

**Vulnerability and capacities of international students in the face of disasters in Auckland,
New Zealand: A qualitative descriptive study**

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Abstract

Background: Voluntary cross-national migration is a phenomenon worldwide, with an increased presence of international students (i.e., short-term migrants) residing and studying in host countries for limited periods of time. Despite New Zealand's geographical isolation, it has also experienced an increase in international students, with Auckland being the region where international students are primarily located. Along with the increased movements of migrants, an awareness of migrants' specific vulnerability and capacities in face of disasters has arisen. Migrants residing in host countries are at risk in the event of a disaster because their vulnerability including language barriers, weak social ties, and socio-economic inequities can become amplified, leading to migrants' being disproportionately affected by disasters. Nevertheless, migrants also possess capacities that should be leveraged in the event of a disaster. Even though migrants' vulnerability and capacities have been documented, knowledge of short-term migrants' vulnerability and capacities in the face of disasters is still limited. The purpose of this research is to add to the existing limited research in this field with a specific focus on describing and exploring the vulnerability and capacities of international students in the event of a disaster.

Methods: To address the purpose of the research, a qualitative descriptive study informed by an interpretive paradigm was conducted. Semi-structured interviews with ten international students and four key informants were conducted in Auckland to collect data. Interviews were audio recorded and transcribed verbatim. The collected data were thematically analysed, with preliminary findings being checked by participants.

Results: Four major themes were generated: "daily challenges", "well-being", "seeking information and support" and "disaster (un)awareness", with 15 supporting sub-themes. Findings showed that international students experienced challenges related to language barriers, adjusting to living in a host country and socialising, though it was clear that students proactively sought to overcome these adversities. International students were aware of balancing academic and social life, and how this supported a sense of well-being, though challenges of belonging were also experienced, and seen by key informants to increase international students experienced adversity in adjusting to living in the host country. International students showed a diverse use of media and awareness of supporting services, while key informants emphasised the need for international students themselves to contribute to solving challenges. International students expressed a diverse perception of disasters, though Auckland and New Zealand were predominantly viewed as organised and safe places to live,

which influenced international students' assumptions about the government's and tertiary institutions' abilities to provide adequate support in the event of a disaster.

Conclusions: This study contributes to the understanding of short-term migrants' vulnerability and capacities in the event of disasters. Key implications for policy and practice are the need for governments and tertiary education institutions to increase their focus and include short-term migrants in disaster risk reduction planning, while strengthening international students' awareness of and accessibility to information about local hazards, preparedness, and existing disaster and emergency policies and practices.

Keywords: *vulnerability, capacity, disaster risk reduction, international students, migration, Auckland, New Zealand, qualitative*

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Attestation of Authorship

"I hereby declare that this submission is my own work and that, to the best of my knowledge and belief, it contains no material previously published or written by another person (except where explicitly defined in the acknowledgments), nor material which to a substantial extent has been submitted for the award of any other degree or diploma of a university or other institution of higher learning."

A handwritten signature in blue ink, appearing to read 'Christian Thorup-Binger', written over a horizontal line.

Signed:

Date: 18.06.2018

Christian Thorup-Binger

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Ethics approval for this study was granted by the Auckland University of Technology Ethics Committee (AUTEK) on December 5, 2017; approval number 17/390.

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Abbreviations

AC	Auckland Council
AEM	Auckland Council Emergency Management
AUT	Auckland University of Technology
DRR	Disaster risk reduction
EC	Education Counts
IASC	Inter-Agency Standing Committee
IPCC	International Panel for Climate Change
MCDEM	Ministry of Civil Defence and Emergency Management
MoE	Ministry of Education
MBIE	Ministry of Business, Innovation and Employment
OECD	Organisation for Economic Co-operation and Development
SNZ	Statistics New Zealand
UN	United Nations
UNISDR	United Nations International Strategy for Disaster Reduction
UNPF	United Nations Population Fund

Chapter One: Introduction

1.1 Problem context

International migration is an increasing global phenomenon as people chose to move to or settle in places other than their country of birth (International Organization for Migration [IOM], n.d.; United Nations Department of Economic and Social Affairs, n.d.). New Zealand has experienced an increase in migration in recent years, despite being geographically isolated. The population influx has contributed to both the public and private economic spheres (Statistics New Zealand [SNZ], 2017). One field experiencing this increase in migrants is the educational sector (SNZ, 2017), with tertiary education institutions in New Zealand now consisting of 15% international students (Education Counts [EC], 2017). This proportion is expected to increase in the coming years (EC, 2017). As a result, universities are branding themselves in different ways to attract international students; for example, Auckland University of Technology's (AUT) slogan "A university for the changing world" (AUT, n.d.a, p. 4) and its newly established Indonesian Research Centre (AUT, 2017b). These actions emphasise the notion that the world is a "global village" (Schwarz, 2001, p. 533), and that migration, with all its contributions, is a vital aspect of a vibrant city, which is the case for Auckland.

When describing and defining migration, it is important to specify exactly what is meant by the term, as it is used differently depending on the context (Donner & Rodríguez, 2008; Levitt, DeWind, & Vertovec, 2003; Renaud, Dun, Warner, & Bogardi, 2011; World Health Organization, 2003). Migrants are a diverse group defined not only by race, culture, and place of birth but also by their reasons for migrating and the time spent in the host country. Two types of migration exist; voluntary and involuntary, often defined by the reason for migration, which may be a search for improved livelihood (opportunity driven), or out of necessity (fear for personal safety). While categorising migrants according to their reason for migration may make it easier to distinguish between different groups, it has been argued that the likely root causes for voluntary migration are often a result of inadequate living conditions in migrants' home countries, making migration less voluntary and opportunity driven, and more necessity-based (Castles, 2004; Gieling, Thijis, & Verkuyten, 2011; IOM, 2017; Ogbu, 1993; United Nations Population Fund [UNPF], 2015).

Time of stay in a host country is another defining character when it comes to distinguishing between migrants, who can be classified as either short- or long-term migrants.

The Organisation for Economic Co-operation and Development (OECD) and the United Nations (UN) define short-term migrants as those persons residing in a host country for a period of 3 to 12 months (OECD, 2003; UNdata, n.d.). However, this definition is somewhat rigid as it does not consider migrant populations, such as international students, who may stay longer than 12 months but less than 2 years (the time it normally takes to finish post-graduate studies) as short-term. A broader definition of short-term migrants that encompasses international students is therefore used in this study and will be further elaborated upon in Chapters Two and Three.

Along with the increase in global voluntary migration, disasters have also become more frequent and disruptive (Ferris & Petz, 2012; Oliver-Smith, 2004; Perry, 2007), and this has intensified global, national, and local attention towards preparing for and addressing the adverse consequences resulting from disasters (Auckland Emergency Management [AEM], 2016; Ministry of Civil Defence and Emergency Management [MCDEM], 2017; Stocktake, 2017; United Nations International Strategy for Disaster Reduction [UNISDR], 2015). Often, sub-groups of a population, such as migrants, are not proactively included in efforts to update the strategies and plans intended to counter the potential consequences of a disaster. The lack of inclusiveness is unfortunate as migrants historically, like other vulnerable groups, experience disproportionate adverse impacts in the event of disasters (Tompkins, Hurlston, & Poortinga, 2009; Wang, Amati, & Thomalla 2012), even though they may display inherent capacities (Brown, 2009; Montgomery & McDowell, 2009; Russell, Rosenthal, & Thomson, 2010). It is thus important to review and update existing practices and strategies in addressing the occurrence and consequences of disasters, considering the value these strategies and practices have for protecting the general population while also working towards increasing their relevance for disadvantaged groups such as migrants.

Migrants are predominantly perceived as a vulnerable and disadvantaged group in the event of disasters because of language barriers, differences in culture and risk perception, and lack of knowledge about local hazards, which may challenge existing local strategies and practices for disaster risk reduction (DRR) (Aldrich & Meyer, 2014; Donner & Rodríguez, 2008; Guadagno, 2017; Nepal, Banerjee, Perry, & Scott, 2012; Tompkins et al., 2009; Wang et al., 2012). Some of the underlying proxies to understand the vulnerability of an individual or group are the presence of inequity or being disadvantaged, which may involve language barriers (Montz, Allen, & Monitz, 2011; Nepal et al., 2012; Rashid & Gregory, 2014), low socioeconomic status (Braveman, Egerter, & Williams, 2011) and/or lack of supportive mechanisms and local knowledge (Aldrich & Meyer, 2014; Murphy, 2007; Rashid & Gregory, 2014). These diverse

factors contribute to and influence the presence of vulnerability in individuals and communities and suggest that being vulnerable is not a static condition, but dynamic and highly context-specific (Morrow, 1999; Wisner & Fordham, 2014).

The vulnerability of migrants in general also relates to short-term migrants (e.g., international students), where vulnerability in relation to disasters may be further accentuated by the short time spent in the host country. Short-term migrants vulnerability may include low socioeconomic status (Braveman et al., 2011; Gares & Montz, 2014; Montz et al., 2011), language barriers (Gares & Montz, 2014; Montz et al., 2011; Nepal et al., 2012; Rashid & Gregory, 2014), reduced horizontal social support, with minimal involvement in local social groups (Aldrich & Meyer, 2014; Morrow, 1999; Rashid & Gregory, 2014), and lack of knowledge about how the host nation's bureaucracy functions (Aldrich & Meyer, 2014; Morrow, 1999; Murphy, 2007; Nepal et al., 2012). However, migrant's capacities, like their vulnerability, can also be understood through similar proxies, such as having a strong social support network (Aldrich & Meyer, 2014), prior disaster experience (Gowan, Kirk, & Sloan, 2014) or an ability to be proactive in adverse circumstances (Aldrich & Meyer, 2014; Murphy, 2007). Migrants display capacities resulting from their social, historical, and cultural backgrounds combined with their ability to cope and adjust to a new environment (Marlowe, 2015). In some cases, what has been defined as a vulnerability can also be a capacity for individual migrants, further emphasising that these concepts are dynamic and context-specific (Murphy, 2007; Sonn & Fisher, 1998; Wisner & Fordham, 2014). Recent additions to the academic literature have further elaborated on the importance of empowering and including migrants in DRR, stressing the need to understand their specific vulnerability and capacities (Guadagno, 2017; Perchinig, 2016).

Specifically, for international students, factors such as strained psychosocial health and mental well-being (Inter-Agency Standing Committee [IASC], 2007), staying and studying in a host country for a defined period of time (Mori, 2000; Smith et al., 2007), and potentially being ineligible for short- and long-term emergency assistance provided by government bodies (Kapucu & Khosa, 2013; Watson, Loffredo, & McKee, 2011), may further contribute to their potential vulnerability. Even though international students experience challenges in adjusting to the social, academic, and cultural aspects of their host country (Mori, 2000; Smith et al., 2007), they also display capacities (Brown, 2009; Montgomery & McDowell, 2009; Russell et al., 2010), potentially enabling them to cope and adjust more easily in adverse circumstances.

1.2 Study rationale

Studies of the vulnerability and capacities of migrants in the face of a disaster have been well documented. However, in the current literature, limited research has been focused on short-term migrants, such as international students, and their specific vulnerability and capacities in the face of a disaster. Often international students are only mentioned briefly in disaster-related literature (Beaven et al., 2014; Kapucu & Khosa, 2013; Watson et al., 2011), indicating that there is a need to explore and understand this specific migrant group's vulnerability and capacities in the face of a disaster when residing in a host country. An increased understanding of migrant-inclusive DRR is important, to clarify how short-term migrants' vulnerability and capacities can be supported and leveraged in the face of disasters. The aim of this study is to address the present gap in disaster research with regard to international students as short-term migrants, by bridging topics of vulnerability, capacities, migration, and disasters. The findings of this research may inform existing DRR practices and processes, thus making them more relevant and valuable for short-term migrants.

1.3 Research question and objectives

The research question that this study sought to address is: "What are the vulnerability and capacities of international students living in Auckland, New Zealand, in the face of disasters?".

To address this question, the following four objectives guided the research:

- a. To understand international students' views and knowledge of hazards and risks while studying and living in Auckland, New Zealand.
- b. To explore the challenges faced by international students' and their capacities while studying and living in Auckland, New Zealand.
- c. To investigate how representatives from government organisations and tertiary education institutions perceive international students' vulnerability and capacities in the face of disasters.
- d. To identify opportunities for improvements in existing disaster risk reduction policy and practice to better address the vulnerability and capacities of international students.

1.4 Dissertation structure

The dissertation consists of six chapters.

Chapter One “Introduction” introduces the problem context, the research question, and objectives, while providing the overall rationale for conducting this research project.

Chapter Two “Literature review” defines key terms used in the study and reviews existing literature about key concepts including migrants, vulnerability, capacities, and disaster risk reduction. It also reviews current global, national, and local policy documents and how these documents relate to short-term migrants (i.e., international students) and disasters.

Chapter Three “Methods” presents the qualitative descriptive research design, and the methods for data collection and analysis, describing how these were used to address the research question and objectives.

Chapter Four “Findings” provides the results of the collected analysed data from interviews with ten international students and four key informants.

Chapter Five “Discussion” discusses the study’s findings in relation to current academic and grey literature, highlighting implications for practice and elaborating on the strengths and limitations of the study.

Chapter Six “Conclusion” concludes the dissertation by summarising key findings and potential areas for future research.

Chapter Two: Literature review

2.1 Introduction

This chapter defines key terms, covers the literature that has been reviewed for this study, and analyse existing global and national policy documents, with the purpose of reviewing literature relevant to the vulnerability and capacities of migrants in the face of disasters and DRR, to contextualise the study in the field of disaster research. Throughout the chapter, the concepts and current literature are critiqued, to show the complexities present. The databases used for the literature review were Google Scholar®, ScienceDirect®, Scopus®, and EBSCOhost®. In addition, organisational documents (grey literature) were accessed from international, national, and local sources. Search terms used in the literature review and for key terms focused on each concept individually with the use of truncations, and where relevant, in different forms of combinations, such as disaste*, capacit*, migrat*, migrants and vulnerabili*, disasters and international student* and disaster risk reduction. Specific inclusion criteria to limit the field of the literature review were not used, other than that the reviewed literature needed to be in English. The structure of the literature review started broad, looking first at seminal publications from authors in the disaster literature relevant to the key terms, thus forming an overview of the concepts. The broad approach was then narrowed to focus on how concepts related to one another, laying the foundation for this study.

2.2 Key definitions

Definitions of key terms used in this study relate to the disaster field in general and the scope of this study specifically. Defining the concepts used in this research is important as they are often contested and debated in the current academic literature, and by practitioners.

2.2.1 Migrants

Defining a migrant is a constantly changing endeavour (Castles, 2004; Gieling et al., 2011; IOM, 2017), with different sub-categories such as short- or long-term migrants and forced or voluntary migrants. An underlying theme in migration is a change in residence from an individual's country of birth to a host country, for a certain period of time (usually longer than 3 months), which may be either voluntary or forced (IOM, 2017; UNPF, 2015). A broad definition by the UN states that an "international migrant is someone who changes his or her country of usual residence, irrespective of the reason for migration or legal status" (UN, n.d.).

The field of migration studies has considerable width and depth and spans diverse areas of study, ranging from sociology, economics, and politics, to topics related to climate change, disasters, and humanitarian aid (Bourbeau, 2015; Guadagno, 2017; McLeman & Hunter, 2010; Renaud et al., 2011). The diversity present in migration research draws attention to and emphasises the complexities, opportunities, and challenges that follow any kind of migrant movement (Julca, 2011; Renaud et al., 2011). An awareness of the complexities in migration studies and the dynamic definitions of what a migrant is (Castles, 2004; Gieling et al., 2011; IOM, 2017; Renaud et al., 2011), needs to be acknowledged, and is stressed by Levitt et al., (2003), as important when understanding migrants' capacities and vulnerability.

Complicating the already complex field of migration studies is the notion of being a migrant in itself, as this is often used as a generic term, covering various categories of migrants and reasons for migrating, whether voluntary or involuntary and whether for short or long periods of time (UN, n.d.; UNPF, 2015). Arguments in favour of and against different kinds of defining characteristics for voluntary and involuntary movements are continually discussed, with voluntary migration typically viewed as driven by economics, educational aims and opportunities, while involuntary migration relates to being forced away from one's home because of war, conflict, or oppression (Castles, 2004; Gieling et al., 2011; IOM, 2017; Ogbu, 1993; Renaud et al., 2011; UNPF, 2015). The concept of voluntary migration nevertheless continues to be debated and challenged (Castles, 2004; Gieling et al., 2011; Julca, 2011; IOM, 2017; Renaud et al., 2011), because of the diverse triggers that may influence it. Root causes for 'voluntary' migration, as have been argued in the literature (Gieling et al., 2011; Julca, 2011; Renaud et al., 2011; Sabates-Wheeler & Macauslan, 2007), may not necessarily result from the use of active force, but can occur more through subtle societal mechanisms like the presence of inequity, land development and the search for opportunities and a dignified life, which a migrant's home country might not be able to provide (Bettini & Gioli, 2016; IOM, 2017; UNPF, 2015).

In this study, as the focus is on international students, migration is viewed as voluntarily leaving one's country of birth to seek economic or educational opportunities in a host country (UNPF, 2015; SNZ, n.d.). This study specifically focuses on international students (i.e., short-term migrants), studying in another country for a short period of time, typically between 3 and 24 months.

2.2.2 Risk and Hazards

A hazard is “a potentially damaging physical event, phenomenon or human activity that may cause the loss of life ... social and economic disruption ... [and] can include latent conditions that may represent future threats” (UNISDR, 2007, p. 1). Hazards can, therefore, be perceived as being present in the social fabric of human life, and it is how hazards are influenced by humans (e.g., through city development or forestry) that determines whether hazards become the forerunners of a societal disaster or emergency (Gaillard, Liamzon, & Villanueva, 2007; Kelman, Gaillard, Lewis, & Mercer, 2016; McEntire, 2012). An example of a hazard, as argued by Gaillard et al., (2007), is the deforestation of hills in the Philippines, challenging the soils ability to soak up water, thus increasing the risk of landslides and flash floods. Another hazard could be the lack of specific lanes for bicycles, forcing cyclists to ride on the road next to cars, thus increasing the risk of accidents (Ministry of Transport, 2017). As exemplified, hazards are diverse and complex, and in connection with human influences, they have the potential to cause emergencies and disasters.

When focusing on hazards, a related concept is the notion of risk, which becomes relevant when understanding and clarifying how the likelihood of a hazard may result in harm. The term risk, like the other concepts being elaborated on and defined in this chapter, is perceived differently, depending on its usage (International Organization for Standardization, 2009; McEntire, 2012; Sjöberg, 2000; UNISDR, 2009). Risk is defined by the UN as “the combination of the probability of an event and its consequences” (UNISDR, 2009, p. 25) and risk is by this definition subjective as individuals’ may have vastly different perceptions of the risk (i.e., likelihood) of a hazard occurring (Sjöberg, 2000; Slovic, 1987). The connection and difference between risks and hazards are that risk is a variable that can be increased or decreased, whereas a hazard is a given in the co-existence of humans and the natural world. Examples of how development may increase the risk of harmful hazardous occurrences include building on low-lying land close to the shore, or building unreinforced houses in earthquake-prone areas, thus increasing the consequent risk of natural hazards (Bankoff, 2001; Elliott & Pais, 2006; McEntire, 2012).

2.2.3 Emergencies and Disasters

The terms disaster and emergency are often used interchangeably to describe similar occurrences, although they technically mean different things. An emergency can be understood as “a threatening condition that requires urgent action” (UNISDR, 2009, p. 13) while a disaster is defined as “a serious disruption of the functioning of a community or a society ... which exceeds

the ability of the affected community or society to cope using its own resources” (UNISDR, 2009, p. 9). Emergencies are therefore a broader term, encompassing the notion and description of a disaster, whereas a disaster specifically relates to cases where existing resources become overwhelmed, requiring external assistance to cope and sufficiently address the situation. The definitions used in this study to define an emergency and disaster align with those used by the UN.

A disaster, as in the above definition, can be understood as socially constructed, as existing literature in the field of disaster research and social science has emphasised (Donner & Rodríguez, 2008; Mercer, Kelman, Taranis, & Suchet-Pearson, 2010; Morrow, 1999), in the sense that a disaster may only occur because of the presence of pre-existing societal vulnerability (Donner & Rodríguez, 2008; Kelman et al., 2016; Oliver-Smith, 2004; Perry, 2007; Wisner, Blaikie, Cannon, & Davis, 2004). One example of how disasters only emphasise existing vulnerability, and through this cause harm and lived adversity, as indicated by McEntire (2005), became apparent during and following Hurricane Katrina in 2005, where many African Americans struggled to safely evacuate. A key factor in the struggles of African American communities’ ability to evacuate in a timely manner was their reliance on public transport in their daily lives, which meant that they did not have the possibility of more flexible evacuation routes (e.g., automobiles), that were available to other more affluent inhabitants of New Orleans (Elliott & Pais, 2006; McEntire, 2012).

2.2.4 Vulnerability

As early as the 1980s, Chambers (1989) noted a lack of a common definition of the concept of vulnerability. Since then, no definition of the term has been agreed upon (Cardona, 2004; Hilhorst & Bankoff, 2004; McEntire, 2012; UNISDR, 2009; Weichselgartner, 2001). As a result, the term vulnerability is defined by the field in which it is being used (Gaillard, 2010; McEntire, 2004; Smit & Wandel, 2006; Weichselgartner, 2001), which limits interdisciplinary sharing of knowledge and expertise. Vulnerability is often addressed through either a reactive or proactive discourse, where different aspects and triggers of vulnerability become emphasised or downplayed (Donner & Rodríguez, 2008; Gaillard, 2010; McEntire, 2005; Smit & Wandel, 2006; Wisner et al., 2004).

Vulnerability in this research, is defined in a similar fashion as in the Sendai Framework (UNISDR, 2015) and its predecessor the Hyogo Framework for Action (UNISDR, 2007), which state that vulnerability is “the conditions determined by physical, social, economic and

environmental factors or processes, which increase the susceptibility of a community to the impact of hazards” (UNISDR, 2007, p. 1). A further definition of vulnerability, which complements the one used for this study is by Wisner et al., (2004) stating that vulnerability is “the characteristics of a person or group and their situation that influence their capacity to anticipate, cope with, resist and recover from the impact of a natural hazard” (p. 11). Both definitions, used in a complementary fashion for this study, indicate how social aspects influence the presence of vulnerability, and therefore align with the research’s overall placement in the sphere of social sciences in disaster research. A social science view of vulnerability means that the term is dynamic, always being shaped and formed by a diversity of cultural, historical, political, and societal proxies (Donner & Rodríguez, 2008; Gaillard, 2010; Gaillard et al., 2007; Morrow, 1999; Smit & Wandel, 2006; Wisner & Fordham, 2014). However, one of the concerns in viewing vulnerability through a social science lens, as argued by McEntire (2005), is the possibility of “inadvertently [downplaying] personal responsibility for disaster prevention and management” (p. 212), due to a focus on societal complexities in the creation of vulnerability.

Even though different definitions of vulnerability exist, they all generally stem from three underlying perceptions of how nature and humans interact, resulting in widely different foci, with vulnerability being viewed as either structural (natural science), societal (social science) or a combination of both (Cardona, 2004; Donner & Rodríguez, 2008; McEntire, 2005; Usamah, Handmer, Mitchell, & Ahmed, 2014; Wisner, 2016; Wisner & Fordham, 2014). Because of the different avenues by which vulnerability can be understood and addressed, it is important not to disregard the input that each field contributes, when it comes to preparing for, mitigating against, or recovering from the consequences of disasters (Hilhorst, & Bankoff, 2004; Twigg, 2015; Weichselgartner & Obersteiner, 2002). Generalising vulnerability through a social science perception should therefore be avoided (McEntire, 2005), other than noting that a complexity of proxies can hint at what makes individuals and communities vulnerable (Gaillard et al., 2007; Kelman et al., 2016; Wisner et al., 2004).

In the social science understanding of vulnerability, it is broadly accepted that the concept of vulnerability is influenced by the context (Gaillard, 2010; Kelman et al., 2016; Smit & Wandel, 2006; Weichselgartner, 2001). For instance, politics can increase or decrease a group’s vulnerability (Davis, 2004; Gaillard, 2010; Wisner, 2016; Wisner & Fordham, 2014). Addressing the presence of vulnerability on a long-term scale may often be outside the strategic ability of individuals and communities but this does not mean that they are completely powerless, as at a local level they can become involved in policy changes, and through the

design and implementation of local and practical changes, are able to reduce their societal vulnerability (Delica-Willison & Willison, 2004; Heijmans, 2004).

A number of authors (Heijmans, 2004; Mercer et al., 2010; Twigg, 2015) have further stressed the need for collaboration and participation across boundaries and between communities, local and national governmental bodies, to better understand the context and existing strengths within individuals and communities, if strategies to reduce the presence of vulnerability are to be of any practical value in the local context. Even though calls have been made to increase interdisciplinary collaboration and coordination, the existing literature has also emphasised the responsibility for communities themselves (McEntire, 2005; Pearce, 2003), on a long-term sustainable scale in coordination with local authorities, to maintain, implement and contribute to the development and adjustment of strategies and practices taken to address vulnerability at a local level (Heijmans, 2004; Twigg, 2015; Wisner & Fordham, 2014).

2.2.5 Capacity

Like vulnerability, the concept of capacities does not have an agreed upon definition (Gaillard, 2010; Usamah et al., 2014), and is easily misused for political or economic gain (Bankoff, 2001; Davis, 2004; Wisner et al., 2004). The concept of capacities is therefore often understood and used differently, depending on those who use it. Nevertheless, attempts have been made, and the one used to understand the notion of capacity in this study is by Wisner and Fordham (2014). The definition states that capacities are “a set of perceptions (awareness, attitudes), varieties of knowledge and skill, and (of critical importance) access to resources that facilitate people’s ability to anticipate, cope with, resist, and recover from hazard occurrences” (p. 858). Wisner and Fordham’s definition of capacity has made significant contributions, both theoretical and practical, to this area of disaster research.

Some authors have argued that the presence of capacities, including Wisner and Fordham’s definition, relates to the ability of ‘access’ (Davis, 2004; Pelling & High, 2005; Smit & Wandel, 2006), and the absence of poverty (Fothergill, Maestas, & Darlington, 1999; Hilhorst & Bankoff, 2004; McEntire, 2012). However, taking this view of capacities as being defined by ‘access’ and the absence of poverty could potentially minimise the acknowledgement of individuals’ and communities’ internal strengths, as shaped by their own experiences, which a sole focus on ‘access’ and poverty reduction does not fully appreciate (Bankoff, 2001). Even though arguments can be made against Wisner and Fordham’s definition of capacities, it is

used in this study as it encompasses the breadth, depth, and complexities related to building and understanding how capacities can be influenced in a changing and dynamic society.

It has further been argued that the concepts of capacity and vulnerability are closely linked (Heijmans, 2004; Oliver-Smith, 2004; Usamah et al., 2014). However, this connection should not be simplified to mean that capacities are the opposite of vulnerability, or that less vulnerability correlates to increased capacities, as emphasised by Gaillard (2010) and Wisner and Fordham (2014). A simple correlation between capacities and vulnerability does not fully show how these terms are being influenced, changed, and affected by complex factors in practice (Smit & Wandel, 2006). Acknowledging capacities in individuals does not exclude them from being vulnerable at the same time (Heijmans, 2004; Wisner & Fordham, 2014), and being vulnerable while having any kind of strengths cannot and should not solely be framed as capacities (Davis, 2004; Wisner, 2016). There is a need to appreciate that capacities, like vulnerability, is a complex dynamic term, continuously influenced by a diversity of factors and that a broad holistic societal approach is required when seeking to increase individuals' and communities' capacities.

2.2.6 Disaster risk reduction

Disaster risk reduction is a global strategy implemented to achieve an increased focus on the reduction and avoidance of the diverse socio-economic impacts and consequences of disasters (Mercer, 2010; Thomalla, Downing, Spanger-Siegfried, Han, & Rockström, 2006; UNISDR, 2015). The concept of DRR was consistently developed and fine-tuned during the last decades of the twentieth century and the early twenty-first century (Cardona, 2004; Mercer, 2010; Thomalla et al., 2006), culminating in the newly released Sendai Framework for Disaster Risk Reduction 2015-2030 (UNISDR, 2015) and its predecessor the Hyogo Framework for Action 2005-2015 (UNISDR, 2007).

The Sendai Framework and academic literature around the concept of DRR state the importance of community engagement, in combination with supportive governmental assistance, in decreasing the adverse influences of hazards (Mercer et al., 2010; Twigg, 2015; Wisner et al., 2004). However, DRR cannot be solely addressed on a national level, as it requires global, regional, transnational and local co-operation to achieve any long-lasting sustainable efforts (Alexander & Davis, 2012; Mercer et al., 2010; Perchinig, 2016; Twigg, 2015; UNISDR, 2015). Disaster risk reduction in this study will follow the definition laid out by Twigg

(2015), which states that DRR is the “development and application of policies, strategies, and practices to reduce vulnerability and disaster risks throughout society” (p. 6).

Sometimes used interchangeably with DRR is the notion of emergency planning and management, which has similar connotations of reducing risks and hazards (Alexander, 2005; Eyre, 2006; Pearce, 2003; Perry & Lindell, 2003), though predominantly with an historic emphasis on response and recovery for the latter terms (Palttala & Vos, 2012; Pearce, 2003; Perry & Lindell, 2003). It is important to be aware of these similarities in DRR and emergency planning, as organisations and individuals often use these terms interchangeably to describe the same things, typically with academia and international organisations preferring the term DRR, while lay-people and local organisations display a more practical understanding of emergency planning (Gaillard et al, 2007; Twigg, 2015; Weichselgartner & Obersteiner, 2002). It can be argued that the practical similarities between emergency planning and DRR outweigh any technical differences, as long as there is an agreed understanding of the terms use between parties.

Within the field of DRR, a broad range of stakeholders typically interact, including national governments, global humanitarian, and development agencies, until actions often become implemented by local communities and non-governmental organisations (Doocy, Gabriel, Collins, Robinson, & Stevenson, 2006; Heijmans, 2004; Twigg, 2015). The diversity in stakeholders is predominantly positive, however, in practice this diversity often provides challenges, which have been emphasised by several authors, and relate to differences in understanding and implementing DRR terminology, and the questionable measurable and actual value of DRR efforts for communities (Birkmann & von Teichman, 2010; Delica-Willison & Gaillard, 2012; Thomalla et al., 2006; Weichselgartner & Obersteiner, 2002). An example of the challenges in the diversity of stakeholders is the notion that affected communities typically have a holistic view of the issues they struggle with, and their contributing factors (Gaillard, 2008; Twigg, 2015; Weichselgartner & Obersteiner, 2002), while external organisations historically have taken a siloed approach to what affected communities’ needs are, without inquiring about the community’s views beforehand (Gaillard et al., 2007; Wisner, 2016). Despite the challenges present when implementing DRR efforts, local practical examples of DRR have become increasingly common and relate to the increased collaboration and integration of local knowledge between experts and lay-people in the development of preparation or mitigative efforts (Guadagno, 2017; Kenney & Phibbs, 2015). Another example of DRR is the use of participatory mapping, community engagement and decision making to visualise local hazards,

while increasing local governments' and communities' awareness of and ability to respond to and take pro-active measures to avoid adverse consequences of a natural hazard (Alexander & Davis, 2012; Cronin et al., 2004; Delica-Willison & Gaillard, 2012; Mercer et al., 2010; Twigg, 2015).

2.3 Migrants in the face of disasters

2.3.1 Vulnerable populations during disasters

Disadvantages experienced by groups within a society (e.g., language barriers, socio-economic inequities, and class differences) may be amplified during and following a disaster, as disasters in themselves are not the root-cause of adversity but emphasise and magnify the pre-existence of societal vulnerability in groups (Elliott & Pais, 2006; McEntire, 2005; Nepal et al., 2012; Perry, 2007). The presence of vulnerability in certain groups of a society following past disasters has emphasised the disproportionate struggles in accessing assistance, coping, receiving communications and the ability to safely evacuate, faced by children, the elderly, disabled, women, ethnic minorities, and migrants during and following a disaster (Donner & Rodríguez, 2008; Fordham, 2004; Morrow, 1999; Oliver-Smith, 2004; Wisner & Fordham 2014). During and following Hurricane Katrina in 2005 and the Boxing Day Tsunami in 2004, the plight of ethnic minorities, children, elderly and migrants became obvious (Eisenman, Cordasco, Asch, Golden, & Glik, 2007; Elliott & Pais, 2006; Ganesan, 2006; McEntire, 2012; Watson et al., 2011). In reviewing the response to and recovery process following Hurricane Katrina, Eisenman et al., (2007) and McEntire (2012) noted socio-economic barriers, ethnic insensitivity, and language barriers as some of the challenges experienced by ethnic minorities and migrants, while Watson et al., (2011) hinted at amplified adversity experienced by international students in their ability to cope and adjust because of weak social ties and their inability to receive federal or state assistance. Even though Watson et al., (2011) indicated that international students experienced increased challenges in coping and adjusting following Hurricane Katrina in 2005, Beaven et al., (2014) only found minor differences in domestic and international students' experienced psychosocial adversity during and following the Canterbury Earthquakes in 2010-2011. The inconclusive findings related to the potential of experienced adversity for international students in the face of disasters by Beaven et al., (2014) and Watson et al., (2011) are interesting to note as it only highlights the need to further investigate the presence of vulnerability in this sub-group of migrants (i.e., international students). Following the Boxing Day Tsunami in 2004, Ganesan (2006) discussed concerns related to the effect of psychosocial responses and recovery of impacted communities, and how insensitivity to cultural contexts and

lack of coordinated response efforts may have affected individuals' and communities' ability to effectively recover, cope and adjust. Ethnic insensitivity, uncoordinated psychosocial recovery, socio-economic and language barriers, as exemplified in the studies of Hurricane Katrina in 2005 and the Boxing Day Tsunami in 2004 are four root causes documented to amplify the disproportionate struggles experienced by migrant communities, emphasising that migrants are a vulnerable population in a society, and need to be considered as such in the event of a disaster.

Contributions to the academic literature have also elaborated on why and how certain groups of a society are vulnerable (Eisenman, 2007; Morrow, 1999; Wisner et al., 2004), though this classification of group vulnerability has also been challenged as unbalanced, thereby emphasising vulnerability where none may exist and neglect capacities that these groups possess (Hilhorst & Bankoff, 2004; McEntire, 2005). A sole focus on vulnerability and the implicit victimisation of disadvantaged groups also increases these groups' dependence on external support and assistance while undermining their strengths and capacities, such as resources that can be leveraged to improve the outcomes of a disaster (Bankoff, 2001; Delica-Willison & Willison, 2004; McEntire, 2005). Nevertheless, not acknowledging vulnerability also presents a challenge, which means that a balanced approach towards addressing vulnerability while supporting capacities is needed and becomes even more relevant for the specific purpose of this study, with its focus on international students as short-term migrants, and how knowledge about this group in the event of disasters has yet to be well established.

2.3.2 Migrants' vulnerability in disasters

When disasters occur, and preferably before, it is important that responders to disasters and emergencies (e.g., government and other stakeholders), are aware of the vulnerability present in a society. An awareness of vulnerability is needed, because vulnerable sub-groups of a population may challenge existing DRR efforts (Cardona, 2004; Guadagno, 2017; Marlowe, 2015), and can even contribute to the amplification of consequences, because of language barriers, cultural beliefs, or differences in risk perception (McLeman & Hunter, 2010; Montz et al., 2011; Nepal et al., 2012; Tompkins et al., 2009; Wang et al., 2012).

New migrants in a host country, like international students, are predominantly viewed as being vulnerable (Donner & Rodríguez, 2008; Gares & Montz, 2014; Morrow, 1999; Sabates-Wheeler & Macauslan, 2007), as they may not yet have any existing knowledge about the local risks, hazards, or DRR practices (Guadagno, 2015; Perchinig, 2016). Contributing to migrants'

vulnerability are the diverse risk perceptions shaped by cultural, societal, traditional, and historical influences in their native country (Donner & Rodríguez, 2008; Gaillard, 2008; Weichselgartner, 2001). On top of these specific vulnerabilities, other socio-economic factors are also relevant, related to economy, social coherence, “lack of access” (Cardona, 2004, p. 43) and mental well-being, all of which influence the potential for vulnerability (Aldrich & Meyer, 2014; Braveman et al., 2011; Mallinckrodt & Leong, 1992; Murphy, 2007; Pelling & High, 2005; Sabates-Wheeler & Macauslan, 2007; Wisner et al., 2004).

Examples of migrants’ vulnerability in general and to disasters specifically relates to this group having experienced inequity when applying for assistance and support (Montz et al., 2011; Sabates-Wheeler & Macauslan, 2007; Wang et al., 2012), with another area being the lack of migrants’ individual readiness and preparedness (Tompkins et al., 2009; Wang et al., 2012), possibly reflecting some migrants’ risk perceptions that are influenced by optimism bias, and fatalism (Sjöberg, 2000; Slovic, 1987). Experiences in the Cayman Islands, Shanghai, and the US have highlighted migrants’ vulnerability and shown their unpreparedness, though these were not solely defined by migrants’ own conscious or unconscious inactions. External factors such as living in hazardous areas (i.e., cheap and affordable), experiencing language barriers and the inaccessibility of resources also presented challenges (Donner & Rodríguez, 2008; Montz et al., 2011; Nepal et al., 2012; Tompkins et al., 2009; Wang et al., 2012).

Another example of migrants’ vulnerability in disasters concerns the daily presence of language barriers, and how this can be amplified during and after disasters (Nepal et al., 2012; Wang et al., 2012). Lessons learned from the Christchurch Earthquake in 2010-2011 emphasised the struggles migrants faced during and following this disaster, as language challenged the timely provision of support and increased miscommunication (Marlowe, 2015). Research by Gares and Montz (2014) has further indicated language as a barrier for migrants, but also emphasised a lack of social networks as a factor when describing migrants’ vulnerability. An example of migrants’ vulnerability that may also relate to international students specifically was the experienced challenge of receiving financial support following Hurricane Katrina in 2005 as noted by Watson et al., (2011). A further vulnerability that could be amplified is the lack of knowledge about supporting mechanisms and how the host country’s bureaucracy functions (Aldrich & Meyer, 2014; Rashid & Gregory, 2014) because international students spend a limited time in the host country.

2.3.3 Migrants' capacities in disasters

In disaster research, migrants' capacities have increasingly become a topic of interest (Guadagno, 2017; McLeman & Hunter, 2010; Perchinig, 2016), redefining how humanitarian aid and development studies are portrayed and thought about (Fordham, 2004; Weichselgartner & Obersteiner, 2002). This shift has been described as a "needs-based approach" (Perchinig, 2016, p. 4), focusing on empowering individuals' and communities' capacities for self-help and independence, rather than the historical idea of individuals' and communities' dependence on external assistance when disasters strike (Fordham, 2004; Marlowe, 2015; Mooney et al., 2011; Perchinig, 2016). The increased focus on migrants' capacities and their inclusiveness in DRR are positive because an appreciation, understanding, and support of migrants' capacities will increase and acknowledge migrants' holistic inclusion in a society through local participation in DRR practices (Guadagno, 2017; Perchinig, 2016). However, within academia and amongst practitioners, there is still an underappreciation of short-term migrants' and international students' specific vulnerability and capacities. The sparse knowledge present about these groups in the existing disaster literature tends to focus on their vulnerability, instead of acknowledging and supporting the presence of their capacities as well (Donner & Rodríguez, 2008; Mallinckrodt & Leong, 1992; Mori, 2000; Tompkins et al., 2009; Wang et al., 2012; Watson et al., 2011).

The existing literature has had a strong focus on the mental health challenges experienced by international students' when studying abroad (Mori, 2000; Smith et al., 2007), but recent additions to the field of education by Russell et al., (2010) and Montgomery and McDowell (2009), have argued against this unbalanced view, by pointing out international students' diverse resources and abilities to cope and adjust when studying and living in host countries. For international students specifically, and migrants in general, there is a need to acknowledge the presence of their capacities in local DRR strategies and practices, as including migrants' contributions throughout the development and implementation of local and national DRR efforts should not be underestimated. A wealth of capacities exists within communities, and migrant communities are no exception, presenting opportunities that can be leveraged when preparing for, responding to, and recovering from a disaster (Coles & Buckle, 2004; Dionisio, 2016; Doocy et al., 2006). The challenge for communities themselves, and for local, national, and global organisations is to support these strengths through the identification and articulation of these capacities, as they may often be "invisible to outsiders" as argued by Twigg (2015, p. 150).

An example of migrants' capacities in New Zealand was apparent following the Canterbury Earthquake in 2010-2011, where the internal social support system of recent immigrant communities and their previous experiences of earthquakes helped these migrant communities cope and adjust without depending solely on external resources and assistance (Marlowe, 2015). The strength of migrants' internal social support networks was also a crucial factor in Vietnamese communities' ability to recover, cope and resettle in New Orleans following Hurricane Katrina in 2005, as indicated by Vu, VanLandingham, Do, and Bankston III (2009). The willingness and ability of migrants to contribute to and be included in disaster preparedness and risk communication have further been acknowledged and become an increasing part in Australian and Japanese planning, response, and recovery in the event of a disaster. This has been epitomised during the 2011 Brisbane flood in Australia and the 2011 Tōhoku earthquake in Japan, with migrants bridging language barriers, acting as trusted sources of information and countering misinterpretations of risk communication (Duncan, 2013; Shepherd & van Vuuren, 2014). The presence of migrants in a host country can also be viewed as families' way to diversify risk, which Le Dé, Gaillard, and Friesen (2013) and Le Dé, Gaillard, Friesen, and Smith (2015) have extensively elaborated upon, enabling migrants to provide financial assistance in the form of remittances to disaster affected areas in their home countries.

Another capacity migrant communities' display in disaster preparedness and mitigative efforts are the ability to use local knowledge through participatory mapping of a community's hazards (Cronin et al., 2004; Delica-Willison & Gaillard, 2012; Twigg, Christie, Haworth, Osuteye, & Skarlatidou, 2017). Leveraging local knowledge in combination with scientific resources can help raise awareness, while acknowledging the credible existence of local hazards and risks, thus letting the voices of migrant communities be heard by policymakers at the government level (Coles & Buckle, 2004; Kenney and Phibbs, 2015; Pearce, 2003; Twigg et al., 2017; UNISDR, 2008; Wisner, 2004). Migrants' capacities are strengths that may make them more able to cope and adjust than the host population present in a given country, and it is therefore important to encourage their inclusion in local and national DRR practices (Brown, 2009; Marlowe, 2015; McLeman & Hunter, 2010; Montgomery & McDowell, 2009).

2.3.4 Migrants and disaster risk reduction

The dynamic movement of people, in terms of migration, and their inclusion in DRR has increasingly become recognised (Guadagno, 2017; International Peace Institute [IPI], 2013; Perchinig, 2016), with examples of implemented local practices for DRR in migrant communities focusing on dialogue, partnership, ownership and local activation of these communities, in

efforts to mitigate, prepare for and recover following a disaster (Guadagno, 2017; Pearce, 2003; Twigg, 2015). The International Panel for Climate Change (IPCC) and IOM are two organisations that have been at the forefront of calls for migrant-inclusive DRR, resulting from increased climate change-related migration (Guadagno, 2015; IPCC, 2014). It can be argued that climate change, DRR, and migration are intricately linked, though debate continues around the technical differences in efforts to address climate change and DRR (Birkmann & von Teichman, 2010; Mercer, 2010), with Kelman et al., (2016) arguing that countering or minimising the effects of climate change should be an integral part of DRR. The increase in migration has also been stated as a security concern (Bourbeau, 2015; IPCC, 2014) and will continue to be so if potential root causes for migration (e.g., climate change and loss of livelihoods) are not sufficiently addressed through migrant-inclusive DRR efforts in host and home countries (Guadagno, 2015; Guadagno, 2016; Guadagno, 2017; IPCC, 2014).

Previous efforts to include migrants in local DRR efforts have focused on supporting social networks in migrant communities and providing resources for community-based aid organisations. In Latin American and India for example, avenues have been taken to strengthen the ease of access and contribution of local knowledge when preparing for, mitigating against, or recovering from disasters (Twigg, 2015). Other examples of migrant-inclusive DRR have occurred in Thailand and Norway, where diversity in communities is not viewed as a vulnerability but as a capacity to create a shared communal identity, encouraging flexibility and appreciation of diversity in disaster and emergency management, ensuring that no group is neglected (Guadagno, 2017). Even though the highlighted examples of local DRR and the inclusion of migrants in these efforts show a presence and awareness, it is also clear that there is still a knowledge gap, as it is only recently that migrants and their place in DRR have become explicitly acknowledged (Guadagno, 2017, IPI, 2013; Twigg, 2015).

Migrant-inclusive DRR does, however, also pose challenges because of the diversity in migrant communities, in terms of prioritising, understanding, and mapping the opportunities and challenges present by migrants' different backgrounds (Guadagno, 2017). One challenge when seeking to incorporate migrants in DRR practices lies in the diverse perceptions, habits, and cultural backgrounds migrants bring with them to a host country, and how this may contribute to or unknowingly hinder their ability to cope in adversity (Brown, 2009; Montgomery & McDowell, 2009; Russell et al., 2010; Tompkins et al., 2009; Wang et al., 2012). Language barriers and strong internal social support in migrant communities may also present challenges for comprehensive and inclusive local DRR practices as well, if migrants do not perceive a need to

be included, because they may not view themselves as vulnerable (Guadagno, 2017; Marlowe, 2015; Twigg, 2015). Twigg (2015) has also noted that capacities and resources present in migrant communities may not be deemed assets to DRR practices by outsiders (i.e., government and non-local stakeholders) because of different perceptions and understandings of hazards, vulnerability, and capacities. Including international students and other short-term migrants in designing and implementing a host country's local and national DRR practices and strategies may also pose further challenges (e.g., language barriers, differences in risk perceptions and limited stay in a host country), but is an area scarcely mentioned in the existing literature (Beaven et al., 2014; Watson et al., 2011). A push is therefore needed to ensure that future contributions to knowledge in this field of migrant-inclusive DRR include short-term migrants, and to also ensure that their contribution to designing and implementing local DRR strategies and practices are not neglected.

2.4 Existing emergency and disaster risk reduction policy documents

2.4.1 Global policy documents

The Sendai Framework for Disaster Risk Reduction 2015-2030 is a global strategic policy, building upon its predecessor the Hyogo Framework for Action 2005-2015 and efforts undertaken since the International Decade of Natural Disaster Reduction in the nineties, with the aim of achieving a “substantial reduction of disaster risk ... with a more explicit focus on people ... and their livelihoods” (UNISDR, 2015, p. 12). The expected outcome of the Hyogo Framework for Action 2005-2015 document was to ensure “[a] substantial reduction of disaster losses, in lives and in the social, economic and environmental assets of communities and countries” (UNISDR, 2007, p. 3). The document also had an important role in raising awareness and focus about DRR, vulnerability and disasters amongst the public, national governments, and private stakeholders. Nevertheless, the Hyogo Framework for Action has also been critiqued, with lessons learned including the need for a stronger emphasis on “good governance in disaster risk reduction strategies” (UNISDR, 2015, p. 10), and the need for “a more people-centred preventive approach” (UNISDR, 2015, p.10), encouraging DRR practices to be more focused on multi-hazard, multi-sectoral risks, and inclusivity (UNISDR, 2015).

One of the main differences between the Hyogo Framework for Action and the Sendai Framework is that the Sendai Framework has a more explicit focus on actions and strategies concerning people and communities, emphasising that people and communities are at the centre of any successful DRR efforts (UNISDR, 2015). It is vital to acknowledge and incorporate this global awareness downstream in national and local policies, as without this explicit people-

centred focus, efforts and practices will not substantially decrease local risks and root causes of local vulnerability. Another relevant difference between the Hyogo Framework for Action and the Sendai Framework is the explicit mention of migrants in the Sendai Framework, whereas in the Hyogo Framework for Action there was only a general reference to ‘people and communities’.

Some of the guiding principles laid out in the Sendai Framework emphasise all-round societal engagement, inclusiveness, empowerment, and awareness of local contexts when addressing and implementing DRR practices. The Sendai Framework explicitly states that it is the “primary responsibility of States to prevent and reduce disaster risk” (UNISDR, 2015, p. 36), further clarifying that “governments should engage with relevant stakeholders, including women, children and youth, persons with disabilities, poor people, *migrants* [emphasis added], indigenous peoples, volunteers, the community of practitioners and older persons in the design and implementation of policies, plans and standards” (UNISDR, 2015, p. 10). Migrants and their importance in local and national DRR efforts are thus an important part of the Sendai Framework, emphasising that their skills and knowledge should be a significant part in designing and implementing DRR efforts (UNISDR, 2015).

The Sendai Framework consists of four priorities for action and seven measurable targets, with the targets elaborated on in Figure 1; they all seek to address and ensure the prevention and reduction of hazard exposure and consequences, while increasing preparedness, response, and recovery, thus decreasing peoples’ and communities’ vulnerability to disasters (UNISDR, 2015).

Figure 1 The seven targets of the Sendai Framework (UNISDR, 2015, p.36)

- | | |
|---|--|
| 1) Substantially reduce global disaster mortality by 2030, aiming to lower average per 100,000 global mortality for 2020-2030 compared to 2005-2015 | 2) Substantially reduce the number of people affected globally by 2030, aiming to lower the average global figure per 100,000 for 2020-2030 compared to 2005-2015 |
| 3) Reduce direct economic loss due to disasters in relation to global gross domestic product (GDP) by 2030 | 4) Substantially reduce disaster damage to critical infrastructure and disruption of basic services, among them health and educational facilities, including by developing their resilience by 2030 |
| 5) Substantially increase the number of countries with national and local disaster risk reduction strategies by 2020 | 6) Substantially enhance international cooperation with developing countries through adequate and sustainable support to complement their national actions for implementation of this framework by 2030 |
| 7) Substantially increase the availability of and access to multi-hazard early warning systems and disaster risk information and assessments by 2030 | |

The objective and seven targets of the Sendai Framework are structured as a voluntary non-binding agreement, which means that there is no requirement for countries to ensure that the seven targets will be achieved by the stated target of 2030 (UNISDR, n.d.). The lack of accountability, funding (national and local), and simplification of complex challenges are further criticisms relating to the Sendai Framework (Cutter & Gall, 2015; Fukuda-Parr, Yamin, & Greenstein, 2014; UN, 2015). Because there is no global accountability for countries in terms of reaching the objectives and the seven targets laid out in the Sendai Framework, accountability should occur within nations at local political and grassroots levels. A local version of accountability for the strategic targets of the Sendai Framework will help ensure that implemented practices and targets are context-specific and of value to local communities, rather than being generic and tokenistic. With regard to migrants, it is true that this group is mentioned in the Sendai Framework, though Guadagno (2016) and Perchinig (2016) have emphasised the need for a more explicit focus on this group in migrant-inclusive DRR, if global strategies and local practical efforts are to contribute to any consistent meaningful value for communities of migrants around the world (Guadagno, 2017; IPI, 2013).

Even though the Sendai Framework is a voluntary, non-binding agreement, with its seven aspirational targets, it can be argued that positive change will happen, though perhaps at a slower pace than what was envisioned or could perhaps have been accomplished through a binding agreement. It is therefore important to remember that whatever criticism there may be of global voluntary non-binding strategic documents (i.e., the Sendai Framework and the Hyogo Framework for Action), they are better than nothing, as they direct focus and resources towards areas of importance (Sachs, 2012).

2.4.2 National and local policy documents

At a national level in New Zealand, several Acts of Parliament describe the responsibilities of local governments and institutions in the provision of a strategic framework for addressing emergencies, risk reduction, well-being, and safety. On a general basis, these include the Civil Defence Emergency Management Act (Civil Defence Emergency Management [MCDEM], 2002), the Health and Safety at Work Act (Ministry of Business, Innovation and Employment [MBIE], 2015), and the Local Government Act (Local Government Act, 2002). On a specific level, for international students, the Education Code of Practice (Ministry of Education [MoE], 2016) also becomes relevant. Ensuring the public's (including new migrants') well-being and safety in disasters is specifically stated in the Civil Defence Emergency Management Act (MCDEM, 2002), emphasising the importance of the "well-being

and safety of the public” (MCDEM, 2002, p. 7). At a national level in New Zealand, a legal responsibility therefore exists, to address and decrease the presence of vulnerability in the general public, while minimising the consequences of disasters. Adhering to these ministerial Acts means that local regional governments and organisations (i.e., Auckland Council Emergency Management (AEM) and AUT in the context of this study), must ensure local and practice-based policies for DRR and an environment for the safety and wellbeing of international students. For AEM, efforts to address the requirements stated in the Acts have resulted in local policies such as Resilient Auckland 2016-2021 (AEM, 2016) and Thriving Communities (Auckland Council [AC], 2014), while AUT has implemented internal processes and plans to ensure the safety and well-being of occupants of their facilities in general, as well as specifically for international students, as required by the Health and Safety at Work Act (MBIE, 2016) and the Education Code of Practice (MoE, 2016).

The Resilient Auckland 2016-2021 plan is a strategic document guiding AEM's efforts and takes a more integrated approach towards emergency management and DRR than its predecessor, the AEM Welfare plan 2011-2016 (AEM, 2011). The Welfare plan 2011-2016 had more emphasis on response and recovery and less on preparedness, mitigation, and awareness. The term 'resilience' in the context of the Resilient Auckland plan encompasses both preparedness and response measures, making resilience a sub-component of DRR, emphasising that DRR and resilience are complex and interconnected phenomena (Aguirre, 2006; Cutter, Burton, & Emrich, 2010; Shaw & Maythorne, 2011), and are best achieved through a process of equal focus on soft mitigation and preventative measures (community engagement), in addition to the historical notion of emergency response and recovery practices. Further supporting the local Resilient Auckland 2016-2021 plan is the consistent reference to the Sendai Framework (AEM, 2016), and how objectives and actions laid out in this international document are being addressed at a local scale. However, the national connection between the Sendai Framework and the local Resilient Auckland plan is currently under review (MCDEM, n.d.), which means that practical experiences and lessons learned from the implementation of the Resilient Auckland plan are yet to be measured and shared, as the local plan has to be in alignment with the national framework.

A component to ensure community engagement in the Resilient Auckland 2016-2021 plan is referenced as being addressed in Auckland Council's action plan for Thriving Communities (AC, 2014), consisting of specific areas that communities themselves, in cooperation with Auckland Council, have highlighted as being important for strengthening

community involvement. The presence of national and local plans stressing the importance of an integrated approach towards DRR is positive; however, in practice these aspects are challenged by factors related to the economy, a dynamic diverse understanding of what a community is, and a diversity of stakeholders and departments needing to cooperate (AC, 2014; Aldrich & Meyer, 2014; Donner & Rodríguez, 2008; Pearce, 2003; Sonn & Fisher, 1998). Awareness from a national to a local level of the importance of DRR and community engagement nevertheless exists (AC, 2014, AEM, 2016, MCDEM, 2002), acknowledging communities and their key role in local DRR practices. However, because the Thriving Communities plan is four years old (dating from 2014) and is being referenced in the Resilient Auckland 2016-2021 plan (AEM, 2016) in ensuring how communities, including migrants, are involved and engaged in DRR efforts, there seems to be a disconnect. A disconnect arises because the present-day strategies for creating ownership and knowledge of the Resilient Auckland 2016-2021 plan (in 2018), are formed by past knowledge and do not account for the continuous influx of short-term migrants, such as international students, in understanding how such short-term migrants' influence communities' inclusion of them in local DRR practices.

The presence of migrants in host countries is not merely positive from an economic point of view, because of their contributions to the local and national economies (Brown, 2009; Montz et al., 2011; Friesen, 2017; Tompkins et al., 2009). Migration also carries with it a responsibility for the host country to support and assist these new individuals, with an appreciation of their specific vulnerability and capacities, which is something that is often not fully appreciated or acknowledged (Bourbeau, 2015; Gardner et al., 2007; Guadagno, 2017; Montz et al., 2011; Watson et al., 2011). Specifically, in an Auckland context, migrants' inclusion in DRR practices is briefly mentioned in the Resilient Auckland 2016-2021 plan (AEM, 2016), though an explicit focus, follow-through, and assurance of migrant-inclusive DRR efforts do not seem to be the main priority. One criticism of the Resilient Auckland 2016-2021 plan may therefore be that the local strategic implementation of responsibilities, as stated in the Civil Defence Emergency Management Act, does not sufficiently address and ensure that local efforts and practices are in place to support and include migrant communities in the development of and contribution to local DRR practices.

A community, as understood in the Resilient Auckland plan is furthermore predominantly defined by geographical boundaries, making it the responsibility of the local boards (21 in the Auckland region), to support communities in their development of neighbourhood response plans while increasing an understanding of DRR and emergency

management services (AEM, 2011; AEM, 2016). The clustering of communities by geographical boundaries is sensible from a planning and organisational perspective, though in practice this is challenged by the constant movement of individuals, migrants being no exception, which makes belonging to a community less about rigid lines on a map and more about flexibility and shared interests, such as attending sports clubs or religious services outside of one's geographical place of residence. A further criticism of the Auckland Council's local plans (Thriving Communities and Resilient Auckland), is that sub-groups of migrants (short-term migrants and international students) are not specifically accounted for. It is assumed that they are included in the broad group of migrants, which disregards inherent differences in potential vulnerability or capacities of specific migrant groups, and how these then will not be specifically targeted or supported. However, while Auckland Council's existing plans and strategies for DRR do not explicitly address short-term migrants (e.g., international students), the Education Code of Practice (MoE, 2016) does, making it a duty of care and legal requirement for AUT and other tertiary education institutions to ensure that "all reasonable steps to protect international students [are taken]" (MoE, 2016, p. 3).

2.5 Chapter summary

The purpose of this chapter has been to define the key terms used in the study, thus creating a relevant frame of reference for this study. The review of the literature emphasised the diverse definitions of key terms such as 'vulnerability' and 'capacities' while also reviewing existing global, national, and local strategies and policies relevant to DRR efforts in New Zealand. The literature review further clarified that addressing vulnerability and capacities through DRR requires the cooperation of diverse stakeholders, and that it is not something that can be sustainable or of value if solely done by outsiders (e.g., emergency departments, experts, and governmental services) without involving local communities.

The literature review makes it clear that migrants' inclusion in DRR efforts is needed, because while migrants are a vulnerable group experiencing diverse vulnerability, they also have capacities that can make useful contributions to local DRR activities. Recent efforts have been undertaken to address the need for migrant-inclusive DRR practices, but without specifically acknowledging and accounting for the presence of short-term migrants (e.g., international students). Knowledge about international students' vulnerability, capacities, and their inclusiveness in DRR is therefore needed, and it is the aim of this study to increase awareness of this area, contributing to a gap field in the social science realm of disaster research.

Chapter Three: Methods

This chapter describes the research design and methods used in the study. The research consisted of a qualitative descriptive study that involved semi-structured interviews with international students and key informants that were thematically analysed. The chapter consists of nine sections, each elaborating on different areas of the research, including the chosen paradigm, methodology, method for data analysis, aspects of trustworthiness, and the ethical and cultural considerations relating to this research.

3.1 Research paradigm

An interpretive paradigm shaped the research, allowing for a greater understanding of the collected qualitative data, supporting the notion that something valuable can be found in the interpretation of qualitative data (Grant & Giddings, 2002; Smythe & Giddings, 2007). The choice of an interpretive paradigm, the subsequent methodology, and method of analysis for this study was shaped by an ontology of cautious realism and a constructionist epistemology (Blaikie, 2007; Ritchie, Lewis, Nicholls, & Ormston, 2014). Ontology relates to beliefs about reality and what truth is, while epistemology focuses on the relationship the researcher has to the research and how knowledge is formed (Flick, 2004; Grant & Giddings, 2002). Following a constructionist and subjectivist approach in this research means that multiple socially constructed realities are believed to exist, emphasising that findings are subjectively formed social phenomena and that the meanings that can be ascribed to them are informed by the dynamic societal, cultural, and historical contexts that individuals are a part of (Clarke, 2006; Yardley, 2000).

The concept of “Truth” (Yardley, 2000, p. 217) in this study was not considered as a static thing waiting to be discovered, but instead believed to be socially constructed, with the understanding that interesting findings could be analysed and presented through an appreciation of participants’ subjective perceptions of a certain phenomenon as created by multiple realities and worldviews (Braun & Clarke, 2006; Grant & Giddings, 2002; Yardley, 2000). Because the aim of the research was to explore and understand a phenomenon, adhering to an interpretive paradigm for this study was viewed as appropriate as it would allow the presentation of multiple socially constructed realities, supporting and addressing the study’s research question and objectives.

3.2 Research methodology

As the scope and focus of this research were to understand the vulnerability and capacities of international students in the face of disasters and how DRR can be improved to better address their needs, the research was situated in the social science area of disaster research (Gaillard & Mercer, 2012; Quarantelli, 2008). A qualitative descriptive methodology as defined to be a broad, flexible and open theoretical qualitative research approach (Colorafi & Evans, 2016; Neergaard, Olesen, Andersen, & Sondergaard, 2009; Sandelowski, 2000), was chosen because it would encourage an enriched and explorative understanding and presentation of the phenomenon being studied (Grant & Giddings, 2002; Smythe & Giddings, 2007). The type of qualitative descriptive methodology used for this study had an emphasis on being true to the collected data and its interpretation, though with a focus on the importance of interpretation in the analysis of data, because “all description entails interpretation” (Sandelowski, 2000, p. 335). There was an understanding that data in itself eludes any meaningful presentation without first being explained in its relevant context (Colorafi & Evans, 2016; Neergaard et al., 2009; Sandelowski, 2000).

3.3 Study area and population

As stated in Chapters One and Two, the definition of a migrant and the sub-group of short-term migrants (i.e., those residing in a host country for 3 to 12 months), depends in practice on the context, rather than on a theoretical definition (OECD, 2003; UNSD, n.d.). This means that international students are often not defined as being short-term migrants, though in practice they typically are. In this study, it was chosen to broaden the OECD and UN definitions, to better encompass international students as being short-term migrants, staying in a host country for between 3 and 24 months. The study centres on the Auckland Region, in New Zealand, with a specific focus on international students studying at one or more of AUT's campuses. This geographical location was chosen for the study because of the high presence and continuous influx of international students to the region in general and AUT specifically (up from 3,361 in 2012 to 4,194 in 2016) (AUT, 2013; AUT, 2017a), making it an area well suited for the scope of this research.

Key inclusion criteria for international students, for participating in this research, was that they should be proficient in English, 16 years of age or older, enrolled as an international student at Auckland University of Technology (AUT), and have been residing and studying in Auckland for a period of 3 to 24 months. International students might be viewed as a

homogeneous group as they share some similarities. However, in practice, this is far from the case because they can be further sub-divided by race, nationality, culture, length of study or language. Nevertheless, this research studied and explored the broad presence of international students, rather than a specific sub-group, due to the limited existing research and understanding in this field of disaster research.

To complement the data collected from international students it was decided to interview key informants from the New Zealand Government (AEM) and AUT, as these informants in practice play a crucial role in supporting international students, before, during and following a disaster. This allowed a fuller and more in-depth understanding and exploration of the research topic. The inclusion criteria for key informants were as follows, depending on their connection to either AEM or AUT; that they must be proficient in English, work with or be knowledgeable about DRR from a government perspective (AEM), be employed at AUT either in the Student Services department or the International Students Office, and/or be responsible for or working with emergency plans and processes concerning students at AUT.

3.4 Recruitment

Recruitment of international students studying at AUT was achieved by posting advertisements on the university's three campuses, on BlackBoard® (i.e., a virtual learning environment and community used by AUT to keep connected with students) (AUT, n.d.b), and publicising the study through informal student networks (university or study groups). Individuals who expressed interest in participating were chosen on a first come, first serve basis, after making sure that they met the inclusion criteria. Key informants were found and recruited using publicly available information or via peer-to-peer suggestions to the researcher. The data collected from the participants focused on the quality of the interviews rather than the quantity (Harrell & Bradley, 2009; Mays & Pope, 1995; Sandelowski, 1995) and continued until data saturation was achieved (Cope, 2014; Sandelowski, 1995).

3.5 Data collection

Data collection was performed using semi-structured individual interviews. This method was chosen as it enabled participants to provide rich information on a novel research area (DiCicco-Bloom & Crabtree, 2006; Sandelowski, 1995). The semi-structured approach enabled the researcher and participants to ask and answer certain questions, while still having the flexibility to explore relevant topics that were not included in the interview guides (DiCicco-Bloom & Crabtree, 2006; Harrell & Bradley, 2009; Mays & Pope, 1995; Sandelowski, 1995;

Smythe & Giddings, 2007). All interviews were audio-recorded and subsequently transcribed verbatim. The average time of the interviews with the ten international students was 44 minutes, while interviews with the four key informants had an average of 50 minutes. Before commencement of interviews with international students, they were asked to fill out a demographic form, to collect demographic information about the study participants.

The interview guides used for international students and key informants were informed by academic and grey literature (Aldrich, & Meyer, 2014; Clay, Colburn, & Seara, 2016; Lee, 2016; ProVentium Consortium, 1996), and thorough review and consultation with potential research participants. This process helped to ensure that the questions asked were appropriate and addressed the study's research question and objectives. Consultation included meetings with one international student and one key informant from AUT. Their feedback highlighted areas of the interview guides that could be elaborated on and suggested questions to be included. As a result, suggestions relating to how international students' financially support themselves (Appendix b.1), place of residence in the demographic form (Appendix b.1.1) and clarifying a question about pastoral care (Appendix b.3) were incorporated in the interview guides for international students and key informants from AUT, heightening the relevance of the interview guides for the participants. One of the interviews with key informants consisted of two participants rather than one, which was the case for all the other interviews with key informants and international students. The two participants were offered the opportunity to be interviewed separately but preferred to be interviewed together. This preference was accommodated by the researcher; otherwise, because of these key informants' work commitments, it would not have been possible to collect data from them.

3.6 Data analysis

A thematic data analysis method was used to analyse data collected from international students and key informants (Aronson, 1995; Braun & Clarke, 2006; Braun & Clarke, 2012). The analysis involved a combination of inductive and deductive approaches, as the findings were the result of what participants chose to share (i.e., emerged from the data), though this sharing was thematically framed and analysed through the researcher's pre-existing theoretical understanding of key concepts (i.e., informed by theory) (Aronson, 1995; Braun & Clarke, 2006). The development and presentation of the themes were approached deductively, while sub-themes were inductively informed. The method of analysis was chosen to "unravel the surface of 'reality'" (Braun & Clarke, 2006, p. 81), rather than to solely reflect 'reality', as the research endeavoured to explore and theorise the conditions that may shape any individual account

(Braun & Clarke, 2006). Analysis of the transcribed data was an incremental process (DiCicco-Bloom & Crabtree, 2006), as continuous reflection and creation of themes and sub-themes occurred simultaneously while collecting, transcribing, and analysing data. Transcription of data was a basic part of the analytic process in this research (Bird, 2005).

The thematic analysis involved six steps and iteratively moved back and forth between coding of data from individual participants, in combination with the overall dataset. This kind of cyclical process helped to ensure rigour in the resulting themes and sub-themes, in that they were generated from participants' own perceptions and existing theory, ensuring the credibility of findings (Aronson, 1995; Braun & Clarke, 2006). The six steps of the thematic analysis consisted of familiarisation with the data; generation of initial codes; searching for themes; reviewing themes; defining and naming themes and ended with the final production of the report (write-up of the analysis/storytelling of themes in context) (Braun & Clarke, 2006). Following these six steps, and being transparent about the method and analysis undertaken, ensured rigour during the research process as well as making it easier for subsequent readers to judge the trustworthiness of the findings. The software program NVivo® version 11 was used during the analysis phase, following the manual transcription of interviews verbatim, which facilitated the organisation of the qualitative data into meaningful themes and sub-themes.

3.6.1 Analysis process

Step 1: Familiarisation with data

The first step in the analysis of the collected interview data from both international students and key informants was the establishment of the meaning units, defined as “segments of text that contain a single idea” (Colorafi & Evans, 2016, p. 20), present in the interview transcripts (Braun & Clarke, 2006; Braun & Clarke, 2012). Because the analysis was shaped by a combined inductive and deductive approach (Fereday & Muir-Cochrane, 2006) each meaning unit was framed to be as close to the existing text as possible, to increase the subsequent truthful presentation of findings (Aronson, 1995; Braun & Clarke, 2006; Braun & Clarke, 2012). Nevertheless, the analysis, essence and subsequent representation of themes were undoubtedly influenced by the researcher's existing theoretical knowledge and perceptions (Aronson, 1995; Braun & Clarke, 2012). Because meaning units can be relevant to different themes or sub-themes, they were not prevented from being present in more than one group. Before NVivo® was used to organise the collected data, each transcribed interview was printed and read. This process was the beginning of the initial analysis, allowing the researcher to

become familiar with the data, highlighting text that could be of interest while also reflecting and writing comments on the text; an example of the process is shown in Figure 2.

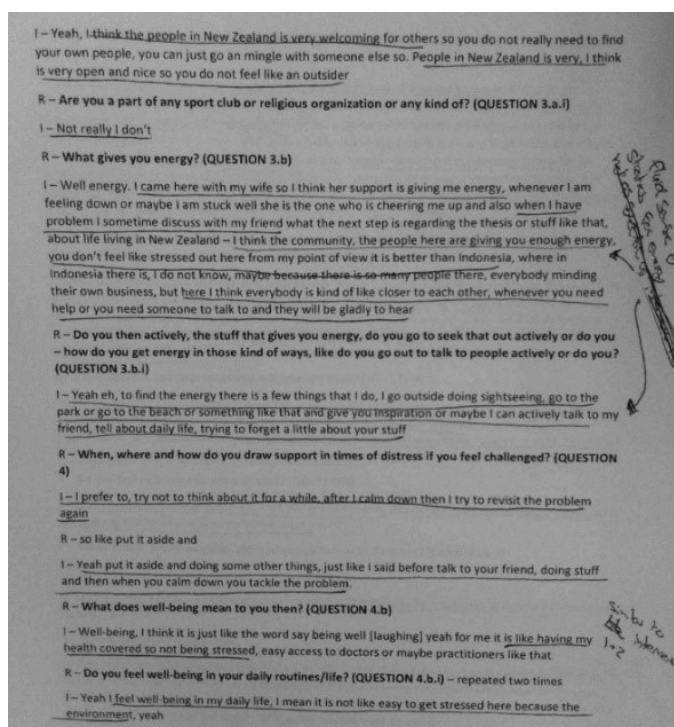


Figure 2 – Example of familiarisation with text, initial analysis.

Steps 2-3: Coding and initial theme development

Following the initial stage of the analysis, the meaning units from the 14 interviews (995 meaning units from the collected data) were clustered into specific codes (Braun & Clarke, 2006). The codes were created by analysing the relationship and similarities between meaning units, which meant that the codes were not directly related to the spoken data provided by the participants, but still aimed to support the development of a “rich thematic description of [the] entire data set” (Braun & Clarke, 2006, p. 83). The first step in the grouping of meaning units was done using broad codes and sub-codes, depending on their relationship. In the process of categorising, each group was read and analysed individually at first and then referenced back to the respective individual interviews, ensuring that the meaning units present in the codes were representative of the combined collected data. Complementing the coding and analysis in NVivo®, mind maps were created to visualise and spatially structure the relationships between emerging themes and sub-themes, as exemplified in Figures 3 and 4.

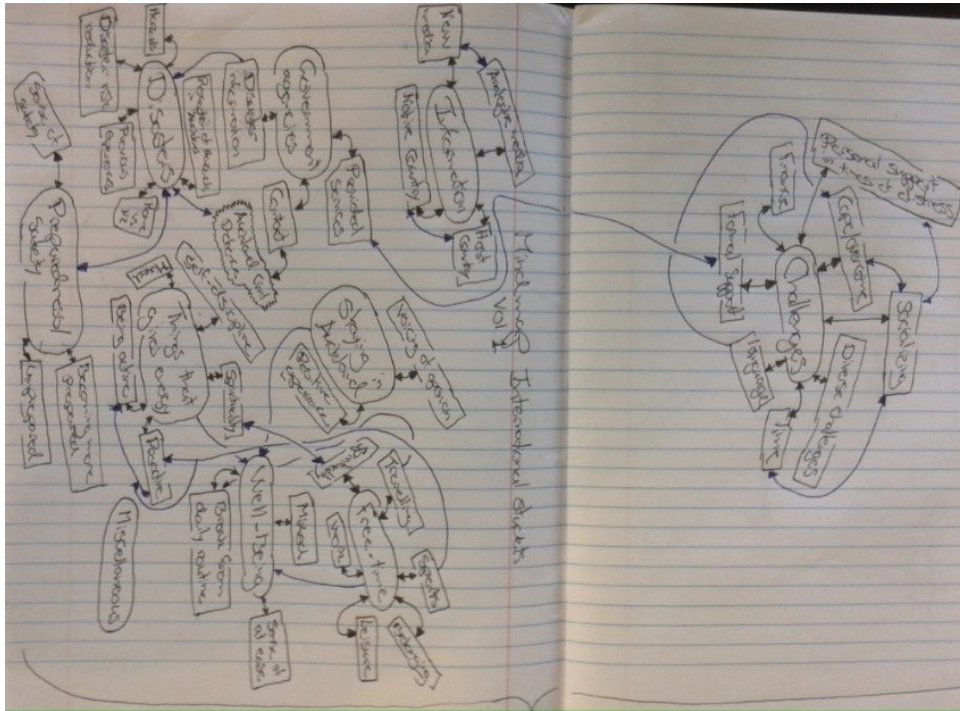


Figure 3 – Mind map showing the first tentative themes and sub-themes.

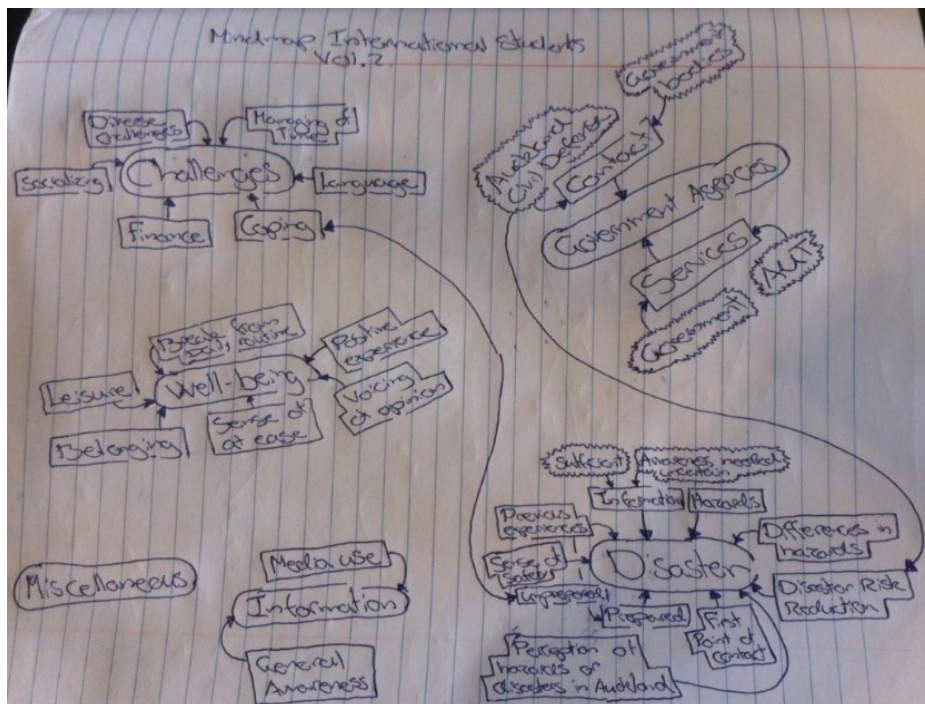


Figure 4 – Mind map showing the refining of themes and sub-themes.

To ensure that the meaning units were grouped under relevant codes, each code and connected theme were described in NVivo®, to clarify and ensure consistency in the grouping of meaning units. For those meaning units that did not seem to have any relationship or similarity with other codes or meaning units, a miscellaneous group was created.

Steps 4-5: Reviewing and defining themes

Throughout the data analysis process, meaning units in codes were actively reflected upon, ensuring that the subsequent development and essence in the naming of themes occurred as an iterative process, addressing the study objectives and research question while being truthful to the whole dataset. The creation and presentation of themes, however, was not explicitly identified in the dataset but went “beyond the semantic content of the data ... identifying the underlying ideas [and] assumptions that are theorised as shaping or informing the semantic content of the data” (Barun & Clarke, 2006, p. 84). When the analysis was deemed adequate for the representation of findings, each theme was re-named to capture the essence of the theme, conveying “an immediate and vivid sense of what [the] theme is about” (Braun & Clarke, 2012, p. 69), distinguishing and clarifying each theme’s contribution to the overall narrative of the findings (Braun & Clarke, 2006).

Step 6: Presentation of findings

The final step in the thematic analysis process was the presentation of the study’s findings, which will be done in the next chapter. Participant quotes from the dataset were used to support and demonstrate the interpretation and presentation of data, seeking to “[convince] the reader of the merit and validity of [the] analysis” (Braun & Clarke, 2006, p. 93), and show how the study’s findings addressed the research question and objectives. The names used in the presentation of findings were chosen randomly by the researcher, and have no connection to the research participants, thus ensuring confidentiality.

3.7 Trustworthiness

To increase the quality and rigour of the study, the notion of trustworthiness was used. However, there is a continuous debate within academic circles around the usefulness of trustworthiness in qualitative research and whether the terms used in quantitative research (i.e., validity and reliability) should be used instead (Golafshani, 2003; Labuschagne, 2003; Long & Johnson, 2000; Reicher, 2000); and how “method-slurring” (Baker, Wuest and Stern, 1992, p. 1355) in qualitative research design, methods and the ensuring of rigour, at times result in confusion, thereby undermining the value and contribution of qualitative research (Baker et al.,

1992; Rolfe, 2006). This debate was taken into consideration during this research, meaning that the decision to use the concept of trustworthiness, rather than validity and reliability as argued by Morse, Barrett, Mayan, Olson, and Spiers (2002) and Rolfe (2006), to ensure research quality and rigour, was used on an informed basis. Different strategies for reaching trustworthy and congruent conclusions in qualitative research have been extensively elaborated upon (Graneheim & Lundman, 2004; Lincoln, 1995; Morse et al., 2002; Rolfe, 2006; Vaismoradi, Turunen, & Bondas, 2013), meaning that aspects such as credibility, confirmability, dependability, and transferability all supports and contribute to how trustworthy a study can be deemed. These four avenues have been addressed consciously throughout this research and are elaborated on below.

Credibility

Credibility in qualitative research refers to the “faithful representation of participants’ views in the researcher’s presentation of data and findings”, as well as the researcher’s self-awareness around his/her own biases and how this shape the study (Cope, 2014; Long & Johnson, 2000; Tobin & Begley, 2004). Credibility further relates to the presence of “confidence in how well data and processes of analysis address the intended [research] focus” (Polit & Hungler, 1999 as cited in Graneheim & Lundman, 2004, p. 109).

Various strategies can be implemented during a research project to increase credibility. These strategies may focus on peer debriefing, audit trails kept by the researcher, member checking, and prolonged engagement with the research subjects (Tobin & Begley, 2004; Koch, 2006). To maximise the credibility throughout this study, three strategies were used. Firstly, a reflective journal was kept by the researcher that documented the decisions, thoughts, and assumptions that shaped the research process throughout the study. Secondly, the creation of themes and sub-themes were consistently reflected upon and subjected to peer debriefing (with the dissertation supervisor and an academic disaster management group). Thirdly, the preliminary findings were presented to the participants, as a form of member checking, to invite their comments about the study’s findings, which influenced the presentation of the findings. Feedback from an international student influenced the recommendations of the study by emphasising that a focus for tertiary institutions should be on providing workshops about DRR, while a key informant emphasised the need for local DRR practices resulting in behavioural change, though this may be unfeasible, as will be discussed further in Chapter 5.

In some of the interviews, participants also expressed a wish to clarify their oral information by providing written answers to some of the questions. Therefore, following the

interviews, the questions were sent to those participants who expressed this wish, and their written clarifications were subsequently included in the data analysis. Themes and sub-themes were peer-reviewed, not to verify the findings, but “to determine whether or not various researchers and experts would agree with the way those data were labeled and sorted” (Graneheim & Lundman, 2004, p. 110). This also meant that the data, analysis, and findings were continuously questioned, preventing “premature closure of the search for meaning and patterns in the data” (Long & Johnson, 2000, p. 34).

Confirmability

Strategies related to confirmability in qualitative research that was followed in this study relate to the researcher’s “ability to demonstrate and describe how conclusions and interpretations were established” (Cope, 2014, p. 89). One method used in this study to increase confirmability, ensuring that “data represent the participants’ responses and not the researcher’s biases” (Cope, 2014, p. 89), was to incorporate the presence of diverse realities during the presentation of themes (Cope, 2014; Tobin & Begley, 2004). Furthermore, efforts were made to be transparent in the presentation and description of how results were derived, by keeping a reflective research journal throughout the study, and incorporating rich quotes from participants in the presentation of findings, representing and depicting the constructed narrative of each theme (Cope, 2014; Koch, 2006).

Dependability

Dependability in this study was defined as the ability for “others [to] examine the inquirer’s documentation of data, methods, decisions and end product” (Tobin & Begley, 2004, p. 392), which meant that a reflective journal was kept throughout the study, increasing the transparency of how interpretation of codes and data was shaped and influenced the development of themes and sub-themes (Cope, 2014; Koch, 2006; Tobin & Begley, 2004). To increase the dependability of the findings, data were collected under similar conditions, while criteria and the population of research participants were thoroughly explained (Chapter Three and Four), to increase the transparency and replicability of findings “with similar participants in similar conditions” (Cope, 2014, p. 89). Establishing dependability in a qualitative study is, however, challenged by available resources and time-restrictions. This meant that in this study there were no prolonged engagements, follow-up interviews with participants or other longitudinal methods used to assess how collected data and participants’ own subjective perceptions changed over time (Graneheim & Lundman, 2004).

Transferability

Qualitative research is context-specific, which means there is not a focus on generalisations of findings (Tobin & Begley, 2004). However, the ability to be able to transfer findings to other contexts with similar characteristics is important nevertheless, as results can have meaning to “individuals not involved in the study ... [or] readers can associate the results with their own experiences” (Cope, 2014, p. 89). Transferability can therefore be defined as “the extent to which the findings can be transferred to other settings or groups” (Polit & Hungler, 1999 as cited in Graneheim & Lundman, 2004, p. 110). It has been argued by Graneheim and Lundman that transferability can only be suggested as “it is the reader’s decision whether or not the findings are transferable to another context” (2004, p. 110). Nevertheless, throughout this study steps were taken to increase transparency when describing and clarifying the research context in which data were collected and analysed. This approach increased the informed judgement of the research findings, thus addressing the transferability of research results (Cope, 2014; Tobin & Begley, 2004).

3.8 Ethical and cultural considerations

To ensure the study did not pose unnecessary harm to research participants, care was taken during the research design and data collection, to consider ethical and cultural aspects (Boynton, Wood, & Greenhalgh, 2004; Clarke, 2006; Hopf, 