relate to six SBOs [Chloe, Harriet & Martin, Lucas, Pippa, Erin, Fleur]. This is because not all business owners were forced into non-routine decision making. Three business owners' decisions were categorised as ‘fait accompli’ [Mia, Audrey, Sally & Sage] since they were unable to alter their circumstances or respond to their disaster event differently.

Mia was trapped in her home as rising inundation surrounded it, preventing movement in and out of the property for six days. Sally and Sage were denied access to their worksites as areas affected by bushfires were officially closed to the public for 10 days. Although bushfires were threatening in the periphery to her business Audrey kept her essential services business open because it relies on having qualified staff available to provide services to clients: “It certainly impacts us through any sort of natural disaster or weather events...because we have to have [authorised staff] physically available at the store.” She remained vigilant to the bushfire alerts online during business hours then after hours using her mobile phone and laptop to track the bushfire movements.

**Table 6.3** Business owners’ decisions across the response phase

<b>SBO</b>	<b>Event year</b>	<b>Response/Impact stage</b>	<b>Decisions</b>	<b>Theme</b>
<b>Lucas</b>	2011	Before	Implementing protective measures	Logistical
<b>Lucas</b>	2013	Before	Implementing protective measures	Logistical
<b>Chloe</b>	2017	Before	Implementing flood plan	Logistical
<b>Chloe</b>	2017	Before	Safety and welfare of employees	Safety & well-being
<b>Harriet &amp; Martin</b>	1999	Before	Evacuation of stock and equipment	Logistical
<b>Pippa</b>	2017	During	Minimising damage, maintaining safe operations and closing	Logistical
<b>Pippa</b>	2017	During	Employee welfare	Safety & well-being
<b>Chloe</b>	2017	After	Clean-up and restoration of worksite	Logistical
<b>Fleur</b>	2013	After	Restoring damaged building	Logistical
<b>Lucas</b>	2011	After	Clean-up and restoration of worksite to re-open	Logistical
<b>Lucas</b>	2013	After	Clean-up and restoration street & home-based businesses	Logistical
<b>Harriet &amp; Martin</b>	1999	After	Clean-up, restore and remerchandise business	Logistical
<b>Erin</b>	2011	After	Sustaining business continuity	Logistical

The decisions in Table 6.3 were thematically coded as two types: logistical, and safety and wellbeing. Logistical decisions relate to organising and implementing protective measures to minimise damage and stock losses at the worksite *before* the impact of the hazard (sandbagging, collecting and elevating electrical appliances and

technological equipment and assets-cabinetry, display units, flood plan, relocation/evacuation plan of stock and equipment) [Lucas, Harriet & Martin, Chloe]. Logistical decisions were also evident *during* the impact of a disaster (collecting equipment and elevating computer systems, mopping up flooded areas, improvising services) [Pippa] and in the *aftermath* of the disaster in the clean-up of a business (removal of carpets, hosing equipment, stock) [Fleur, Erin, Lucas, Harriet & Martin, Chloe]. Safety and wellbeing relate to reducing the potential for harm and/or injury of employees (cancelling work for employees, dismissing staff from the workplace, removing hazardous floodwaters from worksite) [Pippa, Chloe] and clients (cancelling appointments and attendance at the business) [Pippa].

### 6.3.1 Situation recognition factors

Decision making involves an assessment of the problem and then a comparison of the problem to known reactions. Recognition of a situation comprises four features: cues, the important goals in the situation, expectancies as to what will unfold and typical actions in the type of situation. Situation recognition factors are considered next to explain the decisions of SBOs. Most SBOs were able to recognise their respective natural disaster situations from the salient features in their immediate environment (*in situ*).

Six cue clusters were categorised as important to SBOs' actions in a natural disaster context. Table 6.4 details the cue types extracted in the data analysis, its descriptor along with a relevant quote/s. The first category of cues comprises critical infrastructure and public utilities [Harriet, Erin, and Pippa], these being components of manufactured capital. The cues can signify disruption, damage or destruction across elements of manufactured capital: like transportation networks, communication systems, public utilities including electricity and gas or SBO premises and equipment. Power outage cues prevent business operations impacting across electronic transactions, computer systems, business schedules, usual routines and workplace tasks and implies constraints on what can be achieved at the time [Pippa, Erin, Harriet].

**Table 6.4** SBO cue inventory for natural disaster events

Cue type <sup>a</sup>	Description	Selected exemplar quotes
Critical infrastructure & utilities breakdown	Disruptions due to utilities and power losses	<p>“Half the location [lost power] for six weeks. Our area was for 11 to 14 days.” [Erin]</p> <p>“As soon as the water level gets to 15 metres Energex comes and pulls the power.” [Harriet]</p>
Safety & well-being	Risk to well-being and safety	<p>“We couldn’t get food in... bucketing water and flushing toilets ... on kerosene lamps, tossing the contents of the fridge...” [Erin]</p> <p>“Getting them out of here quickly [staff &amp; clients] especially with the tree cracking, I didn’t want them here.” [Pippa]</p> <p>“There was a hole in the front roof [water] leaked through the building.” [Pippa]</p> <p>“I can’t have my guys stay...they need to be home.” [Chloe]</p>
Environmental	Factors related to weather	<p>“If there’s a stationary low over [area], if you get rain from the main catchment area coinciding with the tributary rainfall, you’re got problems – you’re watching for two sets of information to make your decisions.” [Harriet]</p>
Nature of the problem	The magnitude or criticality of the problem	<p>“...in 2013 was a very muddy flood. There was huge amounts of silt and things like that...it was like 10 centimetres of mud.” [Lucas]</p> <p>“Those trees ...they’re the ones that back up the drains.” [Pippa]</p>
Social, affective & behavioural	Relates to visual signs, verbal (including advice), nonverbal language, and human behaviours	<p>“Dr X [local identity] was a bit of a legend .... He developed a formula when heights got to a certain point, you’re looking at evacuating. So, you’re talking to the gurus in the street.” [Harriet]</p> <p>“A lot of clients had a little comment like ...they were a bit annoyed.” [Pippa]</p> <p>“I remember going around and asking some members of the council at the time, ... and drove up to the fire brigade and I said, ‘hey they reckon the towns gonna flood... how bad is it gonna be?’” [Lucas]</p>
Mainstream & digital media	Sourcing disaster information – broadcast & digital	<p>“Monitoring the fire alerts ... it was through media and social media we were aware of what’s going on.” [Audrey]</p> <p>“... our meteorology [BOM] ... Watch what they say.” [Harriet]</p> <p>“I have got an app it's [LGA] early warning ...”[Chloe]</p> <p>“[Facebook]- you know if Channel Seven was sharing something.”[Pippa]</p>

*Note:* a. Categories modelled on Okoli et al. (2017) and Okoli et al. (2014).

The second source of cues – work health and safety cues – were relevant to three business owners [Erin, Pippa, Chloe]. The presence of these cues influence business owners’ risk-taking/risk aversion behaviours. Such cues help to assess the level of danger being faced and the possibility an injury and/or harm can occur. Such cues can suggest the necessity to avoid unnecessary risks or the adoption of precautionary actions to reduce or eliminate adverse consequences to the business owner, their staff and others (i.e. to clients). Examples of health and safety related cues include hazards of flooded workspace, performing tasks without adequate light, water leakage through the roof [Pippa]; employees driving in hazardous flood conditions [Chloe] or the decline in hygiene and sanitation conditions from loss of utilities (power loss for weeks) and infrastructure destruction (roads) [Erin].

Environmental cues are generated from the external environment mostly associated with natural elements. Cues identified in this category emphasise extreme weather conditions of heavy rainfall, wind velocity and wind directions, temperature and flooding, and imply potential ways in which the prevailing conditions can impact the SBOs. Cues like heavy rainfall in water catchments trigger information about the gravity of an emerging situation and indicates time available for the SBOs to implement their protective measures. Notably this includes organising removalist vans, the time available to relocate stock and assets to elevated areas [Harriet] or a flood plan [Chloe]. Reliance on external sources of information, notably print, broadcast and digital media coverage via political instrumentalities (government and non-government entities), independent of the *in situ* environment, helps understand the type of situation and the causal factors that clarify what is going on and likely to happen.

‘Nature of the problem’ cues provide observable and perceptual indicators that alert the business owner to the criticality of the event (Okoli et al., 2017). Cues identified in this category include mud deposits, notably the viscosity, weight and its thickness [Lucas, Chloe], implicating the complexity of the task and time required to clean up a worksite; stock damage; and leaf litter accumulating in gutters which point toward water build-up and pressure on roof structures [Pippa]. These cues aid in assessing the magnitude of the task and the resources that need to be mobilised.

Affective and behavioural cues (also identified as social cues) relate to visual, verbal and non-verbal information captured by SBO conveyed by various sources of

social capital. The cues are derived from people's expression of emotions, body language or verbal comments linked to the natural disaster. The affective and behaviour cues act as feedback loops to indicate the type of action an SBO needs to take, the response time available (minutes, hours, days) or the situational risks that are evolving. From cues such as client annoyance [Pippa], talking to local identities [Harriet], public officials [council, fire brigade] or observing strategies of business owners [Lucas] SBOs gather actionable information that they can leverage using their experience and judgment.

The sixth category of media cues relates to broadcast [television, radio], print [newspapers,] and digital media [platform based on internet, like social media, Facebook, websites]. Examples include local government "apps" [Chloe], "fire alerts" on social media [Audrey] government website of Bureau of Meteorology [Chloe, Lucas, Harriet] and Facebook [Pippa]. Media cues offer real-time, current, authoritative disaster information produced by reputable and trusted institutions (government) and non-government entities. With the aid of media cues SBOs can develop a disaster response filling knowledge gaps when *in situ* disaster information is incomplete or inadequate. [Lucas, Chloe, Audrey, Harriet, Pippa].

### **Goals**

Plausible goals relate to specific outcomes that a business owner (decision maker) wants to achieve (Boyes & O'Hare, 2011; Klein, 1998). The goals reflect what is possible to attain in a context and at a point in time. Four categories of goals were pursued by SBOs as reported in Table 6.5. Similar goals were pursued by business owners with some having concurrent goals. Goals related to limiting business closure [Erin]; protecting staff [Pippa, Chloe]; elevating or moving stock and equipment to places of safety before the disaster could damage the assets [Pippa, Harriet, Lucas, Chloe]; and in the aftermath of the disaster, timely clean-up of worksites [Chloe, Fleur, Lucas].

Goals can shift in dynamic conditions. Across a 12-hour period Harriet and Martin altered their goals as flood heights changed:

...we had just put all [the stock] upstairs and it's sort of about 6 at night and somebody from the council rang up and said, "oh its predicted to go to 23 metres guys", which puts [*upstairs storage*] at waist high... Then at one in the



morning...the SES bloke came and said, “you’re got to move it again; it’s going to peak at 24 metres.” [Martin]

**Table 6.5** Plausible goals pursued by SBO respondents

Goals pursued	Counts	Indicative exemplar quotes
Minimise business closure	2	“I went interstate as soon as I could.” [Erin]
Keeping staff safe	3	“The key things were making sure my staff were safe.” [Pippa] “Evacuate the staff from the property.” [Chloe]
Stock and assets moved to safe place or relocation before disaster hits worksite	11	“We had to accommodate all our stock upstairs.” [Harriet] Anything below the waist [we moved] out to a hall that was made available to us.” [Harriet] “Our stock needs to get up to higher ground.” [Chloe] “Trying to protect all of my stock. Taking all the stock and computer away... that computer system is worth ten grand.” [Pippa] “Move all my electronic equipment and information databases to safety.” [Chloe] “Protect the stock.” [Lucas]
Clean-up stock quickly	3	“Clear out the stock [from the building] dry it out .... Cold room – storage... There the water gets into the core structure and you ...can’t use it anymore.” [Fleur] “The clean-up started as soon as the water started going down.... As the water receded, we started hosing the stock.” [Chloe] “...you clean up, you get on with it and you get back to life.” [Lucas]

### ***Expectancies***

Expectancies are associated with what the SBO hypothesises is the likely flow-on effect based on their assessment of the situation and cue identification. Few SBOs articulated any expectancies, thus inferences have been made from the analysed data.

The first group of expectancies flow from critical infrastructure and utilities cues. Pippa, Erin and Harriet could anticipate the impact of their dependency on electricity. Loss of utilities immediately signals compromised task performance and loss of all business functions. Thirteen references highlighted the flow-on effects from power downtime: the inability to call clients [Pippa n=4]; reduced business trading hours [Pippa n = 3]; improvised tasks and reduced revenues due to loss of lighting [Pippa n=1]; an inoperable computer and communications system [Erin n =2, Pippa n =1]; and the evacuation strategy necessitates expediency to prevent moving stock in the dark [Harriet n =1]. In relation to the loss of roads and infrastructure, Erin recognised her rural community would be cut off and isolated with the implication people couldn’t get out.

The second group of expectancies arise with respect to environmental cues. An anticipated flood height acts as a barometer indicating time available to complete actions. In the case of Chloe, flood levels influence the decision to dismiss staff from the worksite. Creek flood levels around her property overflow, cut off areas and roads. Consequently, to avoid being trapped at the workplace, staff need to leave ahead of the rising floodwater to reach their homes safely to protect their families and their properties from the flood: "...“staff [live at] [location] and with the [road] going under...” staff had to go” [Chloe].

Fleur’s experience of the Brisbane Floods in 2011 meant that when the same building flooded in 2013 she understood the nature of the problem. The floor collapsed under the weight of floodwaters “you’re got 32 pounds per square inch of water sitting on top of the floor; it caved in” [Fleur]. Fleur deployed her effort and energy quickly as waters subsided to clear the site. She removed chairs, damaged equipment, floorboards, glass and debris to minimise damage, mould and spoilage of the site. Further, her business was tied into contractual arrangements with a [financial institution] with implications for her assets if she failed to act: “...they [financial institution] made us tie the [family property] as security [for the loan] because we didn’t have jobs. If we’d gone bunk they’d have got the lot.” [Fleur].

Contrary to the previous business owners, Lucas stated explicitly he had no expectations when confronted with his first natural disaster. He worked in a vacuum without any ideas as to how best to deal with the evolving event, unable to make predictions what would happen next nor when: “No real expectations” therefore “...we just sort of prepared the best we could” [Lucas].

Last, expectancies were linked to the actions of others. Pippa was unprepared for the continuous flow of clients turning up for pre-arranged bookings. In part it was because the official directives were repeatedly circulated in the media [television, newspapers and online] reminding the public to keep off roads and stay home [Transcripts Pippa, Charlie]. Pippa assumed her clients would heed the advice: “I’m guessing a lot of people wouldn’t have been stupid enough to drive out here.” On the contrary her clients’ expectations were mismatched with public authorities’ and her own expectations, thus she found herself confronted by their reproaches: “They got here but some of them were a little bit like...oh I really wanted [services done] and we just couldn’t physically do it.”

### 6.3.2 Decision making processes of business owners

Set out in Table 6.6 are the decisions of Lucas, Chloe, Harriet and Martin, Pippa, Fleur, and Erin. The table also collates the decision strategies that correspond with one of the three scenarios or levels of the RPD model.

**Table 6.6** Decision strategies of SBOs in a natural disaster

SBO	Event date	Response impact phase	Recognised Action	Option generation Serial SE/ concurrent CE	RPD scenarios Level 1/2/3	Pre-priming	Planning	Review
Lucas	2011	Before	-	-	N/A	-	-	√
Lucas	2013	Before	√	SE	Level 1	√	√	√
Chloe	2017	Before	√	CE	Level 2	√	√	√
Harriet & Martin	1999	Before	√	SE	Level 1	√	√	
Pippa	2017	During	√	SE	Level 1	√	√	√
Lucas	2013	After	√	SE	Level 1	√	√	√
Chloe	2017	After	√	CE	Level 2	√	√	√
Harriet & Martin	1999	After	√	SE	Level 1	√	√	-
Fleur	2013	After	√	SE	Level 1	√	√	√
Erin	2011	After	√	SE	Level 1	√	√	-

The decisions and the decision processes of Lucas (2013), Harriet and Martin, Pippa, Fleur and Erin were classified as simple matches (Klein, 1998). The actions of the SBOs were considered as typical as they were familiar with the hazardous situation they were facing, able to pattern-match stored cognitive cues from a past event to the current one. These SBOs were not searching for alternative options to their disaster problem to find the best outcome. Rather, these business owners were generating one workable option (Klein & Klinger, 1991) that was “satisficing” (Simon, 1955, 1957) at the time. A recognised pattern match with a serial option corresponds to Level 1 of the RPD model.

Chloe’s decision process was less clear cut. In the lead-up to the March 2017 flood Chloe watched multiple informational sources as she tracked the hazard in the media and online. She relied on local government website flood maps, Bureau of Meteorology reports and reviewed catchment areas, trying to match each data source with the *in situ* cues. The situation posed challenges as she struggled to find cue

matches to mark the situation as one that was typical which would trigger a rehearsed course of action, her flood plan. Chloe's approach was more diagnostic as she experienced conflicts from the triage of cue sources, cognitive, real-world and digital which she described in the next extract:

Cyclone Debbie rain event was unpredictable, it was...coming north. You know Townsville, then it was coming and then I just had no idea...I watched carefully for days beforehand and leading up to [it], I just keep an eye on it myself, I don't rely on other people...I do my own checking and ringing and gauging, and you know all that to see...what I think is going to be the end result and the predictions...on the [LGA website]...that has the flood levels and the predicted flood levels for the particular event...They've been under what has been the final heights...by enough to make a difference...the levels [are important] because we rely so much on [them]. We've got different levels here [at the business site] and different stock on different levels and even the office...I thought this time...You know? Do I hit it full-on, or do I play it cautious? I made the wrong decision...I played it, didn't hit it head-on early enough.

It was not until a local councillor, a source of social capital, advised the projected flood heights, that Chloe reassessed the situation and deployed her flood plan:

I think the [name] council, actually a local councillor [name], rang me with a warning. Even though I keep an eye on the levels at the bridge down at [location]...it was still rising but that water was banking up and it couldn't get away. So, [the floodwaters height] [the councillor alerted] they were going to be a lot more than what would normally be our understanding of what was going to happen.

In the aftermath of the inundation Chloe was again faced with a miscalculation of the problem before her as she initiated the clean-up. Despite having the experience of many flood clean-up, the impact from this flood was difficult to assess. Chloe understood what physical tasks had to be completed, however what was novel was the combined mud deposits with the magnitude of the flood. Chloe elaborated the flood height was significant "...it would have been a metre from the ground" but the water carried mud deposits: "We've got mud you know...It's very heavy, very fine, very sticky, very clayey, it's just horrible." The dual factors affected her ability to accurately judge the situation. Whereas in the past Chloe had hired labourers to clean up the property [in 2011] "it was virtually nothing", in 2017, the mix of flooding and mud was unprecedented.

Pippa's situation meant there was no time to review options. She juggled multiple activities: working with clients; writing posts on social media; minimising the

potential risks from water leaking into the shop while also tracking the environmental cues: the winds; rainfall; and ‘cracking of the tree’ in front of her business and on her mobile phone. Fleur and Erin were experiencing situations reminiscent of past natural disasters. Likewise, Harriet and Martin had the experience of multiple natural disasters and thus had rehearsed actions and imprinted cognitive insights.

With respect to Lucas and his first natural disaster in 2011, despite having extensive domain knowledge and experience as a business owner he lacked clarity of the problem being faced. Without prior exposure to a natural disaster, he floundered as to what he should do to protect his business in the face of rising floodwaters approaching his township [Lucas] [refer to sub-section 6.2 natural capital]. His initial response was to find the answers in the community: “...at the twelfth hour you're running around sort of saying "What do we expect?"” But he failed to find solutions. “There weren't any defined answers.” He devised a plan of action after observing what others were doing:

...just being in town and stuff like, you know, you drove past and saw it. Maybe other business owners might have been starting to sandbag too at the time. So, you sort of say "Okay...they're on it, we'll go and do it.”

In 2013, when faced with the second inundation, Lucas recognised similarities with the 2011 inundation declaring: “it’s Groundhog Day” and immediately deployed protective measures based on his earlier experience “...it’s Deja vu ...you’re doing a lot of the same things.”

### **6.3.3 Planning and pre-priming by business owners**

SBOs’ ability to respond to a natural disaster involved other factors beyond reliance on domain knowledge and experiences. Longer-term planning and a readiness to act in the face of a natural hazard, *in situ*, was a prominent feature of this study sample of SBOs. Both planning and pre-primed readiness contribute to a business owner’s response to their critical decision event.

Long-term planning measures involved decisions by business owners linked to the start-up of a business. Business owners had made calculated decisions from the time of their purchase of a business site and/or the buildings from which they run their business. Indicative references were noted earlier in the data analysis under natural capital. Notably: structural preparation related to Chloe’s worksite with respect to the infrastructure development related to the land, house and office site in anticipation of

hazardous events; Harriet and Martin's purchase of a two-storey building with levels divided by 22 metres and built from mountain ash [that has withstood at least 30 floods] [Harriet] with alternate entry-exit points, while Mia's property was elevated and self-contained using cyclone-proof materials. Pippa had instituted a Facebook site linked to her mobile phone that allowed her to communicate with clients. As Table 6.1 revealed, business owners had considered other planning measures to deal with unforeseen circumstances, for example emergency plans, flood plans, business continuity planning, insurance and cloud-based storage of intellectual property. These strategies indicate forethought by business owners of disaster protective measures.

Other less-obvious actions are linked to business owners' practical knowledge of potential threats. Harriet, for example, understood the seasonal behaviour of natural hazards in her region. This knowledge becomes integrated into her stocktake, orders, the quantity of merchandise she displays and holds in reserve:

Most of the floods happen between January and June. I try very hard to bring my stock level down to a very manageable level and so I'll crucify a lot of it just after Christmas to bring it *[down]*.

Similarly, Chloe, Harriet and Martin report the influence of cues sources related to catchment areas and the river systems. They understood the delays corresponding with heavy rainfall and the time gap before floodwaters reach their area. These time delays indicate how long they have available to implement any evacuation plan, before power supplies are cut off, organise volunteers and relocate stock.

Readiness to act quickly because of pre-encounter planning (McLennan & Omodei, 1996) was in evidence by this sample of business owners. Several business owners reported sourcing information in the days and hours leading into their natural disaster. Different types of information were being sourced. Digital media, for example, enabled business owners to search government websites like the Bureau of Meteorology [Chloe, Lucas, Harriet & Martin], using government Apps [Chloe]; listening to the news via radio and television [Pippa]; and speaking with or having contact with social resources [Erin, Audrey, Chloe, Harriet & Martin]. Harriet indicated the decision to evacuate stock and equipment in her business community is guided by the advice of respected local identities:<sup>15</sup>

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<sup>15</sup> Refer as well to cue inventory, specifically social cues Table 6.4.

...we don't so much help each other, except for knowledge like, are you moving out Darcy [pseudonym]? Darcy's been here for 60 years or something. He's seen lots of floods and Jack [pseudonym] too. You know, you talk to both. They're instrumental in the decision, are we packing up or are we not.

#### **6.4 MANUFACTURED CAPITAL**

Manufactured capital focuses on the built environment. Such objects relate to buildings, infrastructure like transportation systems covering bridges, roads, rail systems, technologies and communications systems, and essential utilities such as waste management, electricity and gas, alongside business owners' tools of trade and equipment to support the supply of goods and services. In this sample of business owners four were notably impacted by manufactured capital disruption. Their discussion of manufactured capital focused principally on disruptions to electricity and, to a lesser extent, damage to business premises and their stock and assets.

Three businesses were directly affected by power outage [Pippa, Erin, Harriet & Martin]. For Pippa her business functions were lost immediately: "No power, no phone, no computer, no lighting, it's pretty big." She mobilised quickly, aware without power it's practically impossible to deliver client services "...you can't really [do anything]." Aware the power was unlikely to be restored expeditiously, especially as weather conditions deteriorated, she improvised services for those clients arriving at the shop. In between working with clients, she deployed her effort to reduce water leaks and continued messaging to clients via the business Facebook page using her mobile phone [Pippa].

Multiple breakdowns in manufactured capital sources influenced Erin's decisions: "We lost power and hence we lost communication systems for about two weeks here." The floods had washed away the "electricity substations [location] and half the [location] lost power for another month after that." The rural community was without road access in and out of the area and a bridge had been lost due to flooding: "We couldn't [leave the area] because of the floods as we'd lost bridges." Consequently, without a reliable power supply, Erin's digital business and communications system was inoperable. Complexities also arose from an inability to access essential living supplies caused by the infrastructure damage:

We were on gas and bucketing water, flushing toilets with buckets, going to bed early at night and on kerosene lamps, toss the contents of the fridge and lived out of cans.

Finding herself 'stranded' in her environment Erin mobilised quickly by relocating interstate taking her computer systems with her and: "found power, plugged in and went about business – in a place that had power." Noteworthy, Erin advised it is commonplace in her area to lose power: "Most Sundays we lose power. Internet. Not for a particularly long time...but it's enough to disrupt your records." Such a statement highlighted this business owner's awareness of these problems with Erin saying she has a power supply backup.

Martin and Harriet's business was impacted by the unprecedented flood inundation that reached 21.95 metres in height. The flood destroyed the building's electrical wiring, the extent of damage not immediately obvious to the business owners: "10 days after [*the flood*] and Energex [*electricity utilities provider*] came and turned the power on and smoke came out above [*the*] stock. All around the shop. It [*electrical wiring*] was still wet." It required the building site to be rewired, condensers, strip lights and security systems replaced, the cost covered by the business owner's savings (financial capital) having no flood insurance: "We had to rock that because we thought we might be able to get away with it without spending the money. The answer was we couldn't" [Martin]. Consequently, the re-opening of their business was delayed by several weeks.

Extensive structural damage to Fleur's commercial building was experienced for a second time. The building site was impacted by the weight of floodwaters on the foundations "when you've got 32 pounds per square inch of water sitting on top of that floor, the floor just caved in with the weight...". Unable to operate from a damaged building site, Fleur and her husband mobilised immediately, deploying their labour and time to repair and rebuild the site.

While most business owners are owner-occupiers of their premises and can initiate repairs quickly, Pippa as a tenant faced delays. She relied on her landlord to repair the damage to her shop. Despite mobilising quickly to minimise damage and loss at the point of disaster impact Pippa was beholden to her landlord to resolve the roof damage. Five months on from the event, at the time of interview, she reported: "I'm still trying to get proof from my landlord that the roof has been fixed." Further, she was waiting for the ceiling to be installed:

He's gonna come back and replace some of my panels at the top because it's all mouldy through there which is a health and safety issue.



## 6.5 FINANCIAL CAPITALS

Financial capital is a reference to business owners' economic resources. That is, their savings, revenue and income, credit and debt capital such as a loan. A business owner's acquisition of physical assets in the form of buildings, equipment and tools of the trade are sources of financial capital. In the disaster context financial help is available through government relief programs providing non-refundable grants of up to \$25,000 and low interest concessional loans. Private sector insurance, a form of risk transfer, and disaster preparedness (Josephson et al., 2017) are further forms of financial capital available to business owners who purchase it. During a natural disaster SBO stock of financial capital can be compromised and diminished in various ways. Deploying financial resources during a natural disaster was a consistent theme with business owners.

### 6.5.1 Sunk costs for business owners

This section elaborates on the disaster-induced financial losses business owners discussed, often invisible and absorbed by the business or the business owner. For example, Pippa reported damage to physical assets covering equipment, office furniture and retail products with indicative values: "I'd say we lost...two, four... twelve grand worth of goods." She also discussed other areas of significant losses. Because of power outage the landline was inoperable with the business losing prospective bookings from phone calls from new and established clientele which Pippa stated are vital to continuous trade: "...on average per day we probably get about 20 people ringing up making an appointment."

Additionally, power breakdown led to cutbacks in client services, cancelled appointments both daytime [which represents some 20 clients] and evening: "about fourteen clients that were supposed to be in that Thursday night." These bookings/cancellations represented [lost] forecasted revenue. Furthermore, several appointments for the weekend were cancelled because Pippa was unable to guarantee clients a reliable power supply. Nevertheless, Pippa moved quickly to remove her computer system from the flooded worksite, protecting \$10,000 of equipment and intellectual property from water spoilage. Unanticipated was the reputational damage caused to Pippa's business image as she scaled back services and closed the business.

Fleur’s financial costs were substantial. Vignette 1 details the economic impact of flooding from two natural disasters on Fleur and her husband. The purpose is to illuminate the cascading impact of recurrent disasters on a single business owner and their financial resources. The entries highlight background to the first flood in 2011 and the damage the couple dealt with at the time [paragraph 1]. The couple financed the repairs through a combination of insurance payout (around \$70,000 linked to insurance company approved builders to carry out the repairs), selling retirement assets and their own agency [paragraphs 1 and 2]. Ten months after the flood Fleur opened a new business in the retail space.

Vignette 1	Mobilising financial resources to support a business response and business resumption
<ol style="list-style-type: none"> <li>1. Fleur and her husband owned three commercial premises in a rural setting. The buildings were impacted by flooding in the 2011 Brisbane floods. Each was repaired with two having relatively limited damage. Once approved for re-opening, the buildings were leased. A third premise was extensively damaged, requiring substantial repairs. While some insurance was available it was insufficient to cover the extent of damages and the replacement items to refit the building. It took the couple 10 months to restore the building, needing to comply with local government and health regulations and their personal time and energy to complete the task.</li> <li>2. To meet the repair costs, the couple sold several of their retirement assets. This was partly due to the lost revenue from leasing the buildings: “we knew that we were going to have no money” because “... we were devoid of \$2450 for the rent a month.” Consequently to address the financial shortfalls the couple cut back on debts: “We started [<i>selling</i>] everything in April. We off loaded the [three] properties ...” Selling assets reduced the couple’s financial pressures while completing the repairs, as they were unemployed. The couple also secured a loan to complete the renovations: “we borrowed over \$178,000” and “...we had two \$10,000 credit cards and that’s how we went. We had \$200,000 then and that had to get everything inside done.”</li> <li>3. The building repairs were finished in November 2011. A new business was opened in the commercial space under Fleur’s management. In January 2013, 13 months after the new business was opened, the building was damaged for a second time [see manufactured capital]. Fleur carried forward the existing debts (loans and credit cards) into the second flood disaster. Despite having insurance in 2013, the insurance company denied the claim although Fleur eventually received \$18,000 to cover some damage after she protested.</li> <li>4. The insurance payout was insufficient to cover the second repairs. Additional funds were sourced through her bank. However, the application was rejected: “...we went to seek extra finance ...the bank came in ...and they said no.” Fleur’s mother-in-law provided financial support (\$40,000), along with a concessional loan from the former Queensland Rural Reconstruction Authority of \$130,000. An accountant was enlisted to complete the application process “... it cost \$600... for the paperwork.”</li> </ol>	

Fleur's business operated for 13 months before it was flooded in 2013. Into this second disaster the couple brought forward capital debts and credit cards [paragraph 3]. A small insurance payout was used to help repair the building [paragraph 3]. However, the funds were insufficient, thus the couple deployed their physical agency to complete the repairs. As the vignette highlights, Fleur was a beneficiary of a concessional loan provided by the government (a source of political capital). In addition, family funds, a source of social capital, were sourced to restore business operations [paragraph 4] and manage routine commitments:

... we had rates, which would be coming up. We had all of those infrastructure bills that you still get. We're still using electricity. We're still using water, a massive amount of water.

Despite having insurance in 2013 the insurance company denied the claim although Fleur eventually received \$18,000 to cover some damage after she complained:

... I jumped up like *[inaudible]* because that floor would never have collapsed if they had done that job properly in the first place and they gave us \$18,000.

Of note here is an absence of discussion associated with insurance companies' failure to investigate defective repairs. During interview Fleur indicated the employment of the contractors who carried out building repairs in 2011 was a result of an arrangement between the insurer and their preferred builder-provider. Thus, one element of natural disasters for SBOs is the financial and emotional consequences they carry for defective and faulty workmanship. This finding indicates a hidden cost absorbed by the SBOs that warrants further examination and attention in research.

### 6.5.2 Business closure

Financial capitals are compromised from business closures. To generate a cash flow business' need to be open and supply goods and services to the community. Business closures directly impact cash flow critical to meet financial obligations of regular bill commitments, employee wages, supplier contracts, and also to maintain the livelihoods of the business owner, their families and any employees (Cater & Chadwick, 2008; Greenbank, 2001; Jennings & Beaver, 1997; Runyan, 2006; Zolin & Kropp, 2006).

Table 6.7 details business owners directly impacted by business closure and the duration of closure.

**Table 6.7** Duration of closure of small businesses

SBO	Event year	Did not close	One hour - 3 days	4-7 days	8-21 days	22 days +
Pippa	2017		Closed over 2.5 days			
Erin	2011		The digital business was relocated once road networks and bridges were opened (suggested to be within 14 days)			
Lucas	2011			√ 4 days		
Lucas	2013			√ 7 days		
Fleur	2013					10 months
Chloe	2017				√ (3 weeks)	
Harriet & Martin	1999				√ (2 weeks)	

Pippa endeavoured to operate at sub-optimal capacity, but continuous power disruption compromised her routines for several days. By contrast, Harriet and Martin had to suspend operations. They initially closed for two weeks with flood depth having a bearing on delays to business resumption. Compared with the experience of a ‘normal flood’ which Harriet said usually means a business takes two to three days to restore and re-open the 1999 flooding was extraordinary. She indicated the scale of the flood dictates how long it takes to clean up the worksite: “there’s a noticeable difference between a one metre flood and three metres flood” [Harriet]. Harriet elaborated, saying more time is needed to “rebuild and merchandise” a flood-affected business, especially without a workforce to help clear the debris, clean the building and restock the display shelves. Retailers (business owners) she intimated clean up by themselves as human resources are scarce: “[business owners are on their own] flat out putting their own stock back” [Harriet] consequently they cannot extend help to each other.

With respect to Harriet’s observation on flood depth, prior research has found the greater the depth of a flood the greater the likelihood of delays in or reducing the chance of a business re-opening (Corey & Deitch, 2011; Lam et al., 2012). The findings in this study add support to flood depth being instrumental in deferring business resumption.

Like Harriet and Martin, Chloe required time to restore her worksite. It took some three weeks to clear the debris and return the site to its usual functions, a timeframe Chloe declared was ‘incredible’. Unlike Harriet and Martin, Chloe

benefitted from the mobilising of social capital resources activated by her networks. The extra human capital meant closure time was minimised, but critically so were stock losses. Social supports provided to Chloe are explored under social capital. Like Harriet and Martin, though, the magnitude of damage from inundation height, and the silt deposited on stock, compounded Chloe's clean-up. Thus, adding further weight to Lam et al.'s (2012) predictors of business re-opening linked to flood depth and unique hazard specific features. Conversely Lucas' business was closed for four days from inundation in 2011, then in 2013 the business was shut longer. The differential closure times are explained by other impacts as he explained:

The first time around I think we were closed for only three or four business days before we were back up and running. The second time around I think we were closed for a week, week and a-half just because we were dealing with so much more. '13 as well, at the same time, because we're staying with friends. We had two dogs and one of our dogs got hit by a car as well and we had to put her down. So, imagine you're like your business is flooded, your house flooded, and you just put your dog down (laughs).

Erin relocated interstate with extensive infrastructural damage to her community. However, what remained undisclosed was the length of delay before relocating interstate, the costs to relocate, and the upheaval to her usual routines.

The longest closure time for a business was 10 months (Fleur, 2013). The long delay in business resumption was due to the extent of physical damage to Fleur's building and the renovations needed.

The combined closure time across five businesses was just over 12 months. This raw calculation indicates for this sample of small businesses, closure represents lost productivity, prospective revenues, cash flow, and profit with Fleur's cumulative losses specifically, substantial. This study did not seek specific financial values attributed to business closure, however Comerio (2006) has carried out loss modelling for the downtime and operational failure of businesses related to earthquakes. Comerio (2006) contends a business owner should account for: planning time including site assessments, inspections, local government inspections; time for mobilising repairs, financing the repairs and carrying out repairs to damaged sites or rebuilding; and regulatory changes and lastly economic uncertainty. Hence small business closure is not only associated with productivity, sales and revenue losses, it can translate to having a multiplier effect in the local economy (Comerio, 2006; Zhang et al., 2009).

Business owners reported being closed is an opportunity cost to a business since “you can’t make up for what you have lost” [Lucas]. Moreover, once a business does re-open, the findings in this study suggest businesses can be faced with new challenges linked to an uncertain economic climate: “When we did re-open trade was very subdued” [Martin]. Moreover, trade may be more of a product of demand for certain types of goods and services over discretionary non-urgent items and services:

Certain businesses were in a position where they could continue to trade and did [prosper] - you know, so say like a hardware. They do really well. People want to go in and buy cleaning supplies and mops and brooms and building supplies to replace things that are damaged and board up windows. [Lucas]

### 6.5.3 Reflective practice in action

Processes that could be characterised as “reflective practices”, that describe the SBOs’ ability to review and evaluate their actions and learn from their disaster experience, were in evidence. Business owners’ personal experience with a natural disaster was found to facilitate their ‘experiential learning’ and a re-appraisal of their workplace routines and practices. Pippa and Lucas illuminate the point. Pippa re-evaluated the suitability of her online booking system after the disaster and overhauled it:

...now we've got our online booking system so I can look up on my phone that one computer system I've linked to my phone. So, say if that was ever to happen again I can go into my client's appointments and get their number through my phone. If we were to have no power I can access it and I can call our clients and just explain to them that we have no power.

Other measures were taken by Pippa in collaboration with the adjoining business owner. The two contracted a maintenance person to undertake regular gutter clearance of the building: “Two hundred a month so it's about a hundred [each], he just fixes up our back, like cleans up all the leaves and everything...about \$1200 a year.” They were also investigating options to safeguard the roof on their leased premises:

...we've got a couple of quotes to replace the roof and we're looking at around about six or seven grand...to protect myself and my [business] and clients and staff...A roof on a building that's not ours.

After his first experience of flooding Lucas reviewed his emergency plan. When he faced the second flood his protective measures were refined:

...when you look on BOM<sup>16</sup> and it says there was over a metre of rain and you're like "Well how does that affect us?" ...that's at that point then when

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<sup>16</sup> Referring to Australian Bureau of Meteorology weather website

you're like "Ah shit, it'll be worse." So, second time around - we took a little bit better precaution...we silicone up around the doors...We put plastic down, we sand-bagged...dynabolt into the wall which stay in the wall and then we put up our marine ply with foam rubber on the back of it and it's all pre-drilled with bolts...they just basically bolt up over the front of the shop to seal the sort of front of the shop so it's both for damage but also flooding...underneath the shop there are breather holes in that which we went through and sealed up... Those breather holes have exhaust fans in them to circulate the air. [In 2011] we had huge problems with rising damp and mould...under the shop...you don't think about that sort of stuff but that goes on for months and months and months.

Reflective practices of SBOs learnings gained from lived experiences of going through a natural disaster are cognitive processes. However, the inclusion of self-reflection practices as an explicit process of review in the RPD model is missing.

#### **6.5.4 Grants and loans**

The findings related to the policy and procedural aspects of grants and loans provided by public instrumentalities is reported in Chapter 7 *Institutional Inputs*. The findings from business owners who received a grant and/or a loan are presented here. Grants are tax-free one-off payments for eligible small businesses impacted by a natural disaster. Grants can defray the out-of-pocket expenses of business owners who expend income to re-open their business.

#### **6.5.5 SBO access to government assistance – Grants**

Several of the SBOs indicated they received a government sponsored non-refundable grant. Lucas received two grants (one in 2011 and another in 2013), each valued at \$5000 for flood damage to his premises. The grants were deployed to cover his business-related clean-up costs and served as an interim cash relief until his insurance claim was paid. Lucas heard about the grants program from Queensland Government [QRIDA] officials. They visited each small business in his community to explain their service and their disaster relief options. At the point of contact he was given a grant application form. Further QRIDA officials mentioned they were at the local 'recovery centre' to offer information and advice about relief and assistance available to them [Lucas].

Conversely Chloe received the full \$25,000 grant payment. She said: 'I've applied for the \$25,000 and I've got my \$25,000. This was due to the significant damage to her business entitling it to the full amount: "...It wasn't hard because I could

prove a lot higher expense.” Like Lucas, it was public officials (local government representatives) who came to her worksite and spoke about the grants scheme and left the paperwork.

#### **6.5.6 SBO access to government assistance – Loans**

Fleur was the only recipient of a low-interest concessional loan from QRIDA. Fleur contended: “we would have been buggered without the QRIDA loan because that was only 1.7% interest...that was really good”.

In terms of the loan details Fleur said: “We borrowed \$180k.” The business had debts from the 2011 Brisbane Floods carried into the second flood event in 2013 [*see vignette 1 and sub-section 6.5.1*]. Fleur indicated it took seven years out of her retirement together with the sale of the family property to close on disaster damage induced business debts, as she describes next:

We paid Paul’s mum back...There’s still no money in cash flow [running the current business]. I think it might have been \$180K we borrowed off them. But we only ended up after what six years...2011 we got that through in about the May or June. We paid it off now 2017 June, six years. And we owed them \$120000. ...We sold all the [items] off. They all went and luckily, we got great money for the [items]. But we couldn’t manage [the property]...so we sold everything....Got rid of [the equipment]... all that sort of stuff and that money just went into the bank into the...you know into the business so that we could pay [what was] still outstanding. We just, when the [family property] went through, we paid them [QRIDA] immediately. I’ve still got the credit cards.

#### **6.5.7 Insurance**

Insurance is identified as a risk transfer measure and a passive source of mitigation to help SBOs manage losses from hazardous events (Josephson et al., 2017). It is promoted by governments as a crucial component of emergency management requiring SBO to understand their risks and make plans to cover such risks including adequate insurance coverage (COAG, 2011). Insurance formed a significant sub-category theme of financial capital. Multiple stakeholder voices are blended in this section to understand the complex findings on this topic and its deployment by this sample of SBOs.

Table 6.8 details the business owners’ investment in insurance at the time of their respective disaster events. The table reveals the split for this sample of business owner-managers with and without insurance is almost equal. Five SBOs had some form of insurance while four stated they had no insurance cover.



**Table 6.8** Insurance held by SBOs at the time of their natural disaster event

<b>SBO</b>	<b>Insurance</b>	<b>Exemplar Quotes</b>
<b>Pippa</b>	Yes	“you have too because I had so much damage in here”
<b>Erin</b>	No	“the only insurance offered is for [type of services] ...which we don’t really, don’t fit. The only insurance that works is if you ...continue to pay from before the catastrophe”
<b>Lucas</b>	Yes 2011/13	“The only thing was like the Group Policy”
<b>Fleur</b>	Yes 2011/13	“Had insurance but a claim was rejected in 2013”
<b>Mia</b>	Yes	“Fully insured”
<b>Chloe</b>	No	“Can’t get it”
<b>Harriet &amp; Martin</b>	No	“At the time of the event in 1999”
<b>Audrey</b>	Yes	“Fully insured for everything”
<b>Sally &amp; Sage</b>	No	“You can’t get [ <i>business interruption</i> ] insurance”

*Notes:* Transcripts and Information Sheets – information is based on insurance coverage at the time of the disaster event nominated by the SBO.

With respect to insurance, several types of insurance were referenced by SBOs. Examples include public liability, business interruption, contents, building and vehicle registration. It was not always clear which insurance business owners had with only one business owner nominating business interruption insurance [Audrey]. A second business owner [Mia] implied her businesses were covered by business interruption insurance ‘fully insured’. Commonly SBO carried public liability and contents insurance.

For some business owners [Mia, Audrey] insurance was conditional for operating in their industry or is incorporated into the terms of a loan agreement:

We’re not actually allowed to operate unless we are insured...The [business] must be insured, public liability. I have to have \$20 million for the [type of activities]. [Mia]

Insured for...fire, floods, hazards, business interruption insurance if stock and fit outs. Definitely fully insured for...it’s too much stock. Obviously, I have financial commitments with banks and things, so business interruption is important to me as well. [Audrey]

Not having insurance was inconceivable for one business owner:

We’re always had insurance...we’re not going to go and risk anything...I’m not going to lose my house, which is why I have insurance. When we get insurance, we get insured properly. I can’t afford not to pay it. I can’t afford it if something terrible happened. No point to me running a business if I don’t have insurance. [Mia]

Explanations given for setting aside an insurance policy are twofold. The first reason relates to the cost of insurance [Erin, Harriet, Lucas, Sage, Chloe] and the second reason is linked to the labelling of a location as “flood prone”. A salient insight was offered by Chloe who recounted a conversation with an insurance provider. She asked the broker what a flood insurance policy covered for her home-based business. The reply: “[I] can only get flood insurance for the house” not the office under the house. Chloe explained since the business was in a flood zone she was unable to get insurance. She further elaborated with respect to the cost of a premium: “Even if I could [get it] it would be exorbitantly high that I wouldn’t be in business” [Chloe]. A perspective reinforced by Lucas: “when it comes to commercial it’s basically off the table.”

With reference to the costs of an insurance policy, SBOs reported wide-ranging premiums. Chloe, for example, continuing from the previous statements, indicated insurance for “the house...which is above 1974 flood level...that was \$43,000 a year”, an amount she asserted firmly “I’m not paying” (laughs). Others also reinforced high premiums:

We pay a crapload of that stuff because we’ve got to have public liability insurance...I want to be insured for replacement value...our insurance, I’m going to say would be at least \$15 grand a year. [Mia]

I haven’t got contents. I’ve just got to protect people – public liability insurance – they wanted \$18,000 a year for insurance – we got that down to \$4,500. [Fleur]

### ***Hazard-prone environments and insurance***

Key public sector informants discussed the issues surrounding flood-prone environments and the relationship to insurance. Ava and Charlie stated living and operating a business in a flood-prone area is problematic when it comes to insurance:

Flood levels have been altered over the previous years because of the [Brisbane] 2011 floods, and so those floods and that overlay, if you like, of a flood overlay gets reviewed after each [flood] event. So, properties that have found themselves having been flood-affected, their property having been identified as that, and therefore their insurance may be harder to get or more expensive. [Ava]

Consequently, business location can dictate insurance options. Ava expanded on the issue:

If your property has been identified and included in flood mapping...yes it does affect your insurance. Then either [a business] cannot get insurance or the insurance premiums are too high for them to bear and then, yes...insurance is a big issue.

The practical implications of hazard-prone environments become apparent when an SBO is looking to start up a business or if currently operating one in a flood zone:

If your business is in an area that is prone to flooding there are many more conditions and restrictions or, you know, refusal[s] [related to the development application] because it's not deemed safe or appropriate to develop in that particular area. [Charlie]

Consistent with the views of business owners, several key informants acknowledged the challenging environment business owners face with respect to insurance. The following is an indicative quote:

You could be looking at something that is uninsurable, or the premium is so prohibitive that it's not worth it. [Matilda]

### ***Insurance companies and insurance assessments***

Timely insurance assessment and payouts help defray the costs borne by business owners from disaster-induced damages and losses. Until SBOs receive their claim payouts they absorb the replacement costs of equipment and assets and extraordinary out-of-pocket expenses to continue operating the business. Most SBOs had a negative perspective of insurance providers, finding them unhelpful to work with. Lucas and Fleur expressed reinforcing views:

Insurance companies, I've always said, you know, they're happy to take your premiums, they're less happy to payout. [Lucas]

I think when you need their help they're not there. It's bottom line. But when they talk to you about getting cover, you know, being protected, it's all about you. Suddenly you become the bottom-line when there's a disaster. [Fleur]

Business owners who lodged insurance claims for disaster damage were generally negative with respect to providers' timeliness to deal with their claims. Five months after Pippa had her assessment and lodged a claim for flooding she declared: "I still haven't been paid that insurance, I'm still waiting." Pippa was seeking reimbursement of more than \$12,000 as a minimum for damaged assets and equipment. Pippa replaced the disaster-damaged equipment initially to continue

business operations using her business savings or on credit cards. For Pippa, the long delay in an insurance payout was a cost burden personally carried as a sole trader/business owner.

Lucas, in discussing his flood damages claim, remarked:

The assessor [took] maybe a week and a half to come...Insurance payout maybe about \$12,000 which covered things like replacement of carpets...damage or repairs to cabinetry and replacement of...[items like] drills and things like that...Payout time...probably three months. [Lucas]

Two key public sector informants explored the issues of assessment and presented contrary narratives on the issue. On the one hand Menzies observed assessors acted fast on policy holders' claims:

... [insurance company], insurance at the [area], those people they were on the front foot. They engaged with their policy holders very quickly. Suggest a lot of assessments were done within a month of the event. [Menzies]

However, Menzies qualified the statement suggesting what occurs after the initial assessment, that is the payment of a claim, is where challenges emerge: "It's what flows on from there seems to be the issue".

Emilio felt SBOs do experience lengthy delays in assessment with a direct follow-on effect on their business and its performance. He described the case of an anchor tenant in a shopping complex which took weeks to complete an assessment. In the meantime, the long delay marginalised already-vulnerable small business tenants spatially neighbouring the anchor business. The scenario as described by Emilio:

We had...the [name of large corporation] in the middle of [complex location] had been flooded. And it was in one of those complexes where you have a bakery and...sandwich shop, and a coffee shop, and what have you...and the [large corporation] was closed and sealed up and waiting for...insurance assessment. And it stayed that way for [five and half] weeks. ...And as you can imagine, the cold rooms that weren't cold, and the food, you know, perishables that perished made it a fairly aromatic neighbourhood. ...so...these small businesses that were quite ready to recover and re-open and get on with things, just couldn't. [Emilio]

Emilio advocated for expedient insurance assessments to offer certainty for business claimants. In the weeks that the anchor business was shut the odours from the decomposing food and perishables discouraged shoppers entering the mall but subjected the small business tenants to 'the general health issues of that place' and a downturn in patronage. The impact of lost custom being "...there were about

[x number] of them [business], they muddled through. ...[and] didn't have a particularly good year”.

Multiple government departments have responsibilities to input information and data to assist state and federal authorities' decisions about funding and relief aid to small business. Insurance claims and claim payouts are monitored by public instrumentalities at formal intergovernmental meetings with these issues a standard agenda item for discussion:

Insurance delays [and delays in claim payouts] are reported through [organisations-departments] to state government...[they] get raised...[and] weekly reports are provided. [Menzies]

Indeed, it was noted by key public sector informants that business owners are caught when it comes to insurance and grant assistance. Grants become a viable substitute for insurance to help a business carry on initially in the aftereffects of a natural disaster:

Loans and grants – it's certainly useful when there have been significant damage or significant damage that insurance companies won't pay for...[the] grants, at times have just been paying the excess...[it is] acknowledged that people have got insurance; maybe their premiums are a little bit lower by increasing their excess and so [grants] have been paying the excess...insurance company saying this is your cost for repair, here's the excess. [Menzies]

## **6.6 SOCIAL CAPITAL**

The sub-theme of social capital, a reference to those social resources found in SBO networks and contacts they can access or deploy purposively (Lin, Cook, & Burt, 2001, p. 12) in a natural disaster, are examined next. Social capital resources support SBOs' private response to the disaster, and contrast with the public affordances outlined in Chapter 7. While public affordances are available to all small businesses in a disaster-struck community, social capital resources are inherent in the connections and networks of individual business owners (Coleman, 1988), hence they are exclusively available to some businesses, not all.

### **6.6.1 Individual disaster response**

Section 6.2 established business owners were engaged in two decision types, logistical and the safety and wellbeing of employees and clients. The decisions and associated tasks were separated according to the stages of the response phase: *before impact*

activities of stock evacuation [Harriet & Martin], implementation of flood plan [Chloe] and instituting protective measures [Lucas]: *during-impact* carrying out protective measures to minimise damage and injury or harm [Pippa] and *after impact* clean-up and restoration of business sites [Chloe, Harriet & Martin, Lucas, Fleur]. Protecting the safety and wellbeing of staff and clients was a decision being considered *before* and *during* the disaster [Pippa, Chloe].

Notwithstanding the tasks to be undertaken SBOs understand they have no entitlement to physical assistance from governments during a disaster response (COAG, 2011; Zolin & Kropp, 2006). Consequently, SBOs act privately to deal with their response activities: “when it comes to natural disaster help businesses don’t get any...” therefore they “just deal with it” [Audrey].

Needless to say, despite the political requirement to be self-reliant and self-organising when confronted with a disaster (COAG, 2011), business owners can be overwhelmed by the tasks before them:

At the time it was kind of like such a mountainous job. [Chloe]

You know, it's a big shock to move in a flood. [Martin]

Benita observed the task of dealing with such an event singlehandedly is challenging as she has helped many SBOs clean up after a flood and seen the emotional demand on business owners:

The feeling of isolation and looking around and thinking “God, you know, where do I start? ...And that person can’t possibly cope on their own...I’ve got to do this all by myself. And if you’re lucky you’ll get friends and neighbours who chip in, but not everyone is in that environment. [Benita]

Benita’s assessment of business owners varying in the level of support they receive during and in the aftermath of a disaster corresponds with this study’s findings. The study sample of SBOs confirm differential access to the stock of bonding, bridging and linking social capital (Aldrich & Meyer, 2015). Some enter a natural disaster event unaided by social resources while others receive support.

Fleur and Lucas responded privately to the two disasters that impacted their businesses (2011 and 2013). Descriptions of them deploying their personal efforts to respond to a disaster is captured in their own words next. Rather than presenting a single natural disaster event these business owners provided comparisons of how they

mobilised over the successive events, illuminating the time, physical and emotional commitment involved. Fleur's story is presented first in relation to the 2011 flooding:

Paul and I were working 13-14 hours in the shop...we still owned [a property]...We worked till say 8:00-9:00 at night, raced over to the [property] to feed everything there, have a sleep, get up 5:00 in the morning, race back over to the shop. It was every day seven days a week. [Fleur]

In 2013, with the couple's insurance claim rejected, the couple principally did all the renovations: "Paul and I then had to do three-quarters of the work." [Fleur] Notably, as Fleur's actions were repeated for 10 months each time it provides an indication of the physical exertion and commitment invested but also the lost time in business revenue and livelihood income.

In 2011 Lucas, like Fleur, had a disciplined routine to restore his premises:

You get into the shop at six o'clock in the morning, you clean up, you do everything, you go home at six o'clock at night or whatever. You go to your house, you have a hot shower, you cook a meal, you go to bed... [Lucas]

Then with the 2013 inundation Lucas restored his street business and his residence in which his wife ran her home-based business, increasing the couple's workload:

the 2013 event...[the flood height] it was 20 centimetres higher...which meant that it came into our house. ...'13 our house flooded, so what we were doing was we were in the shop at six o'clock in the morning, or five o'clock...and going through till 12 o'clock lunchtime. And then at lunchtime we'd go home and do from 12 till sundown at home trying to clean up at home too...We were staying at a friend's house for that sort of week and a-half because we didn't have power on at home. So, you're at the convenience of someone else living in someone else's house. So, there was stress associated with that. ...you know, you just can't go home and relax.

### 6.6.2 Recipients of social capital – 'communities' chip in

Access to and deployment of social capital resources were important to four business owners and contributed to their business decisions. Social capital resources were critical to Chloe, Pippa, Harriet and Martin to carry out their private response. As Benita observed, "a whole bunch of people will chip in" in a natural disaster with the qualification a *quid pro quo* that at some future point: "you hope that if the same thing happens to you others will chip in and help [you]."

The reciprocation of support by community members noted by Benita was coincidentally reinforced by landlords Fleur, Martin and Harriet. Fleur and her husband

helped their tenants' clean up, repair and repaint their leased building. Harriet and Martin also helped their tenants evacuate stock twice. It is suggested that Martin, Harriet and Fleur, who each had retired but returned to business ownership because of disaster-induced factors, were acutely aware of the need to protect their physical assets for the future. The commercial spaces they own and lease form part of their retirement assets and self-funded superannuation. Therefore, a trilogy of concerns faces some commercial property owners – maintaining integrity of physical building, protection of assets for future income generation and a commitment to support local businesses. Business closure cascades to loss of rental income, demise of businesses in a community (Zhang et al., 2009) and vacant real estate which over time can deteriorate and be subject to vandalism. Harriet and Martin confirmed they currently run a business surrounded by vacant shops unlikely to be rented because of the tag 'hazard-prone'.<sup>17</sup>

The three business owners [Chloe, Pippa Harriet & Martin] accessed or mobilised one or more of three sources of social capital: bonding, bridging and linking.

### ***Bonding social capital***

Instances of bonding social capital were primarily associated with two business owners, Chloe and Pippa. Chloe benefitted from close ties at two stages of the disaster response phase, the before the impact and post-impact stages. In the pre-impact stage, her employees were deployed from their usual routines to implement the flood plan three days before the floodwaters peaked at her business. Stock and equipment were moved to higher ground: "...we started shifting stock on the Wednesday and then the Thursday we did some more." A contact with insider political connections warned Chloe the flood heights forecasted were going to be higher, compelling her to change tack "...I realised that...it was going to be higher than we thought..." so on the Friday I went "Right this is not good, so this is what we're going to do..." When the flood receded, she said staff "worked tirelessly" [Chloe] for three weeks to return the site to its usual operations.

Family members helped with the flood plan and clean-up as well: "it was just my daughter, myself and my nephew." Of note here, Chloe's sister-in-law, who is 87 and legally blind, lives separately on the same property. Her home flooded with Chloe

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<sup>17</sup> In this study, many participants 'chipped in' to help business owners during a disaster response – Benita, Rueben, Roman, Fleur, Harriet & Martin.



and her nephew cleaning up her property too. For last minute tasks Chloe leveraged long-standing connections with her neighbours:

My daughter and I, we got a couple of the neighbours to give us a hand with some of the smaller stock. We had to get that all off the [surface], so we got them to help...until it was dark. [Chloe]

Friends of Chloe's daughter, her former bosses and workplace colleagues contributed their labour and time: "they heard...they all came here...in gumboots and with shovels...first bit [early morning]." Their appearance was memorable as these 'weak ties' Chloe said had little exposure to the type of clean-up tasks to be done: "this is not their forte." Nevertheless, they came and immersed themselves in mud and the clean-up [Chloe] providing physical and emotional support to Chloe, her business and staff.

Pippa conversely operates a street-front business that benefitted from neighbouring business owners. Her critical decision event began early morning around 7.30am when she discovered the flooded worksite. Pippa said it was commonplace for local business owners to "look out for each other" when facing a crisis. Consequently, when her business was flooding close-by business operators mobilised quickly to help stabilise the situation arriving with "mops and buckets". Another business owner arrived with food. "The lady that owns the café gave us, like, a whole bunch of sandwiches" because she knew "we were stressed out". Clients assisted too: "Even our clients were helping to sweep water out the front". One client, coincidentally another SBO, offered to deploy his generator [manufactured capital] to keep the business functioning: "I'll come and hook it up if you have no power. You can just have it."

### ***Bridging social capital***

Bridging social capital played a pivotal role for business owners Harriet and Martin and Chloe. Martin and Harriet were assisted by volunteers, many of whom they knew: "We had 60 people working in the shop here to help us move \$250,000 worth of stock upstairs." Chloe, on the other hand, was supported through several bridging capital networks. Some assistance was organised by one of her contacts, a non-profit business owner, who understood and witnessed first-hand the scale of the clean-up confronting Chloe. He used Facebook to call the community to action: "[he] put a call out", so consequently "when the word got out to the greater community" help appeared at the worksite to clear the debris, clean the silt from the stock, equipment and buildings: "It

was all organised [hosing and cleaning of mud] through the not-for-profit...[name of person], he's been an absolute gem." Chloe describes the assistance in the following commentary:

One day I had 250 volunteers here. For three hours the *[faith-based organisation]* came and they coordinated everything. They coordinated the people...they came here, they were packed everywhere. We even had...one guy just showing people where to park. They came with everything they needed and then they also had the lunch van came with people making lunches ...there were just plates and plates and plates of sandwiches for a week...for my guys and everybody.

When the volunteers were leaving Chloe's recounts their gratitude: "everybody who came here, all [the volunteers] they said, 'Thank you for letting us come':

Both Chloe and Harriet were helped by 'randoms', people unknown to them yet they committed time, effort and their energy to assist these business owners to respond to the disaster and restore operations. Some sources of human capital contributed both their physical labour [for weeks at a time] [Chloe] and human capital skills and knowledge: "He's a tradie...was stuck in a hotel and couldn't move north, wonders what he can do" [Harriet]. Further, some made 'contributions' in addition to time and physical effort in the form of in-kind financial donations:

One of the guys from [charitable organisation] had his own business, and he came here, and he looked, and he had a shovel, and he goes, "Oh this is ridiculous." So he went out at his own cost, hired a bobcat. And he wouldn't let me pay for it. Got in there and he just cleaned and cleaned and cleaned for two days. [Chloe]

For some members of the community their contribution in the disaster proved a reputational redemption:

One of the guys who was a real feral about [town], he was an incredible help. Doing the ceiling, the awnings....I mean, I gave him a lot of discount...totally changed my mind about him. [Harriet]

Chloe contended the support provided through her social capital contacts and their networks secured her business survival prospects:

Without the volunteers, just totally from [types of social capital organisations] we wouldn't have cleaned up in the time we did and so much stock would [have been destroyed] we probably would have struggled as a business...the community groups were the saving grace.

### *Linking social capital*

Linking social capital was crucial to Chloe, Harriet and Martin. Both business owners benefitted from their association with political connections gaining access to ‘insider intelligence’ or to support mobilising extra resources. Elsewhere in the findings disaster warning information was passed on verbally to the business owners from council personnel, politicians and SES members. This information quickly reshaped SBOs’ response decisions to act in particular ways. Political connections were also instrumental in connecting business owners to community supports or acted as an intermediary to mobilise the right help:

[The councillor]...she rang me and said, "Look I'll call the SES if you want, they'll get you out of there." [Chloe]

[a politician]...she was advised by a federal member [about the state of flood affected businesses]. And she came to see for herself what was going on, and at that stage we were just starting the clean-up, and she said, ‘Do you want some help?’ I said, "No I'll be fine." She said, ‘I can send out an [Mud] Army.’ We've got mud...it's real thick and no Mud Army can handle that, they'll just run away. So, thanks but no thanks.” [Chloe]

Chloe re-assessed her situation after days of physical toil that seemed to make little dent in the clean-up around the worksite, calling the official:

You know after the weekend when we were just getting nowhere, I rang her and said, "Yeah we need help." So, she organised a lot of the community groups.

Cooperation between political capitals and SBOs was also reported as a help to business owners coping with the aftermath response and restoration activities. Before the flood Chloe had arranged with her local council to access water hydrants and hoses to aid hosing down the worksite:

We got some high-pressure water blasters and this time I got them early. I put them [council] on standby that we're going to be needing them and so they made sure they're available, so we got those. The council was great. [Chloe]

Similarly, Harriet reported close cooperation between the local fire brigade and the business sector when the community has a flood: “valuable assistance is received from the Fire Service and SES volunteers who follow through closely as the [flood] waters recede. They hose out the shop[s].” [Harriet]

### *Negative undertones emerging from social capital*

While the previous section has highlighted positive benefits accruing from bonding, bridging, and linking social capital negative consequences were also recognised within the same sources of social capital. Pippa experienced backlash from her clients because she closed the business for day and evening appointments, despite posting messages on Facebook which many appeared to ignore: "...a lot of clients were ringing saying, 'Am I still fine to come down?' Like, I said "no!" Several made explicit remarks at Pippa's lack of backup planning to maintain service delivery:

A lot of my clients did have a little comment like "Oh you didn't think to get a generator". Like they were a bit annoyed that they didn't get [their scheduled services].

## **6.7 SUMMARY**

Chapter 6 has presented the analysis of the key themes emerging from the overarching theme of Minding my own Business. These decisions were influenced by and arranged around five business capitals of human, natural, manufactured, financial and social capital. First, the human agency of the SBO was detailed including demographic information relating to their education and training, work experience and time in business ownership. Overall, the sample of SBOs was found to have wide-ranging experiences supporting a cognitive store of knowledge owning and running a business and contributing to rapid recognition of like situations.

The second theme of natural capitals was presented and revealed most of these business owners had been through at least one natural disaster, but many were experiencing multiple events. These disasters were incrementally occurring on a greater scale and intensity with the majority of disasters happening to SBOs in the same workplace they operated from for many years, hence their workplaces were familiar. Most of the business owners had a range of protective measures in place to help prepare for a disaster.

Section 6.3 presented the results of the decisions faced by SBO. Two main categories of decisions were established, Logistical and Safety and Wellbeing. It was found SBOs could recognise the gravity of the situation from the salient features in their workplace, that is *in situ* environment and from external cues. Business owners highlighted six crucial cue sources that influenced their decision process and decisions (infrastructural, safety and wellbeing, environmental, nature of the

problem, social and media/digital cues). Social and mainstream media/digital cues proved to be important external sources SBOs had a reliance on to support the *in situ* cues. The majority of the SBOs were primed to recognise their situation and made decisions based on a past event matching the current disaster. Thus, a consequence of SBO extensive experiences including exposure to natural disasters meant these business owners had a high propensity to generate workable solutions without delay. Being able to compare the situation with some past event, SBO processed decisions as a straightforward match or Level 1 RPD scenario. To a lesser extent, an SBO carried out a deliberative decision-making strategy (i.e., Chloe) when they were conflicted with mixed disaster messaging from authorities, hence the decision process corresponded with a Level 2 RPD approach.

Other factors of long-term planning and pre-primed readiness contributed to fast decision making in addition to learnings and reflection in the aftermath of the disaster.

Manufactured capital disruption was then presented. The breakdown in infrastructure and utilities was uneven across SBOs thus affecting their decision types. It was common for the SBOs impacted by infrastructural damage and utilities downtime to make decisions quickly. Cues relevant to infrastructural and utilities such as loss of power and building damage have an immediate impact on a business. Thus, SBOs have few options other than to cease operations, delay business operations or close for trading. Scale of a disaster had an influence on infrastructure and utilities' closure time and restoration.

The fourth theme of financial capital explored the importance of economic resources. Generally, infrastructural and utilities cues signalled a diminishing or degradation in the stock of economic resources from damage or utilities failure. Business owners' stock of financial resources was adversely impacted by infrastructure and utilities, with a lack of uniformity in the uptake of insurance. Response and recovery decisions were linked to government grants and loans.

Finally, the social capital findings were presented. It was identified three sources of social capital cues were instrumental to support SBO decisions. Bonding, bridging and linking social capital were accessed by various business owners. In respect to decisions, different levels of importance were attributed to each source of social capital.

The next chapter presents the findings from the theme Institutional Inputs.

## Chapter 7: Institutional inputs

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This chapter is directed towards the second global theme of *Institutional Inputs*. It attends to the findings from interviews with key informants with background knowledge and experience of disaster management related to public, private and non-government sectors. The aim of the chapter is to explore the affordances offered to the small business sector by political capitals. Here, political capitals reflect the laws, policies, processes, formal institutions and political supports that contribute to disaster management across public, private and non-profit sectors. The political capitals consolidate the multiple business capitals framework to capture the support small business receives during a natural disaster. In this chapter the findings answer the third research question of the study:

What are the affordances provided by external business stakeholders, notably governments and non-government entities, to assist small business owners to maintain business continuity after natural disasters?

The chapter is structured around three sub-themes. The first sub-theme considers the *Disaster Management Governance Arrangements* by introducing general details about the disaster management legislative base in Queensland. With respect to the response phase, the sub-theme relates to the temporal stages of before and after the impact of a natural disaster. Sub-theme 2 *Communicating with the Community* turns to data about government and non-government organisations curating warnings and disaster communications to the community ahead of a natural disaster, while sub-theme 3 *Institutional Response and Recovery Assistance* documents examples of the relief and assistance measures available to the small business sector.

While the section cuts across the before, during and after stages of the response phase longer-term activities carried out within the disaster cycle of prevention, preparedness and recovery functions are canvassed.

To reiterate, this study is situated in the response phase of the disaster cycle (PPRR). The phase focusses on implementing measures necessary to protect a small business when facing an imminent event. Governments assume the community, including the business sector, will have carried out risk assessments of their business

with disaster response plans in place to minimise the effects of a natural disaster. When people are affected by a natural disaster the government has instituted relief and assistance measures (Queensland Government, 2018).

In the next section the findings reported are disaster management arrangements in action that relate to Queensland. Studies, according to the literature review at Chapter 3, neglect to provide political governance arrangements nor provide detailed information about how these arrangements translate at the coalface. This study begins this step providing an opportunity for cross jurisdictional comparison.

## **7.1 SUB-THEME 1: DISASTER MANAGEMENT GOVERNANCE ARRANGEMENTS**

Disaster Management Governance Arrangements describe some of the relevant triggers that drive the way Queensland public authorities and emergency management services respond to a disaster, that is political capitals. This section is a snapshot of actions rather than a definitive coverage of all actions and measures. This superficial insight reflects the small population sample interviewed with the knowledge and skills to provide the relevant information.

Responding to a disaster in Queensland is set out in the *Disaster Management Act 2003* (Qld) [Nick]. The legislation contains the definition of a disaster, articulates the arrangements for disaster management and lists the roles and responsibilities of relevant stakeholders across the tiers of government (Queensland Government, 2018a). Queensland differs from other jurisdictions in Australia by applying the term ‘disaster’ to describe disruptive, non-routine events:

A disaster is a serious disruption in a community, caused by the impact of an event, that requires a significant coordinated response by the State and other entities to help the community recover from the disruption (S13, *Disaster Management Act 2003 Qld*)

In contrast, the other Australian jurisdictions use the term ‘emergency’ [Nick] when referencing disaster management arrangements. Despite the existence in terminology differences Queensland remains committed to the Australian Government’s national disaster policy guidelines. “We also do try as much as possible to apply the national guidelines to everything that we do” [Nick]. However, Nick stated that the independence of each Australian jurisdiction to establish disaster management arrangements is recognised, “But also, like I said, we are dictated by the [Queensland]

state” legislation and its policy and procedural guidelines (Eburn, 2013; Queensland Government, 2018a).

How the definition of a disaster translates at the coalface and the disaster management arrangements was explained in the following extract from Nick’s interview:

The first element is that it requires a multi-agency response. So, for instance, a house fire, just a response by the fire brigade, it’s not a disaster. It’s considered an incident. Once you get to an event that requires fire, ambulance, police and other agencies to become involved, that’s when it starts to look like a disaster, but then it also has to meet the criteria of disrupt, a significant disruption to community. ...some of the fires that we’ve had have been significant disruptions, and they were, that’s where you start to get to the level of disaster.

Both the definition and the example distinguish a disaster by its disruptive capacity within a community and its scale of impact. Not every emergency or crisis in the community will be classified as a disaster; most would fall within the criteria of everyday incidents. First responders, notably the essential services of fire, police and ambulance, play a role in the response (Fitzgerald et al., 2017).

The use of the term ‘event’ in the definition of a disaster encapsulates wide-ranging types, both natural in origin (earthquake, flood, storm, tsunami) and biological, industrial or infrastructural disruption (ss 16 (a) (b) *Disaster Management Act 2003*) rather than narrowly scoped. The defining of a disaster in this way recognises an ‘all-hazards’ approach to potential disasters (Rogers, 2011). This is a perspective congruent with the principles and guidelines established by the Australian Government which cascades through to the Queensland Government and is reflected in official documents (AIDR, 2019; COAG, 2011; Queensland Government, 2018a).

Disasters vary in scale and magnitude. Some disaster events require a multi-jurisdictional response. In a practical sense the local resources available to respond to an event are depleted [Nick]. When such circumstances arise the event demand on resources exceed the day-to-day capacity of the prescribed statutory authority (COAG, 2011). In such disaster circumstances first responders will seek to mobilise extra resources from other jurisdictions. This needs the LGA to formally request extra resources. However, Nick observes that such requests are infrequent: “in the last 12 years ... not once have we had a request [sent] to district for support apart from a



disaster declaration” because “we've been able to run the disaster or manage the disaster within our local capabilities”.

### 7.1.1 Declaring a disaster

The declaration of a disaster focusses on a formal procedure that allows for declared disaster powers under the *Disaster Management Act 2003* (s64-s69). Specific powers relate to the preservation of human life and their protection from injury or property damage (Queensland Government, 2018a). To declare a disaster involves a specific authority. A disaster declaration needs a public officer to pronounce such a situation has happened. “A police officer needs to provide the authorisation before there can be a declaration” [Nick]. Once a declaration is made it invokes certain actions. “It allows for extra powers to be used by those people on the ground [for] things like forced evacuations” [Nick].

A disaster declaration is quite specific in its scope of operation. It does not necessarily trigger other flow-on effects like relief assistance. Nick indicated confusion exists around the different activities. “There’s a misconception” regarding the roles of a disaster declaration and a financial declaration. A financial declaration is separate to a disaster declaration. “Financial aid can be made available without a [disaster] declaration” [Nick].

### 7.1.2 ‘Standing up’ of government coordinating agencies

Responding to a disaster involves the organisation and coordination of various agencies. Under the *Disaster Management Act 2003* (Qld) responsibility for managing a disaster resides within a LGA. The Queensland disaster management model is unique across Australian jurisdictions:

Queensland is the only State in the country that has a non-emergency service agency as the coordinator of disasters. ...no other state has local government essentially as the coordinating body of a disaster. [Nick]

The rationale for placing responsibility with local government relates to its relationship with the community:

Local government is the one body that is closest to the people. So, of all the emergency services and all the government agencies local government is always out there in the community. So, it makes a lot of sense to put [local government]...as an organisation in that coordination role. [Nick]

Formal institutional arrangements are established for responding to a disaster. One important body is the ‘standing up’ of a Local Disaster Management Group (LDMG). The LDMG is separate to [local] council although council is a member of that group. The LDMG is responsible for managing or coordinating disasters [Nick]. Specifically, the LDMG is formed to support local governments to develop and implement disaster management arrangements, services and responsibilities across the disaster cycle (Queensland Government, 2018).

Stakeholders engaged in the LDMG are wide-ranging, as illustrated in the next extract:

There is a local disaster coordinator who is a council officer. ...a chair of the group, which is usually an elected member. [For example, the mayor]. ...[a] deputy chair. ...then a range [of stakeholders] from...police, ambulance, fire service. So that's all arms of the fire service now, which includes SES, rural fire, the urban fire brigade and emergency management. We've got St John Ambulance, Red Cross, Salvation Army certified [*inaudible*], Coast Guard, Q-Rail, APA Gas, [*inaudible*] water, Energex, Telstra, Givit, and then we have a range of state government organisations such as Queensland Health, Department of Education, Department of Communities, Department of Transport and Main Roads as well as National Parks. [Nick]

The LDMG operates in a collaborative manner with its stakeholders exchanging their expertise and knowledge. No one agency has determining powers over the roles and responsibilities of another stakeholder during an activation: [the LDMG] “don't control anything [organisations]”; rather the emphasis is on coordination and communication “across the agencies” and reporting to the LDMG coordinator about events at the coalface: “what is going on, what [agencies are] doing” [Nick]. Based on the stakeholder information the coordinator advises agencies where support needs to be deployed. How the information is used by any stakeholder and how they elect to act with respect to mobilising their agency resources resides with the relevant agency.

### 7.1.3 Local disaster coordination centre

The LDMG operates from a centralised hub referred to as a local disaster coordination centre. A coordination centre can be established at different levels, state, disaster district as well as local. A coordination centre is modelled on the Australian Interagency Incident Management System which is replicated whenever similar events arise. Functions in a coordination centre vary:

[In] these centres we'll have an intelligence cell, a weather planning cell, we'll have an operations cell, a coordination cell, a logistics cell, you know, some of the centres go further and have an investigative [cell] as well. And we all have liaison officers. So, it's just how we run the centre during an activation, so that whether you're at the local level, the district level, or state level the centres all run the same. [Nick]

Importantly, when an activation has begun first responder agencies those prescribed statutory authorities target their efforts:

...When we're in the operation process of an [emergency disaster response] we're looking at how we keep the community safe. [Nick]

#### 7.1.4 Defining a community

What constitutes a 'community' in the disaster's context is specific. The concept of community reflects a one-size-fits-all approach to the stakeholders under the banner of a community. A community is a composite of individuals, households, families and businesses. The inclusivity of the concept is stressed by Nick: "We look at a community as a whole."

Regarding the treatment of all sections of the community as homogenous: "the business community is part thereof" [Marc] and "we don't identify business as separate to any other part of the community" [Nick]. Consequently, when a community is affected by a natural disaster event, public instrumentalities have an expectation that all community members will be self-organising and be ready to respond to any type of event rather than depending on "official" first responders as verified below:

[the] role of the community is to be prepared as it can be for an all-hazards approach to disasters [therefore]: ...we expect...businesses to be on the front foot...and prepare, have their own plans [and businesses] not wait for the man on the white horse who has to come out of the hill and save them, because it's just not going to happen. [Marc]

## 7.2 SUB-THEME 2: COMMUNICATING WITH THE COMMUNITY

The response phase of the disaster management cycle has specific actions that are activated as a disaster unfolds. Communicating hazard warnings and alerting the community to a hazardous event is a responsibility that rests with governments. This sub-theme considers how disaster communications are disseminated in the community from the perspectives of public authorities. It presents the voices of key public informants and key non-government informants; and provides SBOs' perspective on their use of the information. Key public sector informants' insights are reported first.

### 7.2.1 Disaster communications – key public informants

Early hazard warnings and general disaster communications help the community prepare for a disaster response. With respect to public authorities, one mechanism disaster messaging is relayed is through the LDMG. Because disaster communications are coordinated in this centralised body, public sector informants indicated the information can be tailored to the character and distinctness of the disaster-affected community (or LGA). Moreover, there is an intention that information provided to the community is engaging and relevant for personal action:

When the disaster management group is stood up...space is commandeered within [the organisation] and set up the control centre [coordination centre]. ...All the [disaster-related] information kind of went into the control centre and was organised from there and information disseminated. [Ava]

...so, all communication [has a] strong focus on community engagement in this local government area with a strong understanding of our local community. [Ava]

Publishing information for all the community to access helps to promote knowledge of the emerging event with an underlying message of self-help and self-reliance expected of the community:

... we tell the community, which means everyone, businesses, private citizens, or all the above, that they should be aware of the risk in their area, [and] they should know where to listen for advice. Media, that sort of thing, so it's very general in the approach that we have... [Marc]

When broadcasting information to the community public sector informants advised the information is developed with the whole community in mind rather than being customised for discrete segments of the community:

There's no specific notifications or alerts to small business in that respect. Warnings are received in the same way that the community does. [Charlie]

With respect to broadcasting of information to specific sectors of the community, key public sector informants said singling out communications for any group in the community, including the business sector, was unrealistic:

...we can't individually tell every person [Kate]; and

...we haven't got time or the resources to be ringing up individual entities and giving them individual warnings. It just doesn't work that way. [Marc]

Two key public sector informants indicated there has been anecdotal evidence to suggest the business sector has been dissatisfied with the way disaster communications have been managed. Exactly what those concerns of the business sector were, was unclear nor were they verified:

...business...they seem to choose not to want to take part in [the general information education and warnings] for some reason or other and think that they're in a separate kind a group. [Marc]

[businesses] still seem to think that no one told me, whereas we are just broadcasting widely for the community and everybody, but they [businesses] seem to have this 'no one told me'. [Kate]

Despite raising concerns about business owners' discontent with official approaches to disaster communications there was no indication that public authorities had carried out reviews or evaluation of government disaster communications for businesses. However, Marc recalled one study by a university who had investigated 'trusted messaging' and had found public confidence in government-delivered communications was rated highly:

Who in [the] community in general, [is] see[n] as credible information and what sources [do they] come from? ...the local council [was found to be] very high on the list. ...The local council is at the top of the list then the Queensland Fire and Emergency Services (QFES) and police are right up there as well. [Marc]

Marc said the findings "quite surprised" him because from his experience it was rare that public authorities were given any credit for the services they provide to the community. Generally, he found the community perceptions of public authorities were poor:

... not many people ring up [the organisation] and say, hey you guys have done a great job. We only hear the complaints normally. So, you think to yourself probably no-one's going to listen to us or trust us but it's probably the barking dogs that we're hearing all the time and not the quiet ones that understand what's going on.

Key public sector informants conceded providing disaster information to the community is not a panacea for getting the community on board to heed an authority's warnings or advice. Ultimately, key public sector informants acknowledged how information is sourced and used, if at all, is at the discretion of an end user:

You can't force people to listen or participate with their residence or businesses...the information that we've put out is for everyone. If small

businesses or any business sees it and chooses not to use it well that's their prerogative of course. [Marc]

### 7.2.2 Public institutions' dissemination of disaster-related information

Key public sector informants indicated disaster communications are disseminated in different ways to the 'community'. In the following statements they reveal traditional media, notably print (newspapers), broadcast (radio and television) and digital media are deployed to disseminate information to the community:

...they go out via...Facebook. If it's bad enough the main might do a media campaign. It will be on general media so that's just for everyone. TV, newspapers, radio. [Marc]

The cyclone [STC Debbie] was very active up north and everyone was quite focused on it as individuals through multimedia platforms, so it was on the news. It was very much in all the media. [Ava]

I know if I am at home I will look at the App on the phone and it's got all the [local government website] information there. [Marc]

Key public sector informants also said weather alert apps are available to source key disaster weather reports and information [Marc, Ava]. An option exists for the community to "sign up for such alerts" [Ava]. In addition, local council websites are resources for the community to keep track of water levels and flooding information but also to find flood maps in LGAs [Ava, Marc].

Digital disaster information is forming an important communication tool for local governments to disseminate information to the community when a disaster unfolds: "...[Information is circulated] through social media, the website and the dashboard..." [Ava]. The reference to the 'dashboard' relates to a site on local government websites. The dashboard is a single-entry point/site that releases "real-time" data relevant to an LGA facing the threat of a hazard [Marc]. Marc indicated the dashboard serves a broad community of users:

Our dashboard, we had it up and running and it got smashed...had NGOs and some government agencies looking at it.

As well as digital media traditional media is employed to promote awareness of emergency management resources. Public high-profile identities are recruited to 'educate' the community on disaster resources but also to motivate people to act:

I know [the dashboard] was widely broadcasted by the Mayor when it was being rolled out, and during the Debbie event [cyclone] she was highlighting

it all the time to the whole community, including business, so they [businesses] should be aware of all that as well. [Marc]

I remember being at home and seeing the Lord Mayor on the news filling sandbags and being quite vocal about, you know, "You need to get down here now and start getting them if you're in fear of being flooded." And so people do that. So, they're very good at that part of it. [Benita]

As the previous extracts reveal, not only do public authorities adopt several media strategies to reach all community members as part of their responsibility to provide warnings and disaster information, but the findings also illuminate public institutions' desire to increase communities' buy-in of their 'shared responsibilities' in a disaster. The excerpts reinforce expectations, behaviours and attitudes consistent with the policy environment of self-help and self-organising when responding to natural disasters (COAG, 2011).

### 7.2.3 Disaster communications – Key non-government informants' role

Several not-for-profit sectors work closely with the business sector to support them during a disaster response. Unsurprising then, and in contrast to public authorities with a top-down, generic approach to disaster communications, the non-profit sector, especially fee-paying membership-based organisations, apply a bottom-up, member-centric focus to helping small businesses:

...[we] represent the interests of...members...they are at the centre of what we do. [Roman]

...why we exist is for our members and creating value for them. [Grace]

According to non-government informants one of the reasons the business sector engages with them during a natural disaster is because the sector is regarded as "trusted sources". Whereas 'trust' was raised incidentally by one public informant [Marc], instances of trust were mentioned multiple times by several non-government informants. Trust was framed around the credibility of the organisation, the professionalism of non-government practitioners, the quality of information and brand reputation. Roman for example referenced trust on eight separate occasions in his interview, signifying the importance placed on this important quality. Relevant statements on trust were:

We simply trade on trust; we simply are a trusted source of information; being that trusted advisor when you need us; we're a trusted brand; and we're a single source of information that people trust. [Roman]

We're a trusted organisation, we take pride in what we do. [Rueben]

...[the organisation has] a strong degree of trust, that's why it has been successful. [Grace]

[Our business and members] 'are trusted advisors'. [Matilda]

The frequency of natural disasters experienced in SEQ has influenced the non-government sector to become involved in the delivery of disaster communications, providing advice, and guidance to the business sector:

Over the last few years, we've seen an increasing number of disasters that have been affecting our members. ...Now we're finding...that we're being drawn into the conversation around how we help to protect their [business]. [Roman]

Business owners' issues of concern in a disaster context were found to centre around operational and practical matters:

At times of a disaster our inquiries to [the business] significantly spike, traditionally to [understand] the impact on their staff. Do we need to keep paying these people? What happens if I can't open again? What do we do with holidays? What do we do with insurance for our directors? How do we protect our workers coming to work in a disaster area, whether it's floods or cyclones or whatever? So, at a time of uncertainty they come to us in the first instance. So, on average we receive between 500 and 700 calls a month from an SME [small medium enterprise] asking us for advice on areas. That spikes whenever there is a lead-up to, or post, some form of natural disaster. [Roman]

It is noteworthy the areas mentioned in the preceding passage parallel historic business and disaster literature on the type of decisions collated at Chapter 3. Issues of similarity are employee entitlements, evacuation of employees and customers (Drabek, 1995), staff retention and staff losses (Morrish & Jones, 2020; Runyan, 2006), re-entry to worksites (Cater & Chadwick, 2008; Drabek, 1995) and the implications of being unable to operate and re-open a business when cash flow diminishes or dissolves (Cater & Chadwick, 2008; Irvine & Anderson, 2004; Runyan, 2006). Of note, the findings focus on the importance of employment relations matters which are chiefly relevant to employing businesses rather than the non-employing businesses.

Key non-government informants explained part of their mission is being relevant and responsive to their members' needs. For example, supporting business owners to be disaster aware and disaster ready was crucial "...[we] make sure 'the SMEs'<sup>18</sup> understand what's going on" [Roman]. Likewise, Grace reported facilitating information quickly:

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<sup>18</sup> SME is an abbreviation for small medium enterprises



...if there's something that's happening...we become a conduit to be able to disseminate information and collate the information for our members. [Grace]

#### 7.2.4 Key non-government informant's reliance on businesses feedback

Key non-government informants stated they actively pursue feedback from their members about their services. Partly the intention is to maintain currency with end users' needs but also to keep in touch with the trends being experienced by them. "We've put it out to our members in several different ways to ask for their input or views" [Grace]. Non-government informants said they carry out surveys as a common method to gather business owners' views as exemplified by Roman:

... we've researched the issues around us, so we survey our customers...on what are their biggest concerns [for example]...a survey on Cyclone Debbie...we'll do it through email surveys, do it through webinars, but ultimately what we're looking for is the feedback from our members.

Because of surveys, non-government informants identified business owners have distinctive characteristics and information needs. Being time-constrained cascades to how they connect with their organisations, what supports they seek and how they get involved in their activities:

We found that the level of engagement, because they're so busy and they're so into running their business, is not necessarily as great as we might like it... [Matilda]

...it is difficult reaching [business] people generally. [Grace]

...typically, with [business operators] who are often sole operators and just incredibly time-poor, they won't engage as much on social media. [Grace]

...small businesses have become less engaged in face-to-face networking and workshops because they are 'time-poor'. [Roman, Grace]

Despite the time and engagement challenges experienced with business owners key non-government informants said they resolve the shortcomings by shifting how they connect with members:

We're changed our engagement strategy...[We now] do an awful lot more with digital that is married into the restraints of a small business. [Roman]

...we give our members, wherever they are in their development or their size or their physical location, that opportunity to connect across different channels. [Grace]

A key driver for pro-actively attending to the needs of the business sector is the recognition business owners are hesitant to delay or postpone decisions because:

“[they] just need the information right now to help them [deal with the business issues] do it quicker, better and maintain profitability” [Roman]. The adoption of diverse communication technologies featured as part of the strategies being implemented to disseminate information to business owners. Despite the scale of investment in disaster communication differing between the two non-government informants, both reinforced convenience and expediency of information delivery to business owners. Grace identified a “website...a monthly newsletter...open Facebook page...and Instagram” to exchange information and communicate with members. Roman conversely described information strategies from a single-entry point:

We provide [members] with a one-stop shop in a one-stop place which includes all our media company...and...our job is to broadcast as quickly as possible to as many people as possible...and let them know how to prepare. We curate all the information in storm season, Government, local councils, insurance companies, banks.

We provide...content through media, webinars, social media and all the resources and facts sheets that we can give them, messaging, Facebook, twitter, LinkedIn...we produce material, we take you through all the checklists in preparation for natural disasters and advice services...make plans to prepare for it, recover from it.

During the interview with Roman he shared a webinar developed by his business regarding Business Continuity Planning for businesses of any size. Specifically, the program addressed emergency storm preparation with several partnership arrangements between government and non-government entities involved. Regarded as a “phenomenally successful” way to get information out to business the webinar replayed by Roman and listened to by this author was suggested to have attracted “500-600 listeners” with the same figure proposed as downloading it to watch [Roman].

### **7.2.5 Psychosocial impacts related to natural disasters**

Besides the circulation of disaster-related communications for business owners mentioned previously by key non-government informants, the dissemination of psychosocial<sup>19</sup> information was raised. Attention was being paid to increasing awareness of the “human’ dimension” of owning and running a business in the disaster context [Roman]. Roman indicated guidance material had been developed and

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<sup>19</sup> Psychosocial impacts: those psychophysiological effects experienced by individuals who have the experience of a natural disaster – symptoms involve stomach upset, fatigue and lethargy; and cognitive impairment such as confusion, poor concentration and short attention spans. Psychosocial covers anxiety, depression, grief, sleep loss, behavioural change such as alcohol abuse (Lindell & Prater, 2003, p. 178)

disseminated by the organisation to help business members recognise psychological reactions being triggered from exposure to a natural disaster. Designing suitable psychosocial material was a way to have business owners integrate their health and psychological stress into their disaster planning and recovery strategies:

we've seen small businesses go into that fight or flight mode, get back up and running, get everything replaced, all doors and windows put back in, all the customers back and six months later burn out, simply because of the emotional exhaustion, I suppose. So, I'm more concerned now just even on the human element ... from a business owner's perspective, and I think that's an area that we have to start really looking at, because business owners don't tend to want to phone a support line to say, "I'm not coping." It's not in their make-up so how do we introduce that support without it being seen to be counselling or some form of formal process? So, over the last three to four years our organisation has moved into ... being that trusted advisor when you need us. We produce ...depending on the locality, depending on the type of business, depending on the-disaster itself, material that we issue prior to recovery... it's [on the website]- ... we take you through all the checklists of the things that you have to be aware of and to make plans to be prepared for it. [Roman]

Placing an emphasis on the psychological well-being of business owners appears well founded. Of interest to note in this study, of the sample of 24 respondents, eight respondents, across all participants [who voluntarily disclosed] had in some way had their health compromised, impacted or they knew of a close business owner whose health was adversely affected by a disaster [Benita, Fleur, Lucas, Tomas, Roman, Harriet & Martin, Chloe]. Four personal stories are summarised in Table 7.1.

**Table 7.1** Indicative examples of the psychosocial impacts of disasters

<b>Respondent</b>	<b>Story</b>
<b>Roman</b>	Roman managed several commercial businesses during the Brisbane floods of 2011. At the time of the flooding, he maintained business operations, despite businesses being inundated, loss of lives and the loss of his family home.
<b>Tomas</b>	Following the loss of his business in the Brisbane floods, Tomas was diagnosed with post-traumatic stress disorder.
<b>Lucas</b>	Lucas experienced two natural disaster events within two years (2011, 2013). Following the second event, he was diagnosed with Type 2 diabetes, the onset being linked directly to the disasters. Lucas also spoke of panic and fear surfacing when weather events arise.
<b>Benita</b>	Benita, in her own words, described the impact of natural disasters on her close friend, also a business owner: <p style="padding-left: 40px;">“I also had friends who went under ... the toll that it took on their health and emotions. One of them I know underwent counselling for some time... And she had repaired her business and started it up again. But whenever she heard a storm she would go into distress because she would panic that the same thing was going to happen again. In the end she ended up ... I don't know whether she sold it or closed it.”</p>

*Notes:* Transcripts and Field Notes

Insights into SBOs' professional bodies providing members with disaster-related planning information is presented, followed by a discussion of the business owners' views on publicly available disaster resources.

#### **7.2.6 Disaster education by professional bodies**

Business owners were asked whether they were members of their professional industry body and if that association supported members by issuing disaster-related information across PPRR or offered any education and support programs. SBOs' disclosures produced varied responses. One respondent [Audrey] said her professional body proactively sends messages to members to review their disaster risk reduction strategies "particularly around times of storm activity or natural disasters. ...Have your disaster plan ready. Have your disaster supply ready." Sage and Sally attend annual conferences related to their industry sector. The forum, they said, has been instrumental in promoting disaster reduction planning:

I don't think there's a conference that we haven't been to, where you don't take away handfuls of information that you can apply to the job. [Sage]

Significantly, since Sage and Sally became aware of regulatory obligations related to their industry, they have remained vigilant in complying with the regulations. Consequently, while Sage and Sally dismiss sourcing government websites for disaster information [refer Table 7.2], their responses can potentially be explained by their disaster reduction strategies to satisfy regulatory obligations.

Chloe mentioned she has little interaction with her industry association on disaster matters although they did call her after Severe Tropical Cyclone Debbie to tell her about government assistance. Pippa claimed her industry body has never stressed disaster readiness, protection or offered tips on responding to disasters. Lucas, conversely, taps into a closed industry forum when he needs advice "you can get on there and seek advice from other business owners ... Shit what do I do? I'm stuck here." This latter strategy has merit especially when business owners operate in isolation, or are trading in rural communities, as does Lucas, with few trusted business owners and support networks nearby to reach-out for advice.

#### **7.2.7 SBO perspectives of publicly available disaster-related information**

SBOs' awareness of, access to, and use of publicly disseminated disaster information is discussed next. Public information sources are coincidentally important sources for

cue information for business owners. In this sub-category theme, findings that inform about cue information are covered.

Table 7.2 sets out a selection of indicative responses to the question posed to SBOs, Tomas and Benita on their awareness of government sites to access information in a disaster. Government sources are considered authoritative and reliable. They provide accurate and timely information to respond to any event (Anderson-Berry et al., 2018; Paton & Irons, 2016). Unsurprisingly, the findings showed business owners have differing knowledge about where to go to obtain information. Most business owners in this study knew of at least one ‘public’ or ‘official’ source to find up-to-date information about a disaster.

Facing a bushfire threat, Audrey said she followed several online, digital sites including a local government website, the local State Emergency Services<sup>20</sup> and Energex.<sup>21</sup> Of critical importance to Audrey was power interruption to her cold chain supply which can result in thousands of dollars damage to stock. As previously noted, Audrey’s professional body actively encourages disaster preparedness to its members, hence it could be inferred there was a greater likelihood the professional body refers its members to relevant website links to protect costly stock.

Other reputable government sites were cited by SBOs. The Bureau of Meteorology<sup>22</sup> was commonly referenced [Lucas, Chloe, Harriet & Martin], local government websites, and the Australian Broadcasting Corporation [ABC][National Broadcasting System by [Erin]. Business owners appear to have different preferences for the type of media they source for information searches. Benita relies on print media (newspapers), while digital media is preferred by Pippa, Audrey, Lucas, and Chloe. These latter business owners are mostly street-based and rely on mobile devices: mobile phones, tablets, laptop computers and apps [Pippa, Audrey, Lucas, Chloe] with home-based business operators Mia and Erin preferring television and email services.

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<sup>20</sup> SES – State Emergency Services personnel are first responders supporting the Queensland Fire and Emergency Services. SES members are volunteers who provide assistance for non-life threatening, emergency situations as in natural disasters.

<sup>21</sup> Energex is a government-owned corporation, supplying electricity to SEQ residents.

<sup>22</sup> Australian Government agency providing the nations official weather forecasts, and warnings (<http://www.bom.gov.au/>).

**Table 7.2** SBO use of government sites to find disaster information – indicative quotes

Interviewer queries	Person	Quotations
“Did you know that they [Local Government Area] have a dashboard? A disaster dashboard?”	Benita	“No, I didn’t.”
“Local government has got very active websites ...”		“That’s good to know.”
“Do you see people [small business owners] using the website ... the state government [sites]?”		“No.”
“On the day that it actually happened, and the coast guard who was coming along and made those comments to you, was that the first warning you had?”	Tomas	“In January 2011, when the floods hit, I lost everything. No warning. The first warning about the scale of the event was the coast guard [on the morning of the Brisbane floods].”
“Do you ever source the [local government] website or anything like that? To find out about weather events or warnings or anything like that?”	Sally and Sage	“No. No I don’t care.” [Sage] “There’s not a lot we can do. If a cyclone comes, there’s nothing we can do.” [Sally]
In relation to the threat of a fire ... “So, was there a message coming through to tell you that?”	Erin	“No. I could see it in the air. I could smell it. We have good visibility, and we can see and feel the weather and we’re very, very attuned to it...because it’s [type of work] we tend to not have radios and televisions on during the day.” “If I get a warning that I would pay attention to it’s through email. It’s likely to be my neighbour... ‘my neighbour is my best warning, and she listens to the National Broadcasting Systems, the radio”
“During this time [of the threat] were you looking at various social media?”	Audrey	“Yes, that was the immediate updates was through social media ... on the laptop and mobile. ...I think it was the [local government website] and probably SES Facebook updates ...it was partly with Facebook updates and then Energex website as to when the power went out.”
“Do you get anything like that [weather alert] app?”	Chloe	“I think I have got an app on my phone for [Local Government Area] warnings. Yes, I do have it. But I don’t rely on other people.”
“It sounds to me like it’s all word of mouth where you get your information?”	Pippa	“Yes ... we just sort of help each other [small business owners] around here ...We have no radio or anything like that.”
“So, when you look at Facebook is it BOM?”		“More like looking at Facebook ..... more like, you know Channel Seven if it was sharing something it would come up [on the mobile phone].”
“So, did you - were you listening to the radio the TV?”	Lucas	“Yeah, all that sort of stuff...[and] all that information is publicly available through the BOM website”

Business owners mentioned trust in the source was an important component of where they look for information. Some business owners rely on and trust their personal judgment [Sage & Sally, Chloe, Erin, Mia], neighbours [Erin], or Facebook [non-official social media sites] and commercial television [Pippa]. It is unclear from this

study whether information sources like commercial television are preferred because business owners are unaware of the official emergency broadcast providers (like the Australian Broadcasting Corporation) or the commercial stations are simply more well-known and favoured. Undocumented in the table, and separate to official information, business owners rely on their employees to provide local ‘intelligence’ [Audrey].

### 7.2.8 Practicalities of disaster information

Several key public sector and non-government informants contributed some practicalities when reviewing SBOs’ use of disaster communications. With 15 years’ experience working with small businesses, Benita said a barrier to business owners’ engagement with disaster communications, is they first need to have knowledge of its existence, particularly ahead of an event. Notably, Benita and Tomas, who had run businesses, expressed their ignorance of local government disaster information sources [refer Table 7.2]. Roman, who before entering the non-profit sector ran a for profit business in the Brisbane floods, contended as any disaster unfolds, business owners are concentrating on keeping a business operational. He stated conducting online searches for disaster content and messages detracts from the immediate coalface issues. In his experience, Roman found business owner’s energy and effort is prioritising continuity of services rather than watching disaster coverage in the media:

...an SME, traditionally, with less than 20 staff is too busy running his business to sit in front of a computer screen and navigate his way through all the various stakeholders. When you overlay that in a time of crisis, we're talking about business people who go into survival mode, not necessarily information mode. [Roman]

Conversely, Marc offered a cautionary note to the community with respect to relying on any type of disaster information. He warned against bypassing official sources online and relying on “synthetic” parties who publish unfiltered advice:

*[it]* can be good and bad. That non-official social media syndrome, that can be really good because you know if 40 or 50 people [are] all saying the same thing, then I think it's credible by numbers ...But if one or two how shall I say it, know it all type of website people, from the social media people who are purporting to be an expert, and they are putting things out, and people listen to that, then that's bordering on dangerous. And there's a few of those out there of course. So once again it depends on who they choose to listen to as to whether they'll be successful or not. [Marc]

### 7.2.9 Small business owners' criticisms of disaster communications

A few business owners pointed to shortcomings when engaging with official sites, especially when needing data for making decisions [Chloe, Erin and Lucas]. Chloe said inaccuracy of published local government data on flood levels has been problematic for her: “the predictions on the [LGA] council website that has the flood levels and the predicted flood levels for [the particular event], they haven't been right yet” [Chloe]. Erin, on the other hand said media information was too general to be of any local relevance:

‘I don't listen to the news very much because it's Groundhog Day stuff and it's not geographically distinct enough. [Erin]

Likewise, Lucas wanted place-based details, specifically practical markers applicable to his area to support his decision making. He needed “benchmarks” in terms of “rainfall, creek levels ... those sorts of things” and precise markers in terms of “if the creeks are at this height here how does that affect us?”. In the absence of any collective memory of flood events in his community, Lucas struggled to conceive a disaster plan to protect his business.

### 7.2.10 Broader disaster communication issues

In addition to the individual concerns expressed by SBOs in the previous extracts, several business owners and some key informants raised broader concerns about commercial media coverage of a natural disaster. Table 7.3 catalogues indicative issues raised by participants. Roman and Menzies both believed the media can exaggerate the disaster situation in disaster-affected areas which distracts the public away from these locations and cascades to a downturn in interest in these places that impacts business trade, spending and their recovery trajectory. Two business owners expressed concerns about disaster messaging and public fatigue caused by repeated coverage of disaster events [Mia, Erin].

Audrey, conversely, shared the dilemma of excluding community businesses from first responder meetings in a disaster context, in rural communities. She highlighted greater effort should be invested engaging with local business owners in such forums. She indicated business owners can input beneficial information about their needs and those of their clients/customers/consumers who require ongoing supply of goods and services during and immediately after a natural disaster.



**Table 7.3** Media and communications link to the business community

<b>Participants</b>	<b>Issues of concern</b>
<b>Audrey</b>	“I believe there might have been some debrief at community meetings, but nothing specifically for business.... it would have been good for whoever was coordinating the emergency response to go, ... So, [business retail] services are pretty essential as well. ...The response doesn't include all the essential services that are needed”
<b>Roman</b>	“The sensationalism of the disasters, there's now car crash television, and that actually hampers recovery – After STC Debbie, there's no way I would've gone north on holiday after Cyclone Debbie, because apparently everything was turned upside down, everything was broken, when in reality it was business as usual.”
<b>Mia</b>	“...the media really took it and ran with it for way too long. It was like ... I suppose it was because we were here, living it, we didn't need to get on TV and rewind, rewind, rewind... overkill. We've really gone from one extreme to the other, where we used to get nothing, and it would piss down with rain, and you'd get 50 mils in half an hour and you were told nothing, so it looks like, "Oh, bit of grey sky out there. We may get flash flooding, be careful." And we get nothing. ...they've gone to such extremes that no one listens to them now. ...and the 2013 floods, that's what happened to some people. I think they just got blasé and went, "Pfft, they don't know what they're talking about." And all of a sudden it flooded and it's like, "Oh boo hoo. It's not my fault.”
<b>Erin</b>	“One of the big communication dramas around natural disasters that has become entrenched in modern language is the negativity of it... the warning of it. It will all be ruined. And to some extent, making communications about natural disasters has switched people off because they think well what can they do, other than just be prepared?”

### **7.3 SUB-THEME 3: INSTITUTIONAL RESPONSE AND RECOVERY ASSISTANCE**

A feature of the response phase is to understand the risks and vulnerabilities of community members (including businesses) and to provide them with immediate relief and recovery assistance (Macdonald et al., 2015; Queensland Government, 2018a). The findings on relief and recovery supports available to SBOs with specific reference to public authorities are canvassed next. As the sample Key Informants population is limited, the affordances covered should not be considered definitive. Rather, the affordances are a snapshot of measures provided through a select group of public institutions. The following programs complement the warnings, disaster-related communications and disaster arrangements presented in the preceding sub-themes.

#### **7.3.1 Fine line between response and recovery**

When a natural disaster begins there is an overlay between the response phase and the recovery phase. According to Nick, from a public authority's perspective, they "don't wait until you're finished doing the response to start the recovery. The response, also the recovery occurs during the response phase". Consequently, in practical terms distinguishing the response from the recovery phase can be difficult. From the perspective of public institutions, businesses are a significant part of the natural disaster recovery process. The importance of business to the recovery process was stated by several informants and captured in the following excerpt:

Community recovery hinges on business recovery, it's all intrinsically linked because the sooner the businesses get up and running the sense of normality comes back to the community. ...[Businesses] benefit the community by getting back up and running as quickly as possible. [Marc]

Therefore, a key goal for public instrumentalities is getting the business sector functioning quickly. In the overlap of response and early recovery phases of a natural disaster, local governments, through the LDMG may implement measures to assist local communities recover from a disaster event. One mechanism is to activate Local Recovery Groups:

when the recovery group is stood up that means that the council has, or the area has, determined that activities need to occur in the recovery space. So that's when, I guess, we commence the recovery groups, they are convened, and that's when we start working towards the recovery plan that's been set in place. [Charlie]

### 7.3.2 Economic Recovery Group

Of relevance to small businesses is the Economic Recovery Group with an overriding responsibility to “concentrate on those businesses that have been affected by the disaster” [Charlie] and assist them with information on financial and other assistance. The Group’s intent is on “keeping money circulating in the community” [Marc]. Like the LDMG, the Economic Recovery Group members are broad ranging with “representatives from different areas within the council, and representatives from Department of Tourism, Events and Small Business, Department of State Development, the Queensland Rural Adjustment Authority (QRAA) [which was replaced by the Queensland Rural Investment and Development Authority (QRIDA)]<sup>23</sup> plus we have the local Chambers of Commerce., and the local Regional Development Australia representative”[Charlie]. Activation of local recovery groups are not automatic rather they depend on the scale of the disaster. Charlie and Ava noted Severe Tropical Cyclone Debbie was an out-of-the-box event leading to the standing up of the [economic] recovery group: “this is the first time that we've led an economic recovery program ... that's largely around the fact that there haven't been any suitable disasters” [Charlie]. Because of the gravity of Severe Tropical Cyclone Debbie, the state Department of Communities was invited to join the group. This was in response to the group identifying SBO requiring targeted psychosocial assistance and case management:

as a result of this disaster ... a representative from the Department of Communities ... we've added in. ...we have some specific examples, where some business owners required some case management ... human services area are assisting individual business owners ... on the personal side of things. [Charlie]

### 7.3.3 Data collection about disaster damage to small businesses

When a natural disaster overwhelms a community, public informants explained one role for local councils and the Economic Recovery Group is to determine the geographical boundaries of businesses impacted by a disaster. Such information contributes to the financial assistance provided to disaster affected communities, via grants and loans [refer Chapter 6, and below from section 7.3]. Funding is a “state and federal government program” as local governments have no responsibility for

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<sup>23</sup> QRIDA is a specialist provider of government financial assistance and advisory support to rural and regional Queensland. Its focus is usually on lending to primary producers, however during a natural disaster it has responsibility for administering grants and concessional loans (<http://www.qrida.qld.gov.au/about-qrida>).

providing disaster management remuneration [Ava and Charlie]. Financial assistance is reliant on data collected “at the grass roots”:

Natural Disaster Relief and Recovery Arrangements (NDRRA) – it basically sets out some of the rules ... Off the top of my head I can’t remember what the activation requirements are for small businesses ... however it’s beholden on the [Qld] Department of Small Business and State Development to some extent to come up with sufficient data to actually get the category activations ... those activations rely on data collected at the coalface – the area inundated. [Menzies]

The findings indicate “sufficient data” is collected in several ways. A direct and immediate way to gather data is by local governments interrogating their non-public database of registered small businesses, the Australian Business Register [ABR] [Kate, Nick, Ava]. The value of the register is that “[councils know] where their business hubs are – [since businesses have] got [to] register with council” [Nick]. However, the ABR has its limitations as not all businesses register with their local council. Consequently, the register is neither accurate nor complete which complicates tracking business especially home-based businesses “... [since] ... they are difficult to identify if [not] legally registered” [Nick]. Charlie reinforced this perspective, pointing out in her LGA, the problem was overcome by the council creating an online form on its website and Facebook to encourage small business to register or update their details so as to obtain a fuller understanding into those affected and the extent of impact.

Beyond the ABR, public sector informants contributed a few alternative mechanisms deployed by local government to establish an accurate picture of “sufficient data” to support activations. To estimate business numbers affected by floods, Qld Fire data were applied to assist one council locate the extent of flood affected areas [Kate]. In his area Nick said the council undertakes a rapid damage assessment<sup>24</sup> whereby the structural integrity of commercial buildings is appraised to determine potential problems “[council] go out and check on everything, basically assess it, look at what's been damaged. ...looking at structures. ...a quick rundown if there's shops that are damaged.” Such an approach quickly detects issues emerging for small business. Business-related networks are also called upon to feed advice and information to councils and government [i.e., Chambers of Commerce, local Business Enterprise Centres, local council economic development officers, small business

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<sup>24</sup> Rapid damage assessment is a distinct and separate process to insurance assessment.

groups and associations]. These business supports in the disaster-impacted community gather details around who is struggling, what are the difficulties being experienced and what are the problems arising [Nick].

As these preceding examples reveal, local governments are proactively working on the ground to capture the disaster damage in the business community. Data collected at the grassroots require dedicated human resources working face to face with the community to verify information, in place of aerial or drone technology. The use of digital technologies incorporating social media and on-line tools reflects broader engagement strategies by public authorities. These approaches by public instrumentalities correspond with Doern's (2016) suggestion for local authorities to integrate flexible strategies if engaging with small businesses. However, the examples presented above are not necessarily standard across every LGA, suggesting gaps and inconsistencies in data collection may exist across SEQ.

Failure to adequately capture the extent of community damage has important implications for the small business sector. Incomplete information about the scope of businesses impacted by a disaster, home-based and street address, influences the geographical boundaries established as the basis for small business eligibility to apply for and receive a grant. Charlie explained:

if a business overlooks to identify they have a home-based business at the time of door knocking, "Yes, we're fine, no problem," no mention of the business side of things and so four months later they've obviously applied for the grant. They're not eligible for the grant, so they've approached council to see if there's anything that we can address.

Ava reinforced the dilemma:

I was flooded look at the devastation, I was door knocked, other people saw it," you know? "Why is it so arbitrary?" And it's, uh, a geographical boundary, and if you fall just out of that, it's too bad, so sad sort of thing.

Menzies elaborated on establishing disaster impacted boundaries saying a trend shift has occurred as communities are exposed to more natural disasters. Whereas once whole regional councils were activated when a natural disaster struck, the federal government is scaling back activations to the suburb level and this affects eligibility for grant assistance. Consequently, he argues unless public instrumentalities responsible for collecting statistics get accurate and detailed information on the extent

of disaster impact, who was impacted, home based and street level, and their losses, many businesses will find they become ineligible for grant assistance.

#### 7.3.4 Community Recovery Centres

Community Recovery Centres (CRCs) are opened in disaster-stricken communities to support the community to get back on its feet (Queensland Government, 2018a). One informant with direct experience of a Centre highlighted the conditional features: “[they are] subject to a natural disaster declaration; overseen by the Department of Communities; and assemble public agencies and non-government organisations in a single space to support disaster-stricken communities” [Emilio]. Initially the Centres are funded by the state government, while reimbursement under the NDRRA may be sought by the state. Ready Reserves, comprising volunteer public servants, are deployed to staff CRCs to oversee disbursement of disaster assistance:

[Ready Reserves are] called up and then are placed in disaster struck communities to distribute relief payments, emergency relief payment. ...[they] go in and basically put up to \$900.00 per household into the community or \$190 per household member up to a maximum of five people. Funds are provided through a debit card. [Emilio]

Furthermore, the focus is on community recovery:

The idea is to get them [the community] out and spending. ...\$900 for people to basically blow it. Spend it on replacement food, spend it on just getting some economic activity going in town again. [Emilio]

With respect to the small business sector, several public authorities attend the CRC to help the SBO. For example, a representative from the agency responsible for small business [Department of Small Business] is at the CRC. Additionally, QRIDA whose focus is on the eligibility for grants and loans is also present. However, QRIDA only participates at Centres after they are activated. An activation of QRIDA is at the direction of the Department of Small Business [Menzies]. General information, material on self-help services and financial assistance is issued to interested people and SBOs.

SBOs are unlikely to attend a CRC:

We don't see small businesses owners or operators fronting up to the recovery centres. They seem much more interested a little further down the track in seeing what might be available than going and saying “well you know this happened yesterday what are you going to give me today. [Emilio]

Other informants shared Emilio's assessment. Benita claimed business owners are pre-occupied with stabilising their situation and getting back to normal "I don't think anybody thinks about where to look for where they can get help... rather they 'clean up the mess.'" Similarly, Roman quoting directly from an SBO recounted "I'd rather just get my place cleaned than find out about supports." Menzies differentiated between the behaviours of home-based and street businesses. He suggested home-based businesses were more inclined to attend the Centre because their residence was impacted, whereas street businesses tend to source information through their membership in a Chamber of Commerce [if a member – author emphasis]. Conversely, Reuben indicated from his experience small businesses are often unaware or lack the knowledge of government programs.

An alternative arrangement to the CRC is an outreach model. The model involves a representative from the Department of Communities, Uniting Care [a faith-based organisation] and Red Cross [a non-profit organisation] who together visit every household in a disaster-affected area. In doing so valuable data are collected "sometimes they're the best referral for finding businesses based at home" [Menzies] and when a home-based business is identified, reference material is passed on immediately.

### **7.3.5 Grants and loans**

Financial assistance can be activated during a natural disaster by the state government. As noted in Chapter 6, grants and loans are two types of financial relief small business may be eligible to receive in the aftermath of a natural disaster. The procedural and policy underpinnings are discussed here. Grants will be discussed first followed by loans.

### **7.3.6 Grants**

Grants are provided to small business through the QRIDA with the specific purpose to help clean-up business properties. The conditions of a grant are specific as detailed by Menzies in the next extract:

We're got grants to small business of \$25,000 that have had direct damage. ...the grant [provides] funds for clean-up through [QRIDA] ...the grant is for repairs, replacement in the case of a small business, up to one-month worth of stock. These grants are for immediate resumption of business – [and he repeated] it's about immediate resumption of business. The grants are really about restoration and repair [repeated twice].

Menzies added in firm tones, the grants are not for:

addressing '[pre]existing problems;' or to be utilised in 12 months' time;  
...and ...betterment.

He elaborated on the parameters of the grant:

You know some people will say “oh well....I want a bigger freezer” or I want... ... No, well we can replace like for like, or we'll replace the value to what you had, if you want to chip in the rest, well that's up to you.

With respect to the use of grants to pay for employees, the limits to using a grant to cover wages was explained carefully:

If your staff work Monday to Friday and they came in on the weekend and you paid them overtime to clean-up, you claim those wages. But not standard wages and not if they are working standard time. The hire of contractors to assist with the clean-up is a legitimate way to expend the grant. [Menzies]

Ultimately public institutions want communities to return to their normal routines. The premise behind the grants program is getting communities going. If people are applying for grants and receiving funds to complete repairs, the assumption is that the money is circulating in the community. Hence from an institutional perspective Menzies indicates the economic injection of funds means the community is recovering. This reinforces previous statements by key public sectors informants Marc and Nick.

### 7.3.7 Application process

The application process for a grant in SEQ has historically been paper based but has moved online. Applications require supporting documentation to prevent abuse of the program. Menzies stated there is potential for fraud, indeed public authorities verify a “business is legit[imate], ..[by requiring an] ABN [Australian Business Number], ... a rate notice or a telephone account that says you are where you are ...[and] if they're got photos” [Menzies]. In 2017, QRIDA launched an online portal. This resulted in an “exceptional” uptake of 80 percent of businesses using the facility. Regarding the timeframe for assessing a grant, Menzies indicated seven days turnaround was common [in relation to Severe Tropical Cyclone Debbie, 2017]. Once an assessment has been finalised, the payment happens quickly with funds released in two lots:

there's initially a \$5000 payment, where a business owner tells us what the damage is, ... maybe a few quotes. They don't need to have expended any money at that point. And then it's \$5000 to keep the ball rolling. ... the



additional \$20 000 is paid once the work, the repairs are completed and paid for. [Menziez]

Although the extract suggests payment increments are in two lots, the public informant indicated payment increments can be negotiated. The release of funds can be configured according to business owners' financial capacity "...if cashflow is an issue, business owners can apply for small bundles of grant funds, expend the money and continue on, so they can receive, for example \$5000 amounts at a time" [Menziez]. Grant payouts require disclosure of any insurance settlement [Menziez].

A window of six months is generally available for businesses to submit a grant application. Although, the application system has been known to run longer, for example, 18 months after the Brisbane Floods in 2011. The flexibility in timeframes concedes business owners can confront many obstacles after a disaster to resume business operations. Notable examples relate to long delays for insurance payouts, infrastructure repairs and workforce and professional shortages like tradespeople and contractors [Menziez].

The study findings suggest that despite a history of episodic natural disaster events in SEQ, there remains a vacuum in knowledge around financial relief options. Among the respondents in this study, several indicated business awareness of grants [and loans for that matter], remain inadequate [Benita, Roman, Rueben]. Benita disclosed she had no knowledge of grants prior to the interview for this study and expressed disbelief: "Grants – funds for clean-up through the [QRIDA] I didn't know there were. Even now I didn't realise that was the case."

Equally, Roman from his long association engaging with businesses indicated there was a lack of knowledge around disaster financial assistance. He calls for research examining the relationship between impacted businesses and those in receipt of relief assistance. He was sceptical business owners seek financial or other assistance post disaster:

Have we got an audit of that? I don't know. How many of them access any of the support, will be the biggest benchmark you can possibly imagine, because I can't imagine it be a great deal.

Rueben was critical of the grant conditions declaring the conditions failed to recognise many business owners lack adequate cash reserves to fulfill the grant application conditions to pay upfront and advocated for change to the system:

If you're a small business there's grants for up to \$25,000 ... and we'll [QRIDA] give you \$5,000. ...Now we're gonna make you jump through so many hoops to get that other \$20,000 ... And ... we're gonna make it even harder for you. You've gotta go out and purchase what you need, show receipts, and we'll reimburse you. These people are struggling already. ...the crop is gone, ... [hence the] income's gone ... these people live week to week so when ... there is no income ... they can't afford to go and buy items to fix up [the damage].

Xiao et al.'s (2018) study comparing household and businesses understanding of government assistance programs to help post disaster recovery after Hurricane Sandy in urban New York City, indicated businesses lagged behind households having no idea or little understanding of the programs available and what the application process entails. Then, post disaster, business owners showed marginal improvement in their knowledge of programs although the research failed to indicate how information sharing and dissemination took place to improve their knowledge. In the perspectives highlighted in the extracts above, there appears to be congruence with Xiao et al. (2018).

### 7.3.8 Loans

Grants are a single-issue payment to small businesses. Another source of assistance is a concessional or low interest loan of up to \$250,000 for small business (Australian Government, 2017). Like grants, loans are administrated through QRIDA. The concessional loan was historically set at four percent for some 20 years, but the Australian Government (also referred to as Commonwealth) introduced a base rate that consequently resulted in the Queensland Government eliminating its margin. Thus, loans, according to Menzies are now issued for “nothing” Coincidentally Harriet and Martin were the recipients of a four percent loan for \$50,000 in the late 1980s repaid over a four-year period. Martin said the loan “was in effect a high interest loan”.

In 2017, the concessional rate for a loan was one-point six percent with a term of seven years [Menzies]. Concessional loans are time consuming to assemble and the assessment needs to consider several matters which Menzies detailed: “[First, business owners]... have to have cash flow ...or they know their market and we can believe they are viable and there's a way through”. Then, what is critical and one of the biggest challenges with lending [to a small business] is their security and the third matter is the pre-event status and solvency of the business. Menzies asserts:

our challenge with loans is the [state] of the small business before the disaster. If you're in a difficult economic position before the event, it will either exacerbate that event ... it's pretty well tell-tale when ... worker's entitlements haven't been put aside; they've got issues with the tax department and ... they're not already on arrangements with the ATO ... if you're not viable now then, you know, viability is one of those things, if you're been making a loss for X number of years and you're not looking like you're going to recover ... well [QRIDA] can't be doing a loan.

Menzies' sentiment was echoed by SBO Mia who from past knowledge and experience was aware of businesses that were recipients of a loan. She recalled their feedback was positive but added only to a point because: "obviously they didn't like some of the government methods." What those 'methods' were, was not explored, however Mia indicated concessional loans work best for those businesses that "won't go under." Mia, like Menzies, said businesses "that were borderline" were going to go under anyway "the flood tipped them over."

Mia cautioned small business against the use of loans and indicated you're got to make sure that in the extension of time, that you can "give it back" as "you have to repay the loan and you have to think Am I going to be able to pay that in X amount of time?". She contended if the loans are called in, the concern will be whether business owners would be able to refinance the loans in a climate where banks are not lending.

In terms of the repayments, Menzies said flexible arrangements can be negotiated in the way a loan is repaid. For example, a loan "can be interest free for two years" which when "your recovering from a disaster is probably something you would expect." What this means then is that over the outstanding period of five years, a business owner is obliged "to pay your principal and interest on a loan of potentially \$250,000".

### **7.3.9 Mosaic of response and recovery assistance**

Throughout this study respondents reported or described a mosaic of supports and assistance available to small business. Some of these services or programs traverse the response-recovery overlap while others are activated post disaster phase or some months beyond the disaster event. Table 7.4 presents an indicative selection of the affordances mobilised across the three tiers of government, local, state, and Commonwealth levels. In addition, there are non-government examples like the philanthropic organisation Foundation for Rural and Regional Renewal [FRRR] and

the resources referred to by Roman and Grace at sub-theme 2 *Communicating with the community*.

As the findings reveal, much of what is mobilised by governments sits within existing policies, processes, and programs across the multi-tiered government institutions. For example, Centrelink participates at a CRC and advises the community about unemployment benefits and access to income support programs activated when disasters cause job losses. The Australian Taxation Office (ATO) mobilises its resources to work closely with professional bodies who volunteer to assist SBOs recover records and documents. Several key public sector informants reported the publishing of on-line resources that can be used immediately by business owners to develop disaster plans, checklists for business continuity plans and strategies to improve business security and safety.

Some key informants indicated the public lacks awareness of or understanding about the government’s investment in economic development and sustaining communities in a natural disaster context [Marc, Emilio]. Emilio observed governments are silent partners with respect to their contribution to reducing or mitigating the effects of natural disasters:

I don't think that there's an appreciation of exactly what government does in those situations. And the positive impact government's actions can have on local economies during those really difficult times.

**Table 7.4** Disaster assistance and support to small business

<b>Informants</b>	<b>Support description</b>	<b>Exemplar quotes</b>
<b>Emilio</b>	Ready Reserves Queensland Government employees deployed to Community Recovery Centres in disaster-affected communities	“Ready Reserves contributed an economic stimulus to disaster affected communities through spending on local accommodation facilities, food and general living supplies while on deployment”.
<b>Emilio</b> <b>Menzies</b>	Centrelink programs for community Household payments Newstart Benefits for unemployed who have lost their jobs	Re: Unemployment benefits “It needs to be activated ...if you’re got to stand staff down, they can get basically Newstart allowance until [SBO] can take them [employees] back.” [Menzies]
<b>Emilio</b> <b>Matilda</b>	Fee waiver-deferments – Government departments and agencies providing flexibility around payment of fees to enable business owners to overcome the immediate shortfalls in income after a natural disaster	“[The ATO has] provide[d] some flexibility with lodgement giving them leeway, for example. They’ve been very flexible.” [Matilda]

<b>Informants</b>	<b>Support description</b>	<b>Exemplar quotes</b>
<b>Charlie</b>	Partnering with other organisations to provide information and education programs	“Been partnering through our disaster management area with RACQ to develop some educational pieces, including some businesses templates and some resilience plans and continuity plans.”
<b>Nick</b> <b>Charlie</b> <b>Ava</b> <b>Kate</b> <b>Marc</b>	On-line resources for supporting business continuity planning, preparedness for natural disasters and recovery strategies Hard copy and USB resources on business planning and small business checklists Rural education program	“...we do a lot of information sessions and now disaster plans have a whole section in there about how to prepare a business.” [Nick] “So, business continuity plans, templates, disaster management plan for business. So that could be any business, and then it goes through simple things like, you know, getting your stock up off the ground or check your insurance.” [Ava]  “We've been partnering through our disaster management area with RACQ [insurance provider] to develop some educational pieces, including some businesses templates and some resilience plans and continuity plans.” [Charlie]
<b>Nick</b>	Public relations and marketing campaigns to stimulate tourism to disaster affected areas	“After the fire we ran a Back-to [location] campaign we'd get a little bit financial generation back [in the economy] people do come back.”
<b>Kate</b> <b>Marc</b>	Foundation for Rural and Regional Renewal. An organisation that works in partnership with government and businesses to strengthen rural, and regional and local communities. FRRR provide grants post disaster projects to support recovery in rural, regional and remote communities	“FRRR funds a philanthropic type fund -I understand that following a disaster they'll have a certain amount of funding available, and the local government can put in a request. A description of some work they'd like to have done over and above what council normally does.” [Kate]
<b>Matilda</b>	Professional businesses working with the Australian Taxation Office volunteering to help with small businesses	“We had an overwhelming response from members offering to volunteer to just help small businesses back on their feet. That was all coordinated through the ATO. Yeah, the ATO was absolutely amazing.”
<b>Kate</b> <b>Marc</b>	Business Enterprise Centre Mentoring and advisory services	“Federally funded that we had after those two floods (2011- 2013), which was through the Business Enterprise Centres (BEC) Ipswich delivered.” [ Kate]
<b>Lucas</b>	Local governments providing psychological speakers in disaster devastated communities to provide education and understanding about the impacts of disasters on communities	“...one of the things that council did which was amazing was they brought in Dr. Rob Gordon. Now he did seminars and after hours for any resident... he was able to help understand what is going on in your body and your brain [because of the natural disasters].”

Several activities that are undertaken in the community [over the long term] were itemised by Emilio. These measures relied on taxpayer funded projects which indirectly contributes to natural disaster response and recovery. One example he related was to infrastructure enhancements to regional airstrips to support the Australian Defence Force aircraft during disaster-related operations. Due to the weight of military aircraft, local airstrips can be severely “chopped up” warranting upgrades:

...Regional airports [redeveloped to be] up to a standard that would take a Hercules. ...[and protects the tarmac so that it] remains unflooded.

A further example given by Emilio was the deployment of Ready Reserves into disaster-affected communities. They are an immediate source of economic stimulus to many small businesses needing access to necessities of accommodation, meals, and basic supplies. Ready Reserves also coordinate restoring supplies into communities and local businesses:

flying in supplies like pharmaceuticals, delivering essential items, materials, newspapers, fuel and the movement of people in and out of communities.

Likewise, Nick drew attention to public authorities funding of public relations marketing campaigns [Table 7.4, Public marketing campaigns]. Other public informants, [notably Kate, Marc, Charlie and Ava], indicated that SBOs will be reluctant to search for assistance and are not always open to receiving support from public authorities, despite the information and support being publicly available and generally free:

You can put things in place to help educate businesses, but they have to take it up. [Charlie]

...We are working on developing some workshops. We have circulated the continuity plans and the templates, and we'll continue to do so. [Charlie]

They will at least be given the tools [business continuity plans, resources] to do that and they'll choose then after that, well, I'm not sure what else you can do, really. [Laughs] [Marc]

Several business owners acknowledged they were unaware of what government sponsored programs were available to help them in a disaster and beyond. Tomas indicated his naivety about the services for business with a firm “No” when he was asked whether he had accessed public websites for business information. Equally he had no idea about resources like the Business Enterprise Centre (BEC).<sup>25</sup> Similarly,

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<sup>25</sup> Business Enterprise Centre (BEC) is a not-for-profit organisation that works in partnership with the Australian Government, Regional Development Australia and other partners and primarily support small business operators who are wanting help and

Benita, was unaware of the BEC and indicated she found out about the Centre serendipitously after the Brisbane floods and suggested many business owners are ignorant about the BECs:

I don't think most small businesses even know what a business enterprise centre is. [How] I discovered it was because I started running events in Ipswich and the BEC in Ipswich was very proactive. [Benita]

As a final word regarding an understanding about public and non-government supports available in the community, Tomas' narrative offers insight into his knowledge void:

...What is the support for people who go through this? Small business owners, because they've lost everything and they just, they, well you're in your forties or fifties, that's your life. And all of a sudden you've got to start over again, that you're not prepared for, that there was never a contingency, that there was no help to say look, hey as a small business owner we value you in our community, you've gone through a really shit time, we'd actually like to spend time, meet with you and what are the processes, how do we get you back on deck, what, you know, you need counselling? [Tomas]

## 7.4 SUMMARY

Chapter 7 has presented the analysis of the political institutions data or Political Capital. Thirteen key informants with a background in the not for profit sector, business or a government instrumentality, contributed insights into the delivery of disaster management in SEQ.

First, sub-theme 1 Disaster Management Governance Arrangements provided a general overview of the governance arrangements as they operate in the SEQ region. Key informants explored a well-developed structure underpinned by legislation, policy and procedures. Information about disaster activation procedures were detailed with examples of extraordinary bodies stood up to oversee a multiplicity of disaster response activities. It was established a range of stakeholders with wide-ranging missions and responsibilities converge to form several formal bodies that support a response that later merges with the recovery phase.

Then, sub-theme 2 Communicating with the community addressed a key responsibility of governments and non-government bodies with respect to hazard

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support around running their business. They are found across each Australian jurisdiction. After a disaster, the BEC may be involved in helping businesses recover – as was the case with Lucas..

communications. The findings highlight disaster messaging and warnings disseminated by public authorities are tightly controlled and emphasise readiness for the community. Therefore, the messaging for warnings and disaster communications contains generic details to support all members and organisations in a LGA. This study revealed public instrumentalities uptake of a variety of media with a growing reliance on digital and online presence was indicated. Despite government authorities providing information and disaster communications in the response phase, SBOs reported disaster communications and messaging was sourced by them however it was unevenly accessed, some found the information inadequate or unreliable for rapid decision making.

On the other hand, non-government, member based organisations were identified as trusted sources of information and were being accessed by SBO regularly and more particularly when a disaster unfolds. Consistent with government authorities, wide-ranging media and digital technologies are employed to support diverse end users information needs to respond to a disaster. Critically ongoing surveys to support members – business owners, formed an important activity for non-profit organisations to maximise readiness planning, business continuity, planning and response efforts.

Last, sub-theme 3 considered a mosaic of institutional programs and financial assistance activities or affordances that are available for a business owner to support the response-recovery in the immediate aftermath of the event. Programs that take account of government policy and structures embedded in political institutions are activated at the time of a natural disaster. Despite the array of political affordances, the study revealed SBO are less likely to present to government activated recovery centres focussing their energies on the clean-up and re-opening of their business over finding seeking out help and information.

The next chapter will turn to the discussion of the findings from Chapter 6 and this chapter.



## Chapter 8: Discussion

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This chapter discusses the main findings presented in chapters 6 and 7 related to the aims of the study. The study had two aims. The first aim was to explore the decisions and decision processes of small business owners (SBOs) who owned a business in SEQ. The first research question looked at the decisions of SBOs during a natural disaster while the second research question explored the way SBOs mobilised their business capitals to support business survival and continuity. A second aim of the study was to understand the affordances provided by public and non-government entities to small business during a disaster. The third question then addressed these affordances to promote business continuity.

The discussion next is organised around three headings: Decisions and decision processes of SBOs, Mobilising of capitals and Political capital: Affordances. The decisions and decision processes of SBOs and mobilising of capitals relate to the first two questions. Political capital – affordances cover the third research question. There are interdependencies, interactions and synergy between each heading and its content. This is consistent with the capital's framework (Gutierrez-Montes, Emery, & Fernandez-Baca, 2009; Scoones, 2009). The human capital and agency of the SBO is central across each heading. Natural capital echoes the hazardous environment of SEQ, the region where business owners' live and work.

### 8.1 DECISIONS AND DECISION PROCESSES OF SBO

This study is about the response phase of a disaster. To reiterate, by definition it is characterised as short-lived, action oriented, involving fast decisions and the allocation of resources (Coppola, 2015). The decision theory of RPD was applied to understand how SBOs were making decisions in the response period. As a theoretical lens it looks at rapid decision making in dynamic and uncertain conditions. It was developed by Klein and colleagues (1988; 1998) and is underpinned by proficient people in their work domain who use their experience to make decisions without comparing options (Klein & Klinger, 1991). These decisions are meaningful to them (Klein et al., 1993). The model incorporates two components, 1. a situation recognition and 2. a mental simulation (Klein, 1998). The first part of the decision process sizes up a situation as

one that is familiar to one stored in the memory of the decision maker. Being recognised as familiar relies on four by products incorporating informational cues, goals, expectancies and a typical course of action. The second process involves a mental simulation of the chosen action plan, to assess whether it will work or not (Klein, 1998).

Overall, the findings in this study indicated the RPD model was an accurate prediction to understand SBOs' decision processes when responding to a natural disaster (Klein, 1998). The results in Chapter 6 and more specifically collated in Table 6.6 (page 136), revealed for these SBOs, the disaster situation is one they found to be familiar, drawing on a recognitional strategy to generate a feasible course of action (or decision). This study found the majority of decisions by SBOs were simple matches, that is a level one scenario in the RPD model that shows they tend towards rapid decision making.

#### **8.1.1 Familiarity**

The majority of SBOs had a direct experience of a natural hazard or they had vicarious exposure to such events (Klein, 2015). Having exposure to a natural disaster, serves to build an internalised repertoire of patterns associated with such hazardous events, contributing to the notion of a familiar situation (or typicality). Most business owners reported having multiple exposures to a natural disaster. Such an observation is realistic. SEQ is well known for being hazard prone as it was the site of catastrophic events, like the Brisbane Floods of 2010-2011 and Severe Cyclone Debbie in 2017. As well, minor natural hazard events are happening often: storms; heavy rainfall; flooding and strong winds (natural capital); or random utilities downtime (manufactured capital). These events can interrupt business operations. Despite being minor disruptions to a business, the experience of concrete events, increases the perceptual skills and mental models of a business owner (Crandall et al., 2006; p. 135; Klein, 1998; Klein, 2015). Thus, a business owner's likelihood of having a mental schema that can be compared with the current situation will be high. Furthermore, the experience will contain knowledge how things play out therefore, how best to manage and rectify the problems that ensued in the situation.

Familiarity with natural hazards, is aided by these business owners' proficiency in running their own business, measured in terms of longevity of ownership and business continuity. What this implies is that business owners understand what it takes

to maintain business operations and survive any disruptive event (Loucks et al., 2010; Mazzarol & Rebound, 2020; Schaper et al., 2011). Business owners also recognise having a small business is far from a miniature version of a “big business” (Storey, 2016b) with “slack resources” (Bradley, et al., 2011) to mobilise and reallocate in response to an arising crisis. SBOs are putting at risk everything they have invested in the business including the operating capital. Ultimately, they are responsible for the decisions made in their business (Gilfillan, 2015) including any mistakes and financial losses resulting from such decisions (Buttner, 1992; Jennings & Beaver, 1997; Walker & Brown, 2004). This corresponds with the NDM conditions of high stakes consequences (Orasanu & Connolly, 1993). Longevity in business ownership brings with it tacit knowledge (Klein, 2015) about the work domain, management of a business and tasks to be accomplished.

Thus, this sample of SBOs met two important conditions to build proficiency and confidence in fast decision making or recognition primed decisions. They were living and operating in a high validity environment (Kahneman & Klein, 2009). Such an environment provides business owners with first, real world operational experiences (work domain) as opposed to simulated or laboratory settings; and second, they are exposed to opportunities to learn and develop their skills to manage natural hazard events (Kahneman & Klein, 2009). Familiar situations form the basis for well-rehearsed courses of action (Lipshitz, 1993).

### 8.1.2 Situation recognition

A recognitional strategy was applied to decision making as predicted in the RPD model (Klein, 1998). Once the situation was judged as one similar to a problem these business owners encountered before, situation recognition by products were used (Klein, 1998) (refer Figure 4.1) to guide business owners on the best way to proceed. This involved observing the relevant cues before them, that provided the essential details as to the type of situation they were in. Further, the cues indicate the causal factors as to what is going on and likely to happen (Lipshitz, 1993). Based on the cues, feasible goals are set to achieve particular outcomes at a point in time; this generates a workable course of action within the given goals and expectations (Klein, 1998; Lipshitz, 1993).

In this study, cues were associated with critical information that was found *in situ* and external to the business owner’s workplace. A cue inventory presented in Table 6.4 categorised six types of information SBOs relied upon to manage a disaster

response. Repeating the six cues are: critical infrastructure and utilities breakdown; safety and well-being; environmental; nature of the problem; social, affective and behavioural; and mainstream and digital media. The cues correspond with the capitals framework. Infrastructural and utilities breakdown link to manufactured capital; safety and well-being relate to human capital (employees) and social capital (networks and relationships across bonding, bridging and linking ties); environmental and nature of the problem implicate the natural capital while social, affective and behavioural cues connect with social capital. Last, mainstream and digital media are associated with political capital. The alignment with the capitals framework is unsurprising. The capital resources correspond to the essential inputs for running a business (IIRC, 2013; Mazzarol & Reboud, 2020; Thomas & McElroy, 2016), that are degraded, or they are reorganized by business owners in a disaster.

The cue inventory provided an insight into SBOs selective informational needs under dynamic and high consequence conditions. Cue inventories have yet to be developed in the business and disasters literature generally, although Okoli and colleagues (2016) have compiled a set for firefighters while others have developed them in sport (Johnston & Morrison, 2016) and nursing (Crandall & Gretchell-Leiter, 1993). When comparing the firefighting cues (safety, environmental, nature of the problem, emotive, cues to inform incident control and command) with the current cues (critical infrastructure & utilities, safety and well-being, environment, nature of the problem, social affective, & behavioural, mainstream media and digital), there is a similarity between the two. This suggests there is a degree of compatibility in the environments and conditions under which firefighters and SBOs perform their work tasks. SBOs then, in a natural disaster context are recognising parallel situational information as trained first responders. Even though SBOs training is acquired on the job, with limited physical resources to mobilise, the cues reinforce their accumulated cognitive knowledge to undertake a response and their skills at doing so successfully.

Cues enable SBOs to make more accurate predictions about a situation. Although cues may be selectively chosen for their isolated information, in a disaster context SBOs were connecting several cues to make sense of the situation to act. The findings highlighted SBOs were watching the environmental conditions evolving (wind velocity, rainfall, storms) around the business or interpreting and integrating information from other sources, that is searches on media sources – Facebook,

commercial television and websites like the Bureau of Meteorology or local government or non-government sites. They were looking for current information about the weather and or flooding in catchment areas. Some were running their business concurrently implementing emergency plans. Operating a business meant business owners had the responsibilities of staff, interpreting the cues and messages from employees, customers and clients and protecting everyone's safety. SBOs were dealing with an extra layer of complexity while assessing the situation. They were using multi-sensory information and business acumen to discriminate the important cues, filtering those unimportant or irrelevant to the situation, matching the past features to the present environment to enact a workable solution. Consistent with Klein (1998) experienced decision maker's performance is distinguished from novices by their ability to hone-in on targeted information. The cue inventory points to those critical cues that support business owner's knowledge and are the basis to building disaster response skills (Okoli, et al., 2016).

An area of difference between the fire fighters cue inventory (Okoli, et al, 2016) and the SBO categories is the place of media cues, both mainstream and digital media. Significantly, the fire fighters are backed up by a coordinating control centre with a communications network managed by a public sector organisation. SBOs on the other hand, rely mainly on public and commercial media broadcasters, business professional bodies or social capital (employees, clients) for disaster information. The literature in Chapter 3 found disaster warnings and disaster communications designed only for the business sector to be lacking (Mehta et al., 2020). This may be explained by the political institutions' governance arrangements directed at producing mainstream disaster communications to serve the general "community" (AIDR, 2019). A finding that is highlighted under Institutional Inputs] (AIDR, 2019).

The cue inventory revealed SBOs have a reliance on mainstream and digital media to access reliable and current information before they act. An important aspect of media sources releasing disaster warnings and information is that it acts to pre-prime business owners in the lead-up to a disaster (McLennan & Omodei, 1996). Early warnings and circulation of disaster communications alert a business owner to an event, thus triggering in a business owner's mind "what is about to happen and what needs to be done". It can be assumed therefore before encountering a disaster, SBOs are cognitively recalling historic cue patterns, scripting possible scenarios about the

event, considering how long until the event will impact them and crafting how they plan to allocate resources. It can be assumed SBOs are seeking to match information with respect to the magnitude of the event. This corresponds with an association between if this condition exists then the following action is the most suitable response (Macquet, 2009; Okoli et al., 2016). Hence, being pre-primed a business owner is in a stronger position to have a “cognitive” emergency plan in place before the actual event. Pre-priming is not a construct found in the RPD model but was found to play an important role in SBOs strategy to respond to a natural disaster.

### 8.1.3 Course of action – decisions

A course of action is otherwise a label for a decision. In a natural disaster situation, two main decision types were observed by SBOs, logistical decisions and safety and well-being. Each decision generates particular types of knowledge that requires the SBO to perform certain types of functions (Klein, 1993).

The majority of business owners knew what action to take, without needing to deliberate over several options. The goals that SBOs were wanting to achieve were clear – minimise business closure, protect staff (and other stakeholders) and protect and preserve the business assets (refer Table 6.5). Logistical decisions reflect the preservation and protection of the stock and business assets while safety and well-being are concerned with protection and preservation of people from harm and injury. More broadly business owners overall outcome was to survive the event and continue operations. Once business owners recognised the actions to take, their resources were mobilised. Given the SBOs understand their capabilities and capacity, decisions were satisficing (Simon, 1955) rather than being the best or optimal.

These business owners indicated they only had a single option to consider. There was no indication they would take no action or look for another solution to the problem for protecting the business assets and staff. In selecting the first option, SBOs engaged in serial processing of their options, that is the first workable option generated was the preferred candidate (Klein, 1998).

While the features of a natural disaster were quickly recognised by this sample of SBOs, a disaster is influenced by time. The trans-impact periods of before, during and after the disaster, places a premium on timely action (Coppola, 2015). A conditional factor in selecting a course of action is when public authorities issue hazard alerts or warnings. Warnings may be released within hours, or days of the imminent

hazard. At other times there can be weather events that happen without warning or in contrast unfold over weeks prior to impact (for example refer to Lucas' comments on Brisbane Floods lead time was months of heavy rainfall. Chloe, Harriet & Martin watch flooding and rainfall in catchment areas distant from their worksites before an event is imminent). Knowledge of the impending event and the timing of the hazard impact is critical to what can be practically accomplished by a SBO given their capabilities and resources to implement a decision. As time is a contingent variable, the study results should be understood with this caveat in mind. The time variable can be implicated in forethought and pre-priming (McLennan & Omodei, 1996) or it forces a decision without accounting for recognitional byproducts (Klein, 1998).

### ***Underpinning influences on the course of action***

SBO have obligations associated with owning and running a business. They have responsibility for employee and visitor's safety and to protect them from injury and harm. There is a legal duty of care to operate a safe and hazard-free workplace (Work Health and Safety Act Qld, 2011). Hence, this legislative knowledge is mostly likely to reinforce rapid decision making.

Business owner's response to protecting their physical assets and stock is likely to be influenced by contractual obligations. They will have commitments to financial institutions like banks, government taxation responsibilities, suppliers, customers and their employees matching other findings related to response phase disaster and business literature as well as small business literature (Cater & Chadwick, 2008; Greenbank, 2001; Jennings & Beaver, 1997; Zolin & Kropp, 2006). Therefore, it is suggested they will be strongly motivated to protect and preserve their business investment across the five business capitals. A failure by a SBO to act in a disaster may compromise business operations in a post disaster context and impact on the survival of the business (Headd, 2003; Josefy et al., 2017) and its reputation (Cater & Chadwick, 2008; Morrish & Jones, 2020).

Finally, many of the business owners had a legal structure of sole trader or partnership. Hence, these business owners are likely to carry a heavy personal liability for any financial costs and burdens arising from disaster-induced damages and losses (Schaper et al., 2011). This knowledge is potentially a latent consideration for evacuation strategies and protecting employees and clients.

Explaining the decisions of a business owner cannot be isolated from their profession as a small business owner-operator. SBOs as ‘proficient’ decision makers contrast with past population samples of firefighters, medical, and military personnel (Klein, 1998; Ross et al., 2006) elite sports players (Johnston & Morrison, 2016; Kermarrec & Bossard, 2014; Macquet, 2009) emergency managers on oil facilities (Flin, Slaven, & Stewart, 1996) and outdoor education leaders (Boyes & O’Hare, 2003; Boyes & Potter, 2015). A common feature of these studies is the participants’ are mostly employees working in organisations with a shared knowledge base. Their decisions are unlikely to have a direct bearing on their livelihood. But for small business owners employing a few employees and with responsibility for all aspects of the business and daily operations (Buttner, 1992; Cardon et al., 2012; Cioccio & Michael, 2007), they will be involved in risk taking (Vossen, 1998). They operate at the margins with limited scope for business disruption (Cater & Chadwick, 2008). Mostly self-trained, learning on the job, the business is their livelihood and that of an employee, thus it brings with it obligations to other stakeholders (Cater & Chadwick, 2008; Howe, 2011). This personal experience and tacit knowledge will have a bearing on making fast decisions and the speed at which they execute them.

#### **8.1.4 Mental simulation and RPD strategy**

The majority of decisions by SBOs were found to be clear cut or recognition primed decisions (Klein, 1998). Business owners employed their perceptual skills and had a repertoire of mental models to achieve a fast action plan (Klein & Klinger, 1991). These SBO had internalised their responses to disaster situations. The problems arising for business owners, how to protect and preserve the business assets, stock and staff safety decisions were pre-empted applying the rule “if X condition exists, then Y response” prevails (Klein, 1998; Okoli et al., 2016). Table 6.6 highlighted the majority of these business owners’ decisions were dominated by a level one type response that is they were associated with being automatic and intuitive (Klein, 1998; 2015). Business owners were experiencing a situation in a changing context as familiar, therefore they could implement a course of action that corresponds to the situation. Hence most decisions were the result of a simple match (Klein, 1998).

However, the study also revealed the disaster context can be complicated for a business owner. Although this sample of SBOs held a repertoire of knowledge and experience in running a business and natural disasters, it can be difficult to generate a



straightforward action plan (Klein, 1998). There are times SBOs will be faced with uncertainty and ambiguity. Therefore, more time is spent on diagnosing the situation. This reflects a level 2 decision in the RPD model. Level 2 decisions require greater analysis and deliberation (Klein, 1998). Chloe in particular highlighted this when faced with inadequate and conflicting cue information sourcing media information on local government websites and through the Bureau of Meteorology website. Media sites are an external source of information for an SBO. Both government websites Chloe searched are considered trusted and reliable sources of information. Business owners need to interpret, process, and translate the external data to their immediate *in situ* circumstance (Okoli, et al., 2014). This translation takes cognitive effort that requires time.

Chloe needed to delve deeper, search for more information, visualising the sequence of events, before deciding if executing the flood plan was doable and worthwhile. Mental simulation helps generate expectancies as to the likely flow on effects from choosing a particular option. That is, imagining the option then anticipating the potential reactions and implications if enacted (Klein, 1993). Employing an analytic component, mental simulation is perhaps not unexpected nor unusual in a disaster context (Klein, 1998). Disasters are context bound with each event unique. The characteristics of each disaster will always be uncertain (speed of onset, wind velocity, timing of the event). Specific to Chloe's situation, the type of business she was in, she understood the commitment to carry out her flood plan. Implementing the plan is time and resource dependent, taking up to five days to complete. Therefore, business owners' are carefully calculating any response. In Chloe's situation she was assessing what was possible to accomplish in the time frame available before her business would be overwhelmed by the inundation. A further unknown was the anticipated height of the flood with the commensurate damage it would cause to her business. Especially if the option of no action was taken. The issue for her was whether executing the plan was viable in the given timeframe and what would be the cost-benefits of her decision. Noteworthy, as a postscript despite the decision to implement the plan, the whole worksite was inundated by extraordinary flood heights.

After the event, again Chloe experienced uncertainty and ambiguity in her assessment of the damage to the property. She carried out mental simulation on allocation of resources (human and time) to clean-up the workplace. Although she

knew what had to be done, she misjudged the scale and the complexity of the problem. Cognitively underestimating the problem is reflective of the unique features of a natural disaster especially when they are “unprecedented” in scale.

Cost-benefit calculations are embedded in the situational recognition and experience of this sample of business owners. Like Chloe, cost-benefits consideration were evident in Martin and Harriet’s decision to move stock on three occasions. They were facing losses of \$250,000, an extraordinary cost burden to this business as losses were unrecoverable given insurance was unavailable to the business at the time.

If a media cue source provides inadequate information, that is, not kept current for a SBO, like rainfall data, flood catchment details, or fire movements, SBOs are likely to be basing decisions on unreliable or outdated information. Updating information in a disaster context will be problematic. This is because disasters are by nature dynamic and fast changing.

Poor information can flaw the interpretation of the situation. This then highlights the importance of political institutions understanding ways to get information out to the community, especially SBOs, using fast digital technologies that can be quickly updated and information can be removed that is no longer relevant temporally and spatially. Such an approach recognises SBOs uniqueness as decision makers, accommodates their heterogeneity and needs as end-users’ of data. A point reinforced by Mehta and colleagues (2021) research who recognised business owners across all business sizes were selective in their information search in a disaster and warnings were oriented to households rather than the business sector.

Moreover, the current study highlighted another imperative to examine SBOs disaster information needs. These business owners’ are cognitively and physically juggling several responsibilities concurrently in a disaster. Not only are they dealing with their business responsibilities, including legal and compliance matters and work domain tasks, they are supporting their families and relatives. They were safeguarding their own homes, and those of relatives (Chloe) as well as attending to their safety and welfare. Hence reinforcing SBOs reliance on accurate data to maximise their decisions. This study reaffirms the challenges business owners face in business in a disaster with a “pile-on effect” emerging from demands in business and obligations privately (Runyan, 2006; Xiao et al., 2018 ). Mental simulation in this study becomes an important source of power during situation recognition (Klein, 1993; Klein, 1998) to avoid costly mistakes in time, effort and lost assets.

### 8.1.5 Planning and reflective practices

The RPD model lacks the construct of planning (Lintern, 2010; Macquet & Pellegrin, 2017) as part of the cognitive processes in rapid decision making. This study highlighted long term planning and protective measures readies a SBO for rapid decision making (Boyes et al., 2018). The model also overlooks capturing the decision maker's reflections after responding to an event. Business owners were proactively revisiting their workplace practices and introducing refinements to disaster proof the business.

This study revealed the sample of SBOs reflected a propensity to use disaster planning and preparedness measures (emergency planning and business continuity planning) with low level protective measures (first aid kit and meetings) that are regarded as human survival actions (Josephson et al., 2017). Longer term planning had a bearing on fast decision processes. Examples being buying into a commercial building with multiple levels (e.g., Harriet and Martin & Lucas); buying land in flood areas and developing the infrastructure of a worksite to address potential risks like a disaster (Chloe); purchasing a property with cyclone proof structures; or making informal verbal arrangements (Audrey). With respect to long term planning strategies, these actions reflect coherence in decision making that favours rational choice processes of logic, objectivity and analysis (Klein, 1998). Nevertheless, they are important and necessary strategies for some types of decisions (Klein, 1998; Lipshitz, 1993). In the context of a natural disaster, the long term planning and preparation decisions by SBOs play out as background knowledge that underpin situational understanding and an action plan (Boyes, et al., 2018).

The place of SBOs ongoing responses and reflections with respect to their disaster event is not a feature of the RPD model. This study revealed SBOs do engage in assessing the performance of the business after the experience of a disaster. They review their own actions and behaviour under pressure as well as the performance of their business processes and practices. Little credence is given to the importance played by SBOs learnings from responding to a natural disaster. The concept of "reflective practice" in this study takes account of the accumulative knowledge inputted to the cognitive store of SBOs. It reflects the lived experience of the SBO from such significant events, the salient cues, the disaster plan employed to prepare for the event, the hazard features and the problems to resolve at the time.

Social and political capitals also play a role to support a response (for example advice on flood heights - Chloe). This is discussed under mobilising the capitals. The RPD model has overlooked a learning feedback mechanism that respects the developmental processes of business owners. Reflective practice can extend their cognitive resources and skills to respond to future disasters.

As reflective practice is a progressive process, the learnings are important to capture and share with other business owners. The learnings indicate the steps business owners have taken to minimise losses (a source of preparation) and the cues to look for that have meaning to them (Klein, 1998). Their learnings can serve as basis for decision-support training for business owners responding to natural hazards.

The preceding section indicated SBOs human agency (human capital) was central to the decision making during a natural disaster (natural capital). Two main types of decisions were made in a disaster. Next is a specific discussion around how a SBO's capital resources of manufactured, financial and social capitals are implicated in the recognition primed decisions. Then the place of political affordances is discussed. The following two sections complete the response to how business owners' mobilise their capital resources.

## **8.2 MOBILISING OF CAPITALS**

### ***Manufactured capital***

Two types of manufactured capital were implicated in decision making of business owners. Cessation of electricity led to an immediate loss of business operations, while damage and destruction to infrastructure has longer term impacts on business operations. Time wise, the loss of infrastructure can be uncertain. Severe damage to a business owner's commercial premises involves decisions that focus on whether to repair and re-open a business or close it permanently. Cognitively, when electricity loss is experienced across business operations, business owners' understand under such conditions, few choices are available. Without the option of a generator, the course of action is closure of a business or improvise. While most business owners' closed their business, to progress their emergency response plan, Pippa, who was dealing with a flow of clients, improvised. As new information was received, she reviewed her goals with the focus on closure. Improvising finds support in other research (Doern, 2016; Morrish & Jones, 2020; Runyan, 2006) although business

continuity is severely impaired when overwhelming factors of utilities failure and infrastructure damage happens (Cater & Chadwick, 2008; Irvine & Anderson, 2004; Morrish & Jones, 2020; Runyan, 2006; Zolin & Kropp, 2006).

Tierney (2007) has acknowledged the challenge of business continuity under disaster conditions. She contends business owners are vulnerable to the decisions of third parties from public and private sectors and the mitigation strategies they implement to protect public utilities and infrastructure networks. One implication of manufactured capital failure is the immediate costs transfer to the business owner and their business continuity that directly cascades to diminished direct and indirect financial resources (loss of revenue, customers, wages, reputation). Business owners then need to focus on cost containment (Tierney, 2007).

### ***Financial capital***

The loss of manufactured capital, results in the deployment of financial resources. Business owners quickly perceived the impact of the disaster on the ability of their business to function. Expenditure was essential to restore operations: replacement costs for tools, equipment, plant, inventory; rebuilding damaged premises and remerchandising of stock and equipment. Mobilising financial resources meant business owners could reduce closure time, lost income and downturn in cash flow (Cioccio & Michael, 2007; Doern, 2016; Irvine & Anderson, 2004; Runyan, 2006).

The decision by business owners to transfer their financial resources to restore business operations has close correspondence with previous research findings (Chang & Falit-Baiamonte, 2002; Cioccio & Michael, 2007; Doern, 2016; Irvine & Anderson, 2004). They are known to carry significant hidden monetary burdens from disaster-induced damage to buildings, equipment, stock, inventory and data records along with livelihood funding (Chang & Falit-Baiamonte, 2002; Cioccio & Michael, 2007; Doern, 2016; Irvine & Anderson, 2004). SBOs generally prioritised protecting the business and restoring it by initially using personal funds. Absorbing the costs, these business owner's drew on business or personal savings, credit cards or family as a source of social capital to re-open (Chang & Falit-Baiamonte, 2002; Doern, 2016). Otherwise, waiting for insurance claim approvals and compensation took months. These delays are financially and emotionally carried by a business owner.

In extreme situations, Fleur divested retirement assets to support restoration of disaster-induced damages to their commercial property. The course of action was

instigated in the immediate aftermath of flooding, suggesting the business owner quickly assessed the burden of repayment commitments on the retirement assets while dealing with the extra loan to cover the cost of repairs for the commercial premises. Runyan (2006) contended business owners need to carry out cost-benefit analysis if intending to carry forward debts arising from recurrent natural disasters, which Fleur faced. Dissolving of retirement assets to support business restoration is a financial dimension that is under-examined in the disaster and business response literature that warrants future investigation. Xiao and colleagues (2018) mention retirement assets as a factor in their study although it was not explored as a finding.

Insurance as a risk transfer mechanism was not strongly indicated across all business owners (Josephson et al., 2017). Insurance offers financial protection to reduce vulnerability to losses from weather events and supports recovery. The literature in chapter 3 reported the uptake of insurance to be mixed (Cioccio & Michael, 2007; Drabek, 1995). In the current study, the business owners who carried insurance had it for regulatory compliance and/or contractual reasons. Otherwise, business owners had an industry based group policy. Financial losses are amplified in cases where business owners lack insurance. Therefore, the absence of insurance can be a cognitive motivator to execute a disaster flood plan or evacuation of stock [Harriet & Martin, Chloe]. Neither Chloe nor Harriet and Martin carried an insurance policy but activated a disaster / evacuation plan when the cues related to the flooding were confirmed. Equally, they began the clean-up once the flood waters subsided to reduce closure times and damage to their worksites and assets.

This study revealed much deeper reasons why business owners were reluctant to invest financial resources into the adoption of insurance. The escalating costs of an insurance premium (Cioccio & Michael, 2007) and wider political decisions were implicated in the viability of insurance in disaster-impacted regions. In SEQ, recurrent floods alter the boundaries drawn for LGA flood maps. These political decisions impact risk transfer strategies like insurance. They have a direct influence on business owners access to insurance and the cost of an insurance policy. Designated flood prone areas affect the options for insurance coverage. Issues like the viability of insurance and the contents coverage in hazard zone areas is under examined in the business and disaster response literature especially associated with small business with fewer than 20 employees. It remains an important theme as Australian governments and insurance providers promote insurance as a risk transfer option to support business recovery

(COAG, 2011). However practically insurance is expensive and specific types of insurance (flood, business disruption as examples) may be difficult to get or are unavailable for hazard prone regions. Therefore, insurance is proposed as having an influence on SBOs' cognitive insights and decisions. For some business owners, like Audrey and Mia insurance is a compliance matter and for a tenant like Pippa essential with constant disruptions to old, rented premises, hence integrated into their planning and protective measures. As this study is Australian and specific to this sample of small business, the finding may be indicative of political matters linked to this jurisdiction and this population sample therefore needs to be considered in terms of these factors.

A substitute for insurance coverage is a taxpayer funded grant. Discussion of the one-off grants process, eligibility criteria, and applicant approval conditions relates to processes in SEQ, Australia. It applies to one category of business size. This knowledge provides an extension to the literatures of small business, business and disaster response. Notably, Doern (2016) has indicated governments providing funds to business in a post crisis environment, should minimise red tape and avoid delays releasing money. The grants approval process in SEQ, was reportedly carried out expeditiously, encouraging business recovery. Grants appear to be a form of social security for small business, especially those without insurance. They help to buffer some of the costs arising from disaster damage and clean-up.

The study highlighted details of the concessional low interest loans available to small business. Key public informants claimed efficiencies in the turnaround of loan approvals. A finding that contrasts with international research that has identified dysfunctional administrative processes of long delays in loan approvals (Runyan, 2006) during Hurricane Katrina. Formal aid for the business sector was said to be scarce, with main disincentives in uptake of loans being their terms and conditions (Small Business Administration loans-USA) and challenges raising the security or capital (Runyan, 2006; Xiao et al., 2018). As this data are based on an event in 2005, caution is exercised in translating the findings to 2021. There is however agreement between overseas and the Australian loan system in that they are conditional on business owners having a sound financial footing for securing approval (Stafford, Danes, & Hayes, 2013).

### *Social capital*

Social capital resources across bonding, bridging, and linking capitals was strongly indicated in business owner's decision making. The study found SBOs' ability to mobilise quickly in a natural disaster is contingent on social capital resources. This was a finding evident in the business and disaster response literature at Chapter 3 (Cater & Chadwick, 2008; Doern, 2016; Zolin & Kropp, 2006).

The data on social capital have broad ranging implications for the private response of SBOs in a disaster. The findings here indicated SBOs relied on all three sources of social capital. While the RPD model stresses a typical situation associated with a typical action via serial option generation, this study showed experience on its own is inadequate to support business owners implement their decisions in a natural disaster. The empirical evidence suggests a causal relationship between bonding, bridging, and linking social capital and a business owner's decisions in a natural disaster context.

Bonding resources enable business owners to source extra human capital on a needs basis and mobilise these resources as first responders (Aldrich & Meyer, 2015; Doern, 2016) in order to execute their tasks. Bonding social capital contributed resources that lowered a SBO's transaction costs responding to a disaster. Further, recruitment of close ties moderates the psychological and emotional stresses of business owners in a natural disaster. Such an observation has been identified in earlier studies by Doern (2016) and Morrish and Jones (2020). Capacity to recruit close ties further enhances fast decision making, as it reduces stress and cognitive overload on the business owners (Lipshitz, 1993). It supports achieving their goals at the time, by overcoming resource constraints (Klein, 1998; 1993).

Bridging social capital resources act as surrogate first responders. This study highlighted bridging resources like next of kin connections, community or non-government contacts to increase the diversity of networks, were essential to help business owners implement a workable solution [notably Harriet & Martin, Chloe]. Because there are deficits in human capital in a business, the absence of a workforce impairs a private response to a disaster. What the findings do suggest is that a range of social infrastructure (Aldrich, 2011) becomes critical to SBOs when the scale of an event is catastrophic or unprecedented. Although SBOs can recognise the typicality in situations that generate workable and efficient decisions (RPD processes) (Klein &



Klinger, 1991), the practicalities of implementing a decision are complicated. Experiential decision making like RPD, in a natural disaster context for SBOs, often is only doable in conjunction with a stock of social capital to support such decisions.

Mobilising of bridging resources serves as an informal type of social insurance for SBOs to help risk manage their business in a disaster response (Aldrich, 2012, p. 2). These findings raise challenging questions with respect to the demands on SBOs to strengthen their base of social infrastructure. Social infrastructure resources become a source of disaster preparedness to respond to a disaster (Aldrich & Meyer, 2015, p. 2). Tomas, Benita, Roman, Matilda, Rueben, Grace and Nick acknowledge in the findings [refer Institutional Inputs], business owners are time poor, working in their businesses rather than out networking and building contacts. Therefore, it can be assumed building a reserve of social infrastructure will be challenging for business owners' if that is what it takes to supplement a response and early recovery.

The assortment of bridging resources reported in this study by SBOs, notably many of whom were business owners themselves, has significant benefits for a SBO. These human capital resources volunteer their tacit knowledge, skills, experiences, and training to complete response tasks. Such contributions reduce the transaction costs borne by business owners (Woolcock & Narayan, 2000). Further, business owners helping disaster-impacted small businesses are donating in-kind (financial) support in addition to physical effort and time that translates to financial contributions. While the hidden costs absorbed by business owners are reported in the business and disaster literature (Chang & Falit-Baiamonte, 2002; Powell, 2010), the hidden costs absorbed by bridging capital are side-stepped. This is a finding that warrants attention in the business and disaster response research.

More generally the findings demonstrated how social resources reinforce community well-being emerging from collaboration and civic participation. An observation made by Aldrich & Meyer (2015) and Doern (2016). Community spirit and generosity of people coming together to support SBOs has psychological and survival benefits reported elsewhere (Doern, 2016; Morrish & Jones, 2020; Powell, 2010).

Linking capital based on business owner's connections with people in power facilitated early warning information to support their decisions. Third parties who shared information about hazard changes, like politicians, SES officers, and council

members, altered the situation recognition (Okoli, et al., 2016). The cue information served to confirm the feasibility of a business owner's option as workable (Klein, 1993). Receiving information from trusted sources like local governments, has been reported in the business and disaster response literature (Doern, 2016; Drabek, 1995). However, what this information does raise is the difficult question about how to address inequalities in SBO access to politically linked connections, to inform their disaster response. It does reinforce the importance of publicly available warnings that is targeted, timely and readily accessible to all business owners.

Without social capital, the private response by business owners can be dramatically compromised. In a disaster context not all business owners have access to a supply of social capital, therefore they rely on their cognitive and physical resources. This was the case in the current study (Fleur & Lucas). An absence of social resources for a SBO can slow the response and rebuilding process or bring it to a standstill (Aldrich, 2012). Delays in responding to a disaster can precipitate problems. Being unaided by social resources, a "pile-on" of losses can accrue (Xiao et al., 2018). Notably longer closure times; losses to productivity, sales and revenue; delays in replacement of stock, equipment, and repairs to physical assets; hidden costs of depleted financial reserves as well as psychological stress and physical exhaustion. Previous response phase and business and disaster research observed such outcomes (Doern, 2016; Morrish & Jones, 2020) as have disaster-related social capital studies (Aldrich & Meyer, 2015; Aldrich, 2012). Likewise, this study identifies without a reserve of social capital, SBOs can experience a double-edged sword unable to adequately respond to a disaster and sustaining losses (Aldrich & Meyer, 2015).

Social capital serves governments by helping to fulfill their political goal of community recovery (AIDR, 2019; COAG, 2011). Access to and mobilising cross-cutting social resources, was found to increase SBOs' emergency response capacity. Extra social resources allowed business owners to implement their emergency plans and clean up while minimising the impact, losses, and damages to their business, and assets (stock, equipment, inventory). A crucial outcome from social assistance is the protection of small business in their commercial and economic roles. Social supports return a business to trading quicker, thus facilitating the supply of goods and services to the community, safeguard jobs (Cater & Chadwick, 2008; Zhang et al. 2009), and maintain their place as social units in their community (Xiao et al., 2018; Zhang et al.,

2009). Therefore, social infrastructure ‘affordances’ act as a barrier to ‘exit’ (Aldrich, 2012), supporting political institutions goal of community recovery and post-disaster economic development (COAG, 2011; RAI, 2013b; Woolcock & Narayan, 2000) and as a source of resilience (COAG, 2011).

### **8.3 POLITICAL CAPITAL - AFFORDANCES**

This section on Political Capital- affordances turns to answer the third research question for this study. The focus is on understanding the affordances available to SBOs in a natural disaster context.

Political institutions, notably public authorities, and non-government entities provide a range of affordances before, during and after a natural disaster to support business continuity. The affordances by public and not for profit stakeholders has been under-reported in the literature. Generally, it has been the voices of business owners, operators, managers, and employees that discuss the affordances they source at the time of a disaster (Cater & Chadwick, 2008; Doern, 2016; Xiao et al., 2018; Zolin & Kropp, 2006). Research involving different stakeholder voices in a single study in the business and disaster response phase has been absent. Doern (2016) suggested this knowledge chasm should be addressed. This study replies to Doern’s proposal by recruiting three stakeholder groups namely SBOs, public sector and non-government informants. Multiple voices and their stories are blended to produce a range of insights into SBOs disaster response. Multiple stakeholder voices are novel in business and disaster response literature to understanding SBOs responses to disruptive, high consequence events.

#### **8.3.1 Disaster governance arrangements**

Background details on the disaster governance arrangements for Queensland that translates to the SEQ are found to be consistent with the directions set out under Commonwealth and State-based official documents, both policy and procedural (AIDR, 2014, 2019; COAG, 2011; Eburn, 2013) and emergency law (Eburn, 2013). Public authorities’ responsibilities fit with the principles of the national emergency management arrangements to protect and preserve human life (AIDR, 2014, 2019; Queensland Government, 2018a) and protect and preserve property and the environment (AIDR, 2014). The findings by public authorities reinforce a clear demarcation of responsibilities between the State and its community members, with

the expectation there is a “shared responsibility” when everybody is responding to a natural disaster.

The State defines the community broadly incorporating the business sector. Significantly, community members are treated inclusively with respect to information supports during a disaster (COAG, 2011). Consistent with COAG (2011) and authors Zolin and Kropp (2006), a business response, as a community member, is a private matter that resides with the business owner rather than a public sector responsibility.

### **8.3.2 Disaster-related communications**

This study contributed empirical evidence on public authorities’ and not for profit organisations’ roles and responsibilities for producing disaster-related warnings, disaster communications and disaster education material related a natural disaster. Different to the literature findings in Chapter 3, which reported limited data were available about the business sector sourcing disaster information and warnings in a natural hazard, this study offers evidence to broaden our knowledge. In this study, public sector and non-government entities’ roles regarding warnings and disaster information was collected. The data have provided narratives to reveal each stakeholder’s priority and responsibility to a disaster affected community.

Public authorities’ warnings and disaster communications are disseminated to the whole community. It reflects their tasks according to disaster management governance arrangements (AIDR, 2014). Based on the findings from this sample of informants there appears little research and evaluation of public warnings and disaster information circulated in the community. This then suggests a lack of investment in understanding if small business has any specific disaster communication needs. The assumption therefore is that small business disaster information needs are comparable to other social groups in the community. That is, an individual, a family, the aged or disabled community members. Conducting investigations into the requirements of a SBO appears to be a significant oversight by public authorities, particularly as the evidence in Institutional Inputs reveal governments place the small business sector as the architect of community recovery (COAG, 2011; RAI, 2013b). Further, Mehta and colleagues (2020) identified business oriented risk and warning information in the Australian context was lacking. However, a caveat is raised on this finding. It is based on a small sample of informants with information related to a specific tier of government.

In contrast, non-government entities are continuously doing surveys to maximise their members' information requirements. Not-for-profit entities have identified business owners are time poor (Mazzarol & Rebound, 2020; Schaper, et al., 2011). Time influences how, when and where they access disaster information and warnings. The finding is consistent with Drabek (1995) who contended tourism managers were so focused on dealing with continuity of services and managing customers and employees in the crisis, they were unable to redirect their efforts to search for information. Likewise, Roman raised similar tensions for business owners and indicated the demands on and busyness of business owners in a natural disaster juggling the array of operational responsibilities, constraints them information searches. Further, Drabek (1995) highlighted the frustration managers can experience if the information is hard to find, as it can defer decisions about the timing to evacuate customers and staff.

While the non-profit sector is actively curating disaster material to support their membership base, not all SBOs will be a member of a professional body that produces disaster information to help them during a natural hazard. Consequently, public authorities form the main official information resource for business owners. The information shapes their situation recognition and the feasibility of a workable action (Klein, 1998) as highlighted in this study. Information also shapes business response-recovery trajectory. The study reinforces the value in considering differentiated content in warnings and disaster risk communications to accommodate business owners across the heterogeneity of business industries (Mehta, et al., 2020).

### **8.3.3 Relief and assistance**

Examples of the affordances reported by informants to benefit small business in the response-recovery phases were presented in Table 7.4. Much of the assistance reported by public instrumentalities for small business is embedded within local, state or commonwealth government programs that are activated or expanded in a disaster. This whole of government approach is consistent with the comprehensive emergency management for disasters (COAG, 2011; Rogers, 2011).

At the LGA level, the standing up of the Local Disaster Management Group helps to protect the broader local community (AIDR, 2014) with the Economic Recovery Group and the Community Recovery Centres tailoring responsibilities to restore socio-economic functions and encouraging economic development (Zhang, et

al., 2009). These response measures are formalised in official documents, policy and procedures to not only benefit the business community (Doern, 2016; Zolin & Knopp, 2006) but the whole community more generally (AIDR, 2019; Zhang, et al., 2009).

It was indicated few small businesses are attending the Community Recovery Centres to obtain disaster related relief and assistance information. Some caution is needed interpreting this finding as the sample of key informants and business owners in this study is small. A possible explanation for business owners lack of presence at such centres is the tension that exists managing their dual responsibilities. Business owners' focus is on cleaning-up the business premises to resume trading and resolving insurance paperwork (Doern, 2016) in tandem with managing personal issues (home and family matters) before attending a Community Recovery Centre (Runyan, 2006; Xiao et al., 2018). This suggests then alternative arrangements are examined for suitability to match business owners competing pressures. A few informants reported on government agencies involved in outreach programs and visiting small business workplaces. Similarly, not for profit informants were speaking face to face with business owners at their worksite or connecting to online to communicate information to them. Thus, an important feature in this differentiated approach is an informal and personalised relationship between stakeholders that aligns closer to the attributes of small business (Jennings & Beaver, 1997; Mazzarol & Reboud, 2017) thereby encouraging confidence and trust in political capital (Doern, 2016).

Several key informants observed a reluctance by SBOs to engage with government developed disaster related information resources. Free resources are published online, produced as a hard copy or in some cases available in workshop format to support business owner's plan for a disaster. Lucas confirmed SBOs are reluctant to get involved in educative programs. Explanations for this phenomenon of SBOs sidestepping government-delivered resources is offered by two USA studies.

Yoshida and Deyle (2005) found government efforts to enhance SBOs' knowledge on preparation and planning for a disaster should be targeted, although in this country SBOs preferred self-help products, were disinclined to attend workshops and trusted government and non-government agencies rather than material developed by consultants, vendors and contractors. Josephson and colleagues (2017) found consistency with Yoshida and Deyle (2005) observations. They identified the adoption of government produced disaster preparedness and planning information will be

minimal if the strategies presented to business owners are inappropriate or too costly to protect their business. Also, non-employing or micro-business with few financial assets, are unlikely to implement measures if there is no obligation (mandated requirement) to do so. Two conditions, the heterogeneity of businesses and the place-based hazard variations influence a business owner's decision to implement protective measures. Given their selectivity in how they anticipate threats, protective and mitigation measures are targeted according to the local hazard threats rather than dealing with all threats. As SBOs behave selectively, the implication for researchers, and governments is to "assess the overall adequacy of preparation with an eye for what is appropriate for the individual business situation" (Josephson et al., 2017, p. 34). This contrasts with assuming a standardised approach is suited and workable for every business type and geographical environment.

With respect to this study, the observations by the scholars correspond closely with business decision processes. Business owner's situation recognition is founded on their knowledge and experience of SEQ environment and common hazards, their business type and their "resources" available. As situation recognition and course of action reveals, SBOs refine their actions to a cognitive formula using a "no frills" approach to dealing with disruptions. Despite the small business literature recognising the stoic nature of business owners to "do what it takes" to maintain trading (Headd, 2003), business owners have both limits and constraints regarding what is cognitively, physically and financially possible. Consequently, it seems that a starting point to support SBOs is to recognise their specific and varying needs across the non-employing, micro and small business categories; the disparateness of the industry sectors and the type of business they are in (retail, professional, manufacturing). Such an approach was indicated by the not for profit sector, being proactively engaged with business owners at the coalface and surveys.

Poor uptake of resources could be explained pragmatically. Business owner's may simply be unaware what government departments and agencies provide to them. An observation made by several business owners and key informants. This then suggests that further investigations are necessary to capture the small business sector information needs, search behaviours, that influence the design of relevant marketing strategies. Notably, the resources produced by government may benefit from alignment with business owners' "reflective practices" and experiential lessons learnt.

### *Loans and grants*

The literature on disaster financial assistance for the business sector is thin. The findings in this study about disaster assistance offers rare insights into the SEQ (State and Australian Government policy) environment with respect to loans and grants for “small business with fewer than 20 employees” (Australian Government, 2017).

Speaking to loans, some caveats are highlighted in the following commentary. With respect to past research, the literature relates to the United States context. Research mainly arose from studies that were conducted in the 1990s linked to hazard events that occurred from the late 1980s (e.g., Alesch et al., 2001; Webb et al., 2000). Research has been based on studies related to Hurricane Katrina where dysfunction in public administration and leadership has been reported (Cater & Chadwick, 2008; Runyan, 2006). Further, in the United States loans are available to homeowners, renters, non-profit and any sized businesses to repair or replace damaged properties (Josephson & Marshall, 2016). Recent research has been on family-owned business with fewer than 500 employees (Haynes et al., 2018; Haynes et al., 2011). Older research found disaster loans to have a negative influence on business survival and recovery (Alesch et al., 2001). This backdrop is important to appreciate, when considering the comparability of studies and the data reported. Consequently, historic knowledge may not readily correspond with contemporary circumstances when reviewing loans.

One business owner was identified as having a low interest concessional loan in this study [Fleur]. The interest rate was 1.7 percent. Previously it was 4 percent [Martin]. The loan enabled Fleur to restore their damaged commercial premises and re-open the business. It was the only option when a loan was refused by the bank. The data here reaffirmed prior research indicating loan approval is problematic for business owners. A loan remains contingent on adequate security and a robust business model with cash flow to support loan repayment conditions (Stafford et al., 2013). As highlighted in the single case of Fleur, she returned to running her business in her 50s, taking seven years to retire the disaster induced debt, drawing on a combination of selling the family property and business earnings.

Unlike historic literature, this study details the loan application process, approval timeframes for a loan, key issues associated with the eligibility criteria, the conditions attached to loans and the concessional interest rate applied at the time (2013). Further,



the study presented divergent perspectives related to the benefits or restrictions of the concessional loan from an administrator of the program (Menzie), a beneficiary of the loan [Fleur] and an advisor [Mia] to business who benefitted from a loan.

Turning to grants, past research reported in Chapter 3, and more generally in the business and disaster research has paid cursory attention to grant funding in the international context. A report commissioned by Regional Australia Institute (RAI) that was carried out by Griffith University (Queensland) on the influence of business recovery to long-term economic recovery of rural Australian communities offers some observations (RAI, 2013a, 2013b). The Report is based on four case studies of businesses: one in Marysville, Victoria impacted by bushfires in 2009 and three businesses in Queensland: Emerald, Cardwell and Carisbrook affected by the Brisbane Floods in 2010-2011.

According to the RAI study, business owners had multiple problems with the program: the application form contained unrealistic criteria to meet; the program ignored the heterogeneity of business models; delays were experienced in disbursing funds; and there were reporting issues. This study, in contrast presented opposing insights. Few business owners expressed negative concerns about the application form or the grant approval process. Grant processing time in SEQ was considered expedient as was the disbursement of funds. It is difficult to compare the conflicting findings, given the cross-sectional nature of the disaster events. A possible explanation may be found in the public inquiries conducted in Australia after natural disasters. Inquiries are the sources of wide ranging recommendations for change in managing disasters (Productivity Commission, 2014; Queensland Floods Commission Inquiry 2012; Royal Commission into National Natural Disaster Arrangements, 2020).

Nevertheless, noteworthy the literature indicates providing efficient administration and quick release of funds to business owners in the response phase helps motivate them to restore their operations and resume trading swiftly (Doern, 2016). Conversely, extended delays in application processing and approval acts as a source of frustration that impacts on a business owner's trust in public authorities (Runyan, 2006). Public administrators in SEQ were engaging with the business community using multiple sources of digital-online resources in addition to face to face support (e.g., at Community Recovery Centres and through Outreach programs) to increase business access to financial assistance. Doern (2016) recommended

governments have efficient systems for supporting funding approval. Further, governments should demonstrate adaptability and flexibility in meeting small business needs. It would appear from the current study public administrators delivery of the financial assistance links with Doern (2016) and Zolin and Kropp (2006) recommendations.

Grants appear to be crucial to Australian small business to quickly overcome the impact of a disaster on their business. Especially so in cases where SBOs have no insurance or (long) delays are experienced in settlement of insurance claims. It appears then, grants act as an alternative form of social insurance to buffer businesses against premature demise. Nonetheless, the study did find a tightening of the scope of grants with implications for business owner's eligibility for aid. A finding that may signal the growing fiscal burden facing governments and communities from repeated and costly natural disasters (Deloitte Access Economics, 2017; Department of Home Affairs, 2018; Munich Re, 2015; Royal Commission into National Natural Disaster Arrangements, 2020). With repeated, costly natural disasters, the challenges for governments and the community alike appears to echo how best to cushion (financially) against such events (Munich Re, 2015).

Evidence of the Australian grants program broadens the knowledge on financial affordances available to small business and contributes new insights into the business and disasters response literature. The information complements the literature on loans. Multiple stakeholder voices [Menzie's, Rueben, Roman, Chloe, Mia, Fleur] broadened perspectives on the theme.

#### **8.3.4 Geographical boundaries for disaster assistance**

Understanding how geographical boundaries are established in disaster affected communities has been absent from the business and disasters response literature. This study provided details of some methodologies used to collect data to accurately determine the geographical boundaries of a disaster impacted community. The SEQ perspective is described with the findings related to selected LGAs. Data are implicated in scoping the parameters of a disaster and contributes to decision making at state and federal levels of government for establishing eligibility for funding assistance to small business.

### 8.3.5 Psychological impacts

Chapter 3 explored mental health as an importance issue to impact on disaster affected business owners. Business owners are vulnerable to various stressors experienced under different disaster contexts: earthquakes (Morrish & Jones, 2020); bushfires (Cioccio & Michael, 2007); and rioting (Doern, 2016). Other contemporary research has verified this trend (Kuruppu et al., 2013; RAI, 2013b). The Australian National Climate Change Adaptation Research Facility examining small and medium sized businesses adaptation to climate change (Kuruppu et al., 2013) stressed the importance for long-term psychological support for business owner's experiencing extreme climatic events. The RAI report (RAI, 2013b) argued the psychological trauma of a disaster for a business owner should not be underestimated, having an impact on their capacity to deal with administrative paperwork and insurance claims (RAI, 2013b).

The current study depicted compromised psychological and emotional status of business owners triggered by a natural disaster. Contrary to the previous research, this study offers insights on the impact of recurrent rather than one-off disasters on SBOs health. Thus, data relate to the accumulative effect of disasters on their general and psychological health.

As part of political affordances, the study revealed LGA Economic Recovery Group acted on knowledge of home-based and street-based business owners needing extra case management to support their mental health [Charlie] after disasters. Roman reported curating various mental health material and disseminating the information, all year round to maintain currency in the minds of SBOs of the "human dimension" of natural disasters. These actions reflect the grassroots relationship of local government and not for profit entities with their constituents that allows them to respond quickly to emerging issues (AIDR, 2014; Doern, 2016). This study reaffirms the benefits of closer attention to providing appropriate supports to SBOs to overcome natural disasters.

## Chapter 9: Conclusion

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This qualitative inquiry underpinned by the critical realist perspective has explored the decisions and decision processes of 11 small business owners (SBOs) during a natural hazard event in Southeast Queensland (SEQ), Australia. In addition, the study explored the affordances available to small business provided by public and not for profit entities through 13 key informants with knowledge about them. Pursuing this study, has provided insight into an empirical phenomenon yet to receive close examination according to the literature reviewed in chapters 2 and 3. The study was guided by recognition primed decision (RPD) theory (Klein, 1998; Klein et al., 2010), that emphasises decision making by experienced decision makers occurring in real time in their workplace (Klein, 1998). This study was informed by data collected from two interview methods, the critical decision method (CDM) and a semi-structured interview with the data analysed thematically to understand:

- the key decisions faced by SBOs and their decision making processes in a natural disaster
- how SBOs enact their decisions with respect to the deployment of six business capitals of human, natural, financial, manufactured, social and political capitals to maintain their business' continuity in a natural disaster context: and
- the type of affordances that are available to a small business from government and non-government entities that contribute to business continuity.

In this concluding chapter, a discussion of the significance of this research to knowledge, policy and future practice is presented. Multiple insights are reported as a consequence of this research project: the theoretical insights emerging from the findings; the contribution of the method of data collection; practical implications for small business policy and practice; study limitations; and last, suggestions for future research.

## **9.1 RESEARCH SIGNIFICANCE**

At a period in Australia's history when natural disasters are spoken of as "unprecedented", and "out of the box" this thesis is timely (De Smet et al., 2015; Department of Home Affairs, 2018; Royal Commission into National Natural Disaster Arrangements, 2020). Natural disasters result in disruption, turmoil, devastation, loss of life, damage to property and the environment and impact the mental and physical well-being of community members (Deloitte Access Economics, 2017; Royal Commission into National Natural Disaster Arrangements, 2020). Small businesses pervade every community forming the cornerstone of these socio-economic systems (Cioccio & Michael, 2007; Zhang et al., 2009). Being heterogeneous, they supply wide-ranging products and services, provide employment opportunities, fill niche markets (Howe, 2011; Storey, 2016b), contribute taxation revenue and value add to Australia's GDP (ASBFEO, 2019; 2020). In the response phase of a natural disaster, SBOs are their own first responders, managing multiple tasks in tandem: protecting their business; dealing with carer and family responsibilities; and protecting their homes (Runyan, 2006; Xiao et al., 2018). Their businesses are vulnerable enterprises with limited resource endowment, that when the intensity of the disaster has passed, they become the linchpin of community recovery (COAG, 2011).

Understandably then, knowledge about SBOs' decision strategies to respond to a natural disaster is critical. Firsthand insights are essential to appropriately inform policy, target disaster assistance and to design suitable and relevant decision supports that will sustain a vibrant and thriving small business sector. Especially so as small business is operating in unprecedented, insecure and uncertain economic times from the effect of natural disasters (Glasser, 2019; Royal Commission into National Natural Disaster Arrangements, 2020).

Based on the findings from this study, noteworthy theoretical, conceptual, and methodological contributions are presented next.

### **9.1.1 Theoretical**

The RPD model developed by Klein and associates (Klein, 1998; Klein et al., 2010) emerged from the naturalist decision making (NDM) framework. Therefore, it offers a practical theoretical model to capture real time decisions and decision strategies of SBOs in their usual workplace. It is a model that favours "experienced" decision

makers, who have “amassed a repertoire of patterns that can describe the causal relationships” occurring in a given situation (Klein, 2008, p. 457), rather than novices. RPD was able to describe how business owner’s experience enables them to reach workable, time efficient decisions, especially with few capital resources (human capital), in dynamic and uncertain circumstances of a disaster. This contrasts with a multi-attribute decision model that is underpinned by a calculated decision choice to find the best solution to a problem (Janis & Mann, 1977; Klein, 1998). Both time and information, which are foundational to rational decision making, are key elements to reach the best outcome. For a business owner who is focused on their business operations in a disaster, an analytical, deliberative decision theory is unrealistic, impractical and time consuming (Klein, 1998; Klein et al., 1993).

The RPD model has made an important contribution to the business and natural disaster response literature where little research has been devoted to decision making at the micro level of a business owner (Tierney, 2007). According to literature in Chapter 3, and more generally in the business and disaster literature, it appears this study is a first to apply the RPD to understand decision processes of SBOs responding to a natural disaster. It also provides a novel contribution to NDM and decision theory as the findings confirm the natural disaster context as an emerging and challenging environment in contemporary society that NDM and RPD can apply (Hoffman, 2015).

The natural disaster context was found to dovetail with the antecedent features found in the real world: time pressure, dynamic and uncertain conditions, and high stakes consequences (Orasanu & Connolly, 1993). The findings established that SBOs antecedent “experience” was acquired through deliberate practice, established routines and long-term business ownership (Klein, 1998, 2015) combined with several exposures to natural disasters in SEQ. Of note, SBOs contrast with past research with the emphasis on leaders in organisations that are resourced to deal with emergency situations (firefighters, military leaders, nurses) (Klein, 1998). This population sample form an original contribution to the type of ‘experienced’ individuals and work domain investigated in NDM using the RPD lens.

Further to the study situated across various academic literatures, it introduced a conceptual framework of business capitals. Bringing together these transdisciplinary research fields offers an original contribution to theory and knowledge across each discipline.

This study found most decisions by SBOs were oriented towards logistical activities associated with protecting stock and physical assets and staff/client's safety and well-being. This is perhaps not unusual and understandable. They are two decision areas that business owners understand correspond with essential resource inputs to support business operations and business continuity. Once these resources are compromised, they cascade directly to a business owner's capacity to deliver their goods and services to the market. Impairment to the resources, flow directly onto cash flow and business survival.

The RPD model provided an adequate fit to the data that support business owners' decisions flow from situation recognition that presents a typical action, to address the initiating problem (Klein, 1998). Generating a single workable option is associated with serial evaluation. The combination of a recognisable situation and a typical action corresponds with a simple decision match (Klein, 1998). These decisions appear automatic, being made without hesitation and implemented (Klein, 1998; 2015). Most business owners' decisions fell into a straightforward match consistent with Klein's (1998) RPD model.

Evidence of deeper thinking was found where anomalies arose in the recognition process. Delays in decision making occurred due to irregularities in information. Deliberation and analysis of the situation is aligned with diagnosis in the RPD model (Klein, 1998). Undertaking analysis reflects the second scenario of the RPD model (or level 2).

Several theoretical differences were observed in this study that stand outside the RPD theory. The RPD is based on *in situ* information, and assumes workable decisions arise from accumulated experiences and knowledge impressed in memory. The findings highlighted other contingent factors came to play to complement business owner's cognitive load in a disaster.

Small business owners in this study rely on short-term and long-term planning strategies. Short-term planning involves pre-primed readiness before encountering a natural disaster (McLennan & Omodei, 1996). Indeed, this is unsurprising. In the lead up to a natural disaster, public authorities release disaster warnings in the media to motivate the community to activate their disaster response plans. Warnings, weather forecasts and media reporting about an imminent hazard in the days before an event will trigger SBOs' cognitive thoughts about a pre-disaster response strategy. The

findings in this study identified SBOs were sourcing on-line government websites, Apps, talking to social capital, keeping a watch on catchment areas sometimes weeks and days ahead of an event. These preliminary behaviours pre-primed business owners to react swiftly (McLennan & Omodei, 1996).

Longer term planning activities were also important to making fast decisions (Boyes et al., 2018; Macquet & Pellegrin, 2017). These long-term plans revolved around building construction materials used on a building (cyclone proof) or considered infrastructure development of a worksite. Longer term planning decisions are likely to demand coherence, relying on rational and deliberative processes, especially where financial investments are being made. Combined pre-priming and historic planning actions contribute to the execution of *in situ* decisions, however they are not described in the RPD model (Lintern, 2010; Macquet & Pellegrin, 2017). To accommodate pre-priming and planning into the RPD model, it is modified to include both components in the assessment stage found at Figure 9.1. The findings reinforce the studies of McLennan and Omodei (1996) and Boyes et al. (2018) and Macquet and Pellegrin (2017) with pre-priming and planning providing a springboard for speedy decisions.

The finding business owners are undertaking an ongoing re-appraisal of their actions and the lessons they learn from experiencing a natural disaster is not described in the RPD model. To address this shortcoming Figure 9.1 has incorporated a reflective practice element into Klein's (1998) RPD model. Reflective practice translates directly into subsequent natural disasters as SBOs undergo a process of cognitive re-evaluation of their actions and outcomes from one disaster to the next. From such reflective practices, SBO are refining their skills and supporting the survival of their business.

The information used for situation recognition relies on four information sources: cues, goals, expectancies, and typical actions. In this study six cue clusters were categorised in the small business disaster environment. The cues are derived from *in situ* and external environments. These cues are reproduced in Figure 9.1<sup>26</sup>. Cues related to mainstream and digital media and social cues are worth singling out. Business owner's draw on their "cognitive resources" when a natural disaster happens but have a reliance on media and digital technologies (online, websites, print and

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<sup>26</sup> Environmental cue incorporates nature of the problem.



television media). Such sources helping to close gaps where they lack complete information. Third party media is a default information mechanism in the absence of a communications and coordination centre found in political institutions emergency response agencies.

With respect to media and digital sources, the data are external information sources. This information needs to be processed, interpreted, and translated (Okoli et al., 2014) to the immediate *in situ* situation. Thus, SBOs are engaging with and integrating this knowledge into their decision processes. Given each disaster is unique, with its own characteristics, business owners depend on the media cues they receive for each disaster event. Understandably then, SBOs will be prone to error, misjudgement or miscalculation that will influence decision processes and decision outcomes.

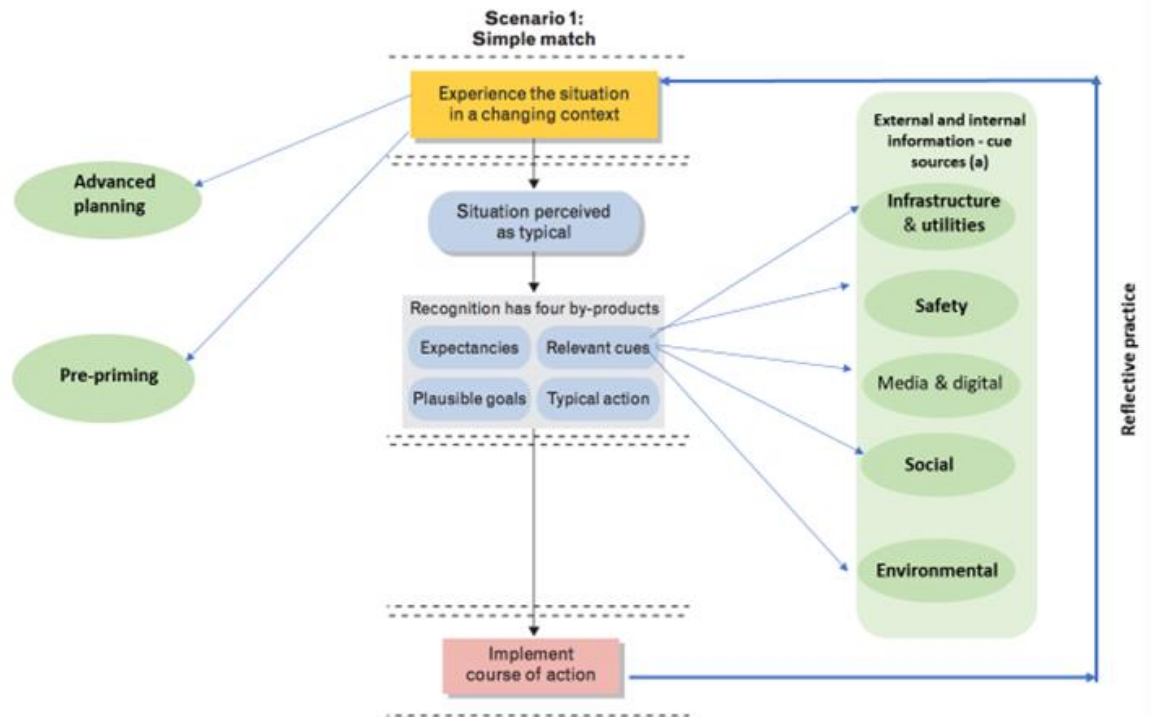
Social cues (also equated with social capital resources) serve as important *in situ* and external information sources to support a business owner's ability to recognise a situation and assess it quickly. Social resources in the immediate space of a SBO, that is the business premises, allows the business owner to visually observe their affective expressions and behaviours to quickly calculate any potential risks. Less clear-cut is integrating the expectancies of others as was evident with Pippa and her clients. This study also highlighted other sources of social capital contributed insider information valuable to situation recognition. To accommodate these 'secondary' resources, the model reproduced at Figure 9.1 highlights the internal and external cues based on the cue inventory created from the data analysis. This study finds an overlap with the informational constructs (social and environmental) in the Protective Action Decision Model (Lindell & Perry, 2012) and the firefighter cue classification (Okoli et al., 2016).

The combination of RPD, CDM and thematic analysis, has produced authentic stories of SBOs living and operating a business in SEQ through a high stakes event. In addition, the study has documented the affordances of public and non-government entities' to support the small business sector during and after a disaster. While an academic piece, the stories and information contained herein offer both theoretical and practical information to SBOs, policy makers, disaster management practitioners, the media, the public and research community. These real accounts of the lived experiences of SBOs and the affordance of political institutions are rarely brought

together. Moreover, it is novel to combine convergent and divergent perspectives of multiple stakeholders in the same study. Last, as a written and published document containing personal stories, it provides relatable accounts that the community, especially SBOs can quickly resonate with. Most importantly, the dissertation reaffirms the strengths and competencies of Australian SBOs responding to highly disruptive events. These are qualities Klein (1998, p. 1) has emphasised when examining decisions through the lens of RPD rather than focussing on perceived limitations and inadequacies of a decision maker.

The dissertation offers an important contemporary contribution to several literatures: business and disasters research, small business, naturalistic decision making and decision theory (RPD).

**Figure 9.1** Revised conceptual model for recognition primed decision making for small business owners in the context of a natural disaster



- (a) Refers to information cues identified by SBO as important in situation recognition during a natural disaster. Cue information contributes to decision making. Digital and media comprise important external information requiring processing, interpretation and translation to the *in situ* environment. ‘Social’ relates to affective and behavioural cues and incorporates visual, language, insider and outsider advice provided through social sources. Environmental incorporates nature of the problem cues. These sources of cues were found to be instrumental for SBOs decision making in a natural disaster context.

### 9.1.2 Conceptual framework of business capitals

The conceptual framework of ‘business capitals’ was applied in this study to organise the findings from the thematic analysis. Six business capitals were considered important to SBOs in the context of a natural disaster: human (related to the business owner and their agency), financial (income, saving and credit), manufactured (including business facility, infrastructure and utilities), social (connections and networks of the business owners), political (government and non-government entities and the affordances), and natural (relating to the weather and the hazard prone environment business owners live and work in) capitals. The six capitals proved insightful to understand how a disaster impacts each one.

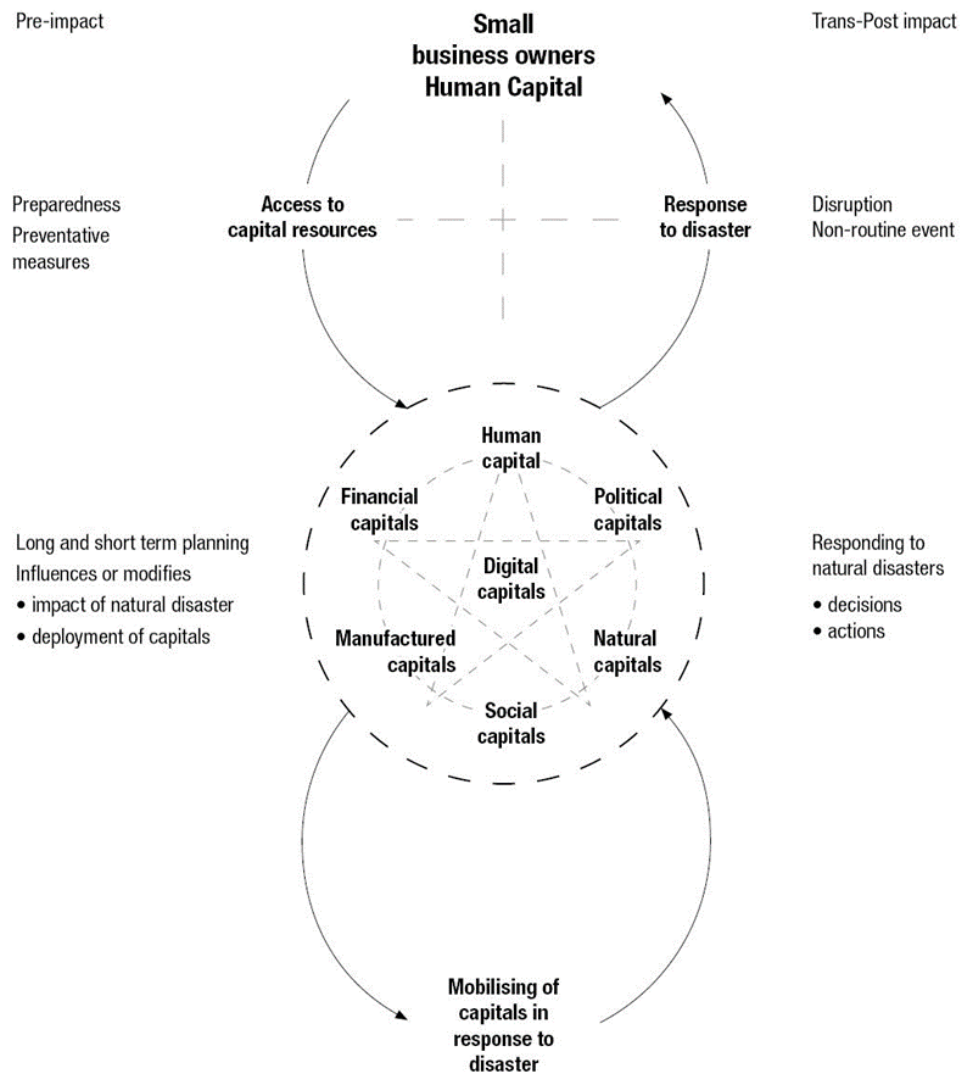
The application of business capitals framework is novel in the business and disaster literature. Most studies in these research fields incorporate three capitals: either human, social and financial (e.g. Danes, Stafford, et al., 2009; Haynes et al.,

2018) or financial, social and institutional (Xiao et al., 2018) while the community development field has used seven community capitals (Himes-Cornell et al., 2018; Stofferahn, 2012). The preceding studies emphasis is on community capital inputs or family businesses based on United States datasets. This study deviates with its focus on 11 business owners with few if any workforce. This study targets the capitals to reflect those resources essential to business operations and value creation (IIRC, 2013: Mazzarol & Reboud, 2020), that are vulnerable to degradation or loss in a disaster.

Resulting from the analysis, the six-business capitals framework has been expanded to introduce a seventh resource, referred to here as the Digital Capital. Findings from the study illustrated the dependence of SBOs on digital media cue information to complement their experiential knowledge when it comes to decisions in a natural disaster. The context for SBOs is ambiguous with incomplete information. They are constrained in sourcing accurate and reliable information to support their decisions. Leveraging of digital capital in a disaster is time efficient and involved few transaction costs to retrieve the information.

In future, to provide empirical and qualitative contributions to explore SBOs' decision making, Figure 9.2 reflects business capitals situated as central to SBO decision processes in the response phase of a natural disaster. The model observes the SBO as the main human capital in their business with principal decision making responsibilities. Disaster management components are incorporated including the preplanning measures, the response phase incorporating the trans-impact stages of *before*, *during* and *after* the event then the recovery phase. Business owners draw on the stock of the capitals available to them: human (their own agency and that of any workforce), manufactured, financial, social, political, and digital capitals that are leveraged, deployed, divested or modified responding to a disaster. The natural capital is a hazard source that disrupts the other capitals.

**Figure 9.2** Revised schematic representation of small business owner’s decision making during the response phase of the disaster management cycle, incorporating seven business capitals



Developed by the author, influenced by Beddington [1999],

### 9.1.3 Methodological contribution

The use of the CDM is novel to collecting data in the business and disaster literature generally and the disaster response literature specifically. Although, the technique is a common cognitive task analysis tool associated with NDM settings and when applying the RPD lens. Its origins are traced to the late 1980s (Hoffman et al., 1998) being initially tested with public sector experts in fields like firefighting, military, nursing (Lipshitz et al., 2006). Then its use shifted to the private sector (Flin et al., 1996; Hoffman et al., 1998). Despite having been developed more than 30 years ago, its

application to small business and their owners in the natural disaster context has yet to be achieved. One of the benefits of this study was to consider the CDM suitability to experienced small business decision makers. This study sheds light on the CDM's applicability to this occupational group to elicit their experiences and firsthand accounts of responding to a disaster.

The CDM was effective at extracting rich and detailed knowledge about business owners' reasoning, strategies, and cue information to make decisions. The method offered insights into the demands and pressures on business owners in the high stakes environment of a disaster. However, the administration of the instrument has its problems. Conducting research in naturalistic settings, the researcher is working in real work environments that can be messy, chaotic, and ambiguous in nature (Hoffman, 2015, p. 12). Challenges and issues were reported administrating the CDM at Chapter 5, Section 5.2. This necessitated improvising *in situ*. Thus, the CDM may have been compromised due to presenting environmental factors, that suggests a limitation for this research. The lessons learnt by the researcher from the experiences were documented with several recommendations put forward for use of the instrument in future small business settings.

Notwithstanding the preceding comments, more studies using the CDM are encouraged, as it offers rich and broad insights along with interesting discoveries (Hoffman et al., 1998; Klein & Armstrong, 2005). As a method, the CDM makes a valuable and original contribution to the small business and disaster/response literature. The documented review of issues and lessons learnt are additional findings emerging from the study that contribute novel knowledge.

## **9.2 RESEARCH IMPLICATIONS**

The study has provided evidence into SBOs' practices and behaviours in a natural disaster context. The study also reported a range of affordances contributed by government and non-government entities to help SBOs' respond to a natural disaster. Based on the findings from this research, several implications for policy and practice are highlighted and discussed next.

### **9.2.1 Disaster communications and business education resources**

Governance arrangements identify the responsibilities for multi-tiers of government related to community disaster readiness, warnings, and education for both natural and

non-natural disasters (AIDR, 2014; COAG, 2011). Applying the RPD, this thesis found SBOs are practical people, using experiential knowledge (pattern matching) to deal with disruptive events. If SBOs have limited or no connection with public authorities', then the likelihood of holding knowledge about the existence of the range of disaster information provided by government is potentially limited or non-existent. During the intensity of an unfolding disaster, business owners focus is on protecting and preserving their business, not necessarily researching for disaster warnings and disaster information, a perspective noted by Drabek (1995) and reinforced by Roman, Tomas, and Benita.

From a practical and policy perspective, with respect to the small business sector, it is important public instrumentalities recognise the sector is a unique segment within the "community" with specific needs when facing a natural disaster. This recognition by public authorities is important in order to maximise assistance to them. In advance of developing and publishing disaster related warnings, information and resources for the sector, first it is necessary to understand their unique features, including size categories, business relationship preferences and their specific informational needs. Then, to consider whether the development of a 'one size fits all' information campaign is a suitable match for these businesses and the industry sector they operate in. Mehta et al. (2020) has identified businesses are seeking more guidance around disaster planning and protective actions and targeted content in warning messages to help respond to a disaster. Finally, flowing from the design and suitability aspects is the marketing and awareness raising about the resources. Past research has verified that business owners often have peripheral insight into what government affordances there are (Xiao et al., 2018).

Additional to the preceding remarks, another practical implication is for public instrumentalities, industry sector peak bodies and the insurance industry to conduct research on small business needs *before, during and after* a natural disaster and longer term. Non-government sector entities are constantly undertaking surveys for monitoring and evaluation purposes. They gather data at the grassroots where they are experiencing the issues, trends and shifts in an economy as firsthand in their business. From this data, they design educational materials reflecting the end-users needs and disseminate through the media channels they prefer to receive the information. There is a need by public instrumentalities to conduct evaluations and curate information

consistent with meeting diverse community needs, especially as social media and online platforms and digital technologies are finding commonplace in how people search for and locate information.

### 9.2.2 Interactions between public authorities and SBOs

A practical methodological finding from this study is political institutions building rapport with a business owner. The study found representatives from public authorities and the not for profit sector are quick to be “on the ground”, visiting owners on site at their business and talking with them. They are exchanging valuable information and knowledge (political capital) and contributing physical effort (human capital) as well as connecting business owners with resources (social capital). This “time sensitive, relational support” (Mason & Brown, 2014), is important for SBOs and for their cognitive store. During interviews several SBOs recalled these interactions with political capital who shared information, provided paperwork, advocated for them and demonstrated leadership to support their response efforts.

The relevance of time-sensitive, relational support suggests from policy and practice standpoints, is the place of political institutions embedding greater face to face interaction and experiential learning, when working with business owners. This will be difficult to achieve. However, the approach respects the characteristics of a small business and the uniqueness of the small business owner especially as this study verified trust and confidence were important values to business owners in transacting with the public and government.

Nevertheless, just as important as relational support and management, is evidence based policy development related to small business and natural disasters. This requires data collection and evaluation on small businesses across several themes like the impact of a disaster on all types of business (home, street, on-line, mobile, digital) (refer New Zealand research by Brown et al., 2015); the uptake of grants and loans; data on business closures and demise, and the differential needs of culturally and linguistically diverse business owners’. Such data underpin political institutions decisions with respect to building the policy and practice framework for supporting the small business sector (Mazzarol & Clark, 2016). Knowledge that is crucial to capacity building for more resilient businesses and communities.



### 9.2.3 Community Recovery Centres

Another practical issue is the place of the Community Recovery Centre as the central point of contact for SBOs to source information after a disaster. The findings identified SBOs are unlikely to attend such centres. A key reason is time and prioritising business restoration and re-opening. However, the CRC is an important venue for such information like loans and grants, the application processes, obtaining forms and having the government representatives on hand to provide guidance and advice.

This suggests that alternative approaches may need to be considered. That is, public institutions engage differently with business owners by reaching out to them. Suggested approaches include outreach programs as described by Ava and Charlie; ‘pop up’ information centres in business areas; road shows; or establishing mobile centres that can be run out of a bus. Such strategies would increase visibility in business districts and knowledge of the range of affordances targeting the small business sector<sup>27</sup>. The examples here complement local government representatives visiting business owners at their worksite. This then reverses the expectation business owners leave their business to attend community recovery centres, diverting them from urgent clean-up and restoration tasks and administrative obligations including insurance claims (Doern, 2016). Key public sector informants Charlie and Ava and Reuben also highlighted the importance of responding to the specific needs of culturally and linguistically diverse business owners.

### 9.2.4 Data collection for determining geographic boundaries

Data and data collection, management and curation are areas of increasing importance, especially with disasters increasing in costs to the Australian economy (Deloitte Access Economics, 2017; Munich Re, 2015). The findings revealed data collection techniques to establish geographical boundaries for disaster-affected communities are limited and at the time of a disaster prove labour intensive. Current approaches have their shortcomings, notably the Australian Business Register (ABR) is neither current nor complete with business registrations, including those home-based. Geographical boundary tightening in disaster-affected communities is occurring.

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<sup>27</sup> This study found evidence of a local government responding to its community of culturally and linguistically diverse business owners providing mobile services with interpreters.

With respect to policy and practice, it is suggested an evaluation is conducted into data collection methodologies with a view to improving efficiencies and keeping databases current. This information is given to state and federal government departments to help determine geographical boundaries for publicly funded disaster assistance [*e.g., eligibility criteria for grants*]. Identifying accurately disaster-impacted small businesses including home-based will increase the awareness of the issues being faced by businesses in their community and provide transparency in decision making around funding decisions.

### **9.2.5 Psychological and mental health of business owners**

Recurrent natural disasters are impacting on the mental well-being of business owners SBOs. From a practical and policy perspective it is suggested governments, non-government entities, along with industry, professional industry bodies and the medical and allied health professions investigate practical ways to promote early intervention strategies to support the psychological health and well-being of SBOs. Roman identified awareness raising through published materials and integrating the importance of self-care into literature on business planning as standard practice for his entity.

### **9.2.6 Small business – disaggregating the three categories**

Small businesses are classified along a continuum of size categories based on workforce numbers: non-employing; micro-enterprises (one to four employees) and small business (five to 19 staff) (ASBFEO, 2020). When investigating the small business sector, and in relationship to disaster policy, there is merit in disaggregating the three size categories and considering each size as having distinct needs. Aggregating all sized business categories together as a single identity, and assuming they are a coherent group facing the same challenges and issues in the context of a natural disaster may oversimplify the complexities found in each category (Mazzarol & Reboud, 2020). Small businesses are heterogeneous, they vary in their resource endowment, business models, productivity capacity, technology and capitalisation, competitiveness and wages (OECD, 2019). Notably non-employing business have the lowest survival rate (ASBFEO, 2016).

Mazzarol and Reboud (2020) have argued for governments to adopt a ‘dual track approach’ if wanting to assist small business. On the one hand the policies

accommodate direct assistance and support while on the other hand via indirect measures (indirect industry policy, disaster response strategies, red tape, taxation, insurance policy). This study identified several areas of divide: non-employing/sole trader and employing businesses; being a home-based or street-based business, those that are capital intensive compared with knowledge intensive and those found to be essential compared with discretionary and those renting their business premises and owners of the commercial space. Therefore, governments give credence to policies and practices designed to support and accommodate small business diversity with an underpinning focus on sustainability and the creation of a business enabling environment (Mazzarol & Clark, 2016). After all, in Australia, 98 percent of businesses are “small” with fewer than 20 employees” (ASBFEO, 2019) yet 89 percent are non-employing or with between one and four workers (ASBFEO, 2019). Small business’ remain the overwhelmingly the contributors to the nation’s workforce and economic prosperity (GDP). Policy and practice should reflect such statistical data when designing disaster responsive programs.

### 9.2.7 Insurance

SEQ is a hazard prone environment for SBOs. This study revealed significant challenges face SBOs with respect to insurance. Notably half the business owners were unable to secure business continuity/business disruption insurance or flood/fire insurance without paying for prohibitive premiums with limited content coverage. Grants appear to be a resource to pay the excess on insurance claims, thus it raises concern about insurance as an option for risk transfer in SEQ (and more broadly).

Affordability of insurance is increasingly a problem for the small business sector. It is a sector with the least capacity and voice to overcome the issues faced by uncertain and uncontrollable events like a disaster, especially singlehandedly. It would appear insurance for small business is an acute problem needing immediate, constructive and practical attention by governments, the insurance industry and business peak bodies to develop workable solutions. “Experience” in this study was identified as a powerful, survival resource possessed by business owners. However, experience is only able to protect a business so far. There is an urgent need to investigate broad ranging strategies to accommodate the heterogeneity of small business industries, in addition to what business owners can do practically and structurally within their capacities. Especially in a climate of repeated disasters.

One option is to find sustainable and creative ways that encourage disaster-proofing a worksite. Matilda emphasised the development of disaster-proofing ideas as a potential bargaining tool when negotiating an insurance policy as a way to reduce the premium. Governments, industry and insurance providers could develop resources that reflect best practice SBOs' approaches to innovation in business protection (Cioccio & Michael, 2007), that can be adopted. However, the small business literature suggests responsiveness to new ideas should take account of small business characteristics and the attributes of the owner (Josephson, et al., 2017; Mazzarol & Clark, 2016; Storey, 2016b; Yoshida & Deyle, 2006). Encouraging uptake of any protective strategies needs to consider cost effectiveness, the experience, skills and competencies of business owners (Cioccio & Michael, 2007; Mehta et al., 2020), the credibility of the resource provider and targets the environment in which a strategy is to be implemented (Josephson, et al., 2017; Yoshida & Deyle 2006).

### **9.3 RESEARCH LIMITATIONS**

Keeping in mind the CDM points earlier, and the limitations documented at section 5.7, this section discusses several other shortcomings.

First, Chapter 5 highlighted the sample population of SBOs, and the key informants were selected purposively. Purposive sampling is dependent on the personal judgment of the researcher thus can be a source of bias in the findings of the study. The author recognises challenges exist recruiting relevant respondents willing to participate in research (O'Leary, 2017). Every effort was made to obtain a mix of small businesses sizes (non-employing, micro and small) and heterogeneity of industry types however obstacles exist when seeking to recruit SBOs (Howe, 2011; Kuruppu et al., 2013) and key informants against strict eligibility criteria.

A serendipitous feature of this study is some key informants were coincidentally former SBOs. Of the total 24 participants in the study, 17 have owned or managed a small or medium sized business. Grace gained experience from her parents' business while Rueben was operating a non-employing, non-profit business. Despite an unanticipated finding of such a high percentage of human capital with personal involvement running a business, the numbers have contributed to strengthening the validity of this study. Nevertheless, the sample population and the backgrounds of the participants limit the generalisability of the study.

Second, this study is limited in its generalisability to other contexts. The Queensland-based study identified a unique feature of LGAs having a main role in disaster management. Therefore, the knowledge presented here relates to the Queensland jurisdiction and may not correspond with the arrangements found in other Australian states and territories, given their jurisdictional independence in undertaking disaster management (Eburn, 2013). The knowledge may also be incompatible with overseas jurisdictions. However, many of the findings in this study were found to corroborate research relating to catastrophic events in Australia and elsewhere as discussed at Chapter 3.

Then there is an argument that organisations overstate their level of preparedness for a disaster and are likely to present such information in a positive light. This perspective has been raised in research investigating preparedness in large corporations and studies eliciting the perspectives of employees about preparedness at their worksite (Fowler, Kling & Larson, 2007; Larson & Fowler, 2009). It is suggested there is a marked difference in the perceptions of an employee compared with their employer, and in organisations with a large headcount compared with a small business that is non-employing or with few workers. The physical and financial resources being a clear difference, as is the delegation of tasks and responsibilities between a SBO with few staff and a corporation with many workers.

The author suggests the observation lacks easy translation to this study. On the contrary, SBOs were found to be humble and many in this study acknowledged their personal and business shortcomings related to preparedness. For example, Audrey openly declared she had no formal disaster readiness planning but identified an informal verbal agreement to protect her cold storage supplies. Lucas indicated he was unaware of his community being flood prone and had no idea how to prepare for the first flood event. Chloe, in her cue recognition disclosed she is prone to miscalculating cues with respect to implementing her flood plan and the clean-up. As reported in the reflections in action, SBOs are continually undertaking a self-evaluation with respect to their preparedness strategies for a disaster when they experience an event. The preceding observations tending to discount the previous literature related to large organisations.

Last, this qualitative and exploratory study may be criticised on the grounds of the accuracy and reliability of the autobiographical recall of the disaster events by

business owners and key informants. Particularly interviews of historic disasters that occurred up to 18 years ago (Harriet and Martin). There are studies that have disputed this assertion suggesting disaster survivors' recollections are stable overtime. This is especially so when events involve one's personal experiences across the emergency response phase (Grimm, Husle, Preiss & Schmidt, 2014; Sotgui & Galati, 2007). Factors identified as reinforcing a strong memory recall include the characteristics of the hazard event, the speed of onset, the intense media coverage and the sharing of stories within the community, amongst family, friends and business colleagues (Grimm, Husle, Preiss & Schmidt, 2014; Sotgui & Galati, 2007). The list of features preceding resonated with this study participants. Harriet and Martin faced memorable flood heights of 21.95 metres while several SBOs reported intense media coverage (Mia, Roman, Erin). Sally recorded the impact of bushfires in photos that she collated and presented in a booklet to her community library. Likewise, Martin published their disaster response to the flooding in a book containing community contributions that was published and again deposited in the local library. Other's spoke of the deep cognitive imprints from the loss of one's home (Roman), lost lives of employees' (Roman), destroyed business and post-traumatic stress disorder (Tomas) and vicarious distress helping SBOs in the clean-up and advocating on their behalf (Benita, Rueben, Roman, Emilio). Such deeply embedded memories reinforce the retrospective recall of this sample of business owners and informants as reliable, if not robust.

## **9.4 RESEARCH AVENUES FOR THE FUTURE**

Flowing from this exploratory study, several avenues for future research have been identified. These are set out below.

### **9.4.1 Replication of the current research**

Given this study was exploratory and with a small sample of participants of SBOs, from limited industry sectors and a narrow cross section of public and non-government informants, there is value in repeating the study. Future research would benefit from increasing the diversity of participants. First, a broader cross section of small business sizes, including home-based businesses and business types (for example high tech, pharmacy, professional services, used car yards). Second, a broader scope of government policy and program representatives (Local Government officials, business advisory services, Small Business departments, Centrelink, Fair Work Commission

ATO) and private sector representatives, notably the insurance sector and the media. Replication of the study can focus on deeper insights into decision processes with a view to developing decision support aids that match SBO needs. As well, the study can contribute to knowledge of political capital entities governance responsibilities and affordances they provide.

#### **9.4.2 Business capitals**

In addition to the previous comments, the conceptual model of six business capitals was used. The model is a way to reflect the real-life inputs to running a small business and the impact of a disaster on resources business owners' rely on. In the absence of a consistent set of definitions for each capital and relevant measures, it warrants an exploratory qualitative inquiry to examine the framework. Future research would benefit from developing both definitions and measures for application to the small business and natural disasters context. This will provide a basis for comparative studies and longitudinal research. Figure 9.2 conceptual structure may form a basis for developing the definitional/theoretical constructs.

#### **9.4.3 Absorbing the costs of disasters**

Similar to past research (Chang & Falit-Baiamonte, 2002; Runyan, 2006; Xiao, et al., 2018), SBOs rely on their personal funds, business savings or are financially supported by close ties (and social resources) overcome the adverse impacts (damages to building and stock) of a natural disaster. This study also revealed business owners are eroding their retirement assets. Future research would benefit from investigating the disaster induced costs to SBOs across various dimensions (e.g., erosion of savings, lost wages, degraded business financial reserves, loans, grants, closure times, impact of disruption from downtime-power). Likewise, the cost-benefits of social resources helping SBO sector overcoming the disaster. Social resources, otherwise many Australian taxpayers carry a cost burden that is hidden when contributing their time, effort, skills and funds yet an estimated value on this contribution is missing. Conducting an independent assessment on the economic benefits of volunteers to SBO can be useful for demonstrating the impact of volunteers to reduce the hardship of disasters on the business sector and valuable to understanding contributors to resilient communities.

#### **9.4.4 Sleeper crisis – the enslavement of SBOs to their business**

Hidden issues consequent to natural disasters were raised by respondents that were regarded as a “sleeper crisis” a term explicitly used by one respondent. Several respondents discussed the ‘enslavement’ of business owners in their business. SBOs operating a business in ‘hazard declared areas’ are facing difficulties selling their business or the commercial premises they own because of this label. Participants referred to communities where shops are now permanently vacant. At one point in time, the business and premises were regarded as retirement assets and a steady income for the owners. These assets have become a liability, unable to be insured, leased, or be sold. Exploration of the extent to which natural disasters are eroding commercial business districts in rural and urban communities is an important field for exploration and inquiry.

#### **9.4.5 ‘Tipping points’ of small business**

Research has identified there are ‘tipping points’ to adaptation in the context of disasters specially with the overlay of climate change (Dow et al., 2013). The informed comments by business owners and key informants in this study offer firsthand knowledge and experience of how tipping points can arise, especially in cases described as ‘out of the box’ or unprecedented events (De Smet et al., 2015; Royal Commission into National Natural Disaster Arrangements, 2020). SBOs and their businesses are in precarious states. Today many are unable to obtain cost effective insurance, access to financial backing (through banks and financial institutions), embedded in hazard tagged environments, with business owners recurrently eroding savings and resources to respond to a natural disaster. Research is warranted that considers a futures-oriented, mixed methods investigation to accommodate the “new order” of business and natural disasters. Research that offers insights into anticipating adaptation limits and the consequences of exceeding these limits (Dow et al. 2013) will fill a gap in the current business and disaster response debates.



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# Appendix A: SBO interview protocol

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## Introduction

Thank you for agreeing to participate in my research project.

I would like to firstly ask for your consent to hold this interview and for the interview to be audio-recorded. A consent form is provided for your signature.

Below are the types of questions I will be asking today. You are welcome to expand on these areas or contribute to the new questions.

## Background

In this research study, I am looking at the decisions of small business owners when they are faced with a rapid onset natural hazard – this can be a bushfire, earthquake, severe storms, tropical cyclones, flooding, or storm surge as examples. I will also ask you about another business crisis you have experienced drawing on the same interview questions.

## Situation

Can you begin by telling me about your business and the background to the natural hazard event/ other business crisis you have had direct experience of?

Can you describe the situation – when the event happened, the type of event, what was going on before the situation occurred (context, general environmental factors, what were you aware of)? Share with me:

- What were you doing?
- What were you hearing, seeing, noticing at the time?
- Were you alerted to the seriousness of the situation – and how did this happen?
- What did you do at the time when you realised the seriousness of the situation?
- What was the outcome of your decisions?

## Pre-planning and contingency measures

1. Had you anticipated the possibility of this type of problem when you were developing your business plan, or general planning you do for the business?
2. Tell me about the type of contingency measures you have in place, to protect your business? How have your contingency measures been implemented and how do you think they have worked?
3. Did you find you had to deviate from your planning for a crisis/disaster situation? What were some of the factors that influenced you to change tack?
4. Did you need to make some difficult decisions about your resources – the building you are in, your finances, the services you deliver ... other

## Option generation, interactions & engagement & experience

5. What options did you canvass when making your decisions? How extensive were these options?
6. What were some of the limitations you were faced with when considering the possible alternatives?

7. Can you tell me whether you had complete control over the situation and decisions you took or did you involve other parties? Can you give me some specific examples of those people or organisations that may have been influencing/ contributing information to you?
8. What type of information proved to be most valuable?
9. How did this information come to you?
10. What supports and help did you need to deal with the situation?
11. Was there or are there any person/s that you depend on or things you depend on that help you get through the situation? Can you provide some specific examples?
12. Your past experiences, were these important to you when dealing with this situation and if so can you describe how the past experiences were important?

### **Goals**

13. Tell me about what were important objectives for you at the time of the event and how did these goals influence your decisions?
14. Did the choices you made achieve the outcome you wanted? Were other choices considered and rejected/acted upon?

### **Time pressure and uncertainty associated with the situation**

15. When the event was unfolding, can you describe the time pressures you faced to make your decisions and implement them?
16. How much uncertainty surrounded the situation that impacted on your decisions?
17. Do you feel these factors – time pressure and uncertainty influenced your outcomes?

### **Results of your decision-making**

18. Having taken your action/actions, how well do you think they worked?
19. Do you feel your actions worked as you expected? Why/Why not?
20. If the actions were inadequate or inappropriate, what factors contributed to the outcome?
21. Reflecting on the time and your decisions, what would you do differently?
22. What do you think a less experienced small business owner would do, or how do you think they would respond to the situation?

### **Moving forward**

23. From this experience and the learnings, you have gained from the experience, can you make some suggestions as to how improvements can be made to better respond or enhance the situation in future
  - personally, at the small business owner level
  - local council, disaster planners, professional organisation, landlords, insurance companies, accountants, warnings and messaging, public utilities, anything/person, organisation

### **Closing**

Follow-up details – transcript

Thank you for your participation

# Appendix B: Key informant's interview protocol

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## Introduction

## Background

Can you begin by telling me some information about your background and your involvement, or your organisation's involvement in the natural disaster space and the relationship to small business owners' in the local government area.

In your role as .....tell me about the type of information you provide to small business owners around disaster risk reduction management and the disaster cycle components (that is prevention/mitigation, preparation, response, recovery)?

From your perspective, observations and experience

- How well informed are the local small business owners before you provide the information?
- How is this information provided?
- How frequently do you 'educate or inform' the small business community?

What information do you believe supports the current approach to help small business owners make sound business decisions to influence small business survival?

What 'else' do you believe would benefit small business owners?

What would be the practicalities of providing these additional supports to small business owners?

Who else do you think should be included in this discussion about ways to increase small business survival and their ability overcome difficult and challenging crises like extreme weather events and other types of crises?

From your perspective what type of responses and feedback are you receiving from small business owners because of the approaches the local government council is taking or other community organisations?

Into the future, from your experiences of the natural disasters, do you have plans to increase support to small business owners?

Is there anything else you would like to add?

- Are there other things – emerging issues, concerns or innovations that are valuable to this discussion, that you might wish to contribute

Is there anything you believe that has yet to be discussed or I have left out from this conversation?

Can you suggest others – government or non-government, community members such as accountants, insurance brokers, bankers or non-profit organisations that would be beneficial to invite to participate in this conversation? Expression of Interest forms available

Thank you for your time and valuable input

# Appendix C: Demographic data of SBOs

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## NATURAL HAZARD EVENT

## IMPACT ASSESSMENT

Journal entry.....  
Date.....

Business owner name .....  
Business name .....  
Business address .....

### Previous disaster experience

- |  |                                     |
|--|-------------------------------------|
| <input type="checkbox"/> Bushfire              | <input type="checkbox"/> Storm      |
| <input type="checkbox"/> Tropical cyclone      | <input type="checkbox"/> Earthquake |
| <input type="checkbox"/> Cyclone               | <input type="checkbox"/> Flood      |
| <input type="checkbox"/> Severe storms         | <input type="checkbox"/> Other..... |
| <input type="checkbox"/> Hail and thunderstorm |                                     |

Date the disaster happened? (month and year) .....

### Duration of closure

#### Was the business closed

- |   |  |
|---|--|
| <input type="checkbox"/> Did not close      | <input type="checkbox"/> 8 – 21 days       |
| <input type="checkbox"/> One hour to 3 days | <input type="checkbox"/> 22 days or longer |
| <input type="checkbox"/> 4-7 days           |  |

Reason for closure  Yes  No

#### What were the reasons for closure?

- |  |  |
|--|--|
| <input type="checkbox"/> Electricity failure | <input type="checkbox"/> Road damage         |
| <input type="checkbox"/> Water loss          | <input type="checkbox"/> Suppliers           |
| <input type="checkbox"/> Sewerage loss       | <input type="checkbox"/> Waste treatment     |
| <input type="checkbox"/> Gas supply lost     | <input type="checkbox"/> Council requirement |
| <input type="checkbox"/> Building damage     | <input type="checkbox"/> Insurance delay     |

Has the business changed in anyway after the hazard and how?

.....  
.....  
.....

**Financial status** (circle one each line)

Before the hazard	In trouble	Not doing well	Good	Excellent
During the hazard	In trouble	Not doing well	Good	Excellent
One month after the event	In trouble	Not doing well	Good	Excellent
6 months after the event	In trouble	Not doing well	Good	Excellent
12 months after the event	In trouble	Not doing well	Good	Excellent
Today	In trouble	Not doing well	Good	Excellent

**General information about your strategies to protect your business**

**Prevention/Mitigation**

Insurance for business	<input type="checkbox"/> Yes	<input type="checkbox"/> No
Emergency plans	<input type="checkbox"/> Yes	<input type="checkbox"/> No
Business plans with emergency strategies	<input type="checkbox"/> Yes	<input type="checkbox"/> No
Business continuity planning	<input type="checkbox"/> Yes	<input type="checkbox"/> No
Flood, fire plans	<input type="checkbox"/> Yes	<input type="checkbox"/> No
Local government plans in place	<input type="checkbox"/> Yes	<input type="checkbox"/> No
Measures to improve the premises against hazards	<input type="checkbox"/> Yes	<input type="checkbox"/> No
Do a risk assessment	<input type="checkbox"/> Yes	<input type="checkbox"/> No
Other	.....	

**Preparedness**

Generator on the property	<input type="checkbox"/> Yes	<input type="checkbox"/> No
Training for staff	<input type="checkbox"/> Yes	<input type="checkbox"/> No
Team meetings for emergency - disaster	<input type="checkbox"/> Yes	<input type="checkbox"/> No
First aid	<input type="checkbox"/> Yes	<input type="checkbox"/> No
Emergency kit with supplies	<input type="checkbox"/> Yes	<input type="checkbox"/> No
Back-up for files and computers	<input type="checkbox"/> Yes	<input type="checkbox"/> No
Training for employees	<input type="checkbox"/> Yes	<input type="checkbox"/> No
Recovery	<input type="checkbox"/> Yes	<input type="checkbox"/> No

**Disaster assistance**

**Did you...**

Receive post disaster assistance (one-off payment)	<input type="checkbox"/> Yes	<input type="checkbox"/> No
Apply for a loan	<input type="checkbox"/> Yes	<input type="checkbox"/> No
Receive a loan	<input type="checkbox"/> Yes	<input type="checkbox"/> No
Use own money to recover	<input type="checkbox"/> Yes	<input type="checkbox"/> No
Personal saving	<input type="checkbox"/> Yes	<input type="checkbox"/> No
Business saving	<input type="checkbox"/> Yes	<input type="checkbox"/> No



**Impact on business**

**Did the hazard affect**

- |   |                              |                             |
|---|------------------------------|-----------------------------|
| Customer numbers                        | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
| Suppliers of your products              | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
| People living in the neighbourhood      | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
| Businesses you rely on                  | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
| Did the hazard affect your family home? | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
| Other assets                            | <input type="checkbox"/> Yes | <input type="checkbox"/> No |

**You are welcome to add any comments below**

**ATTACHMENT 1**

**About your business**

Business name: ..... CODE .....

Business interview date: ..... CODE .....

**About you/business owner**

Gender

**Qualifications**

- Secondary schooling
- Vocational certificate
- Vocational Diploma
- Bachelor degree
- Post graduate qualifications

**Work experience**

- Worked before in same/different sector
- Management experience
- Previous work experience in the industry of your business
- Years .....

**Age of business**

When did the business start? .....

Is this business the same business you have now? .....

**What was the reason you decided to become self-employed?**

- Autonomy
- Family commitments
- Need for fulfillment
- Alternative to unemployment
- Income and profit
- Other .....

Is this business your sole income?  Yes  No

Do you have multiple income streams?  Yes  No

**Business type**

- Sole trader -- Self -employed
- Partnership
- Company
- Contractor
- Family business
- Other .....

**Employee numbers**

Size of the organisation  0  1-4  5-19

**Competitors**

How many competitors do you have .....

**Suppliers**

How many suppliers do you have .....

**Customers**

What is your customer base Local / Regional / State / Overseas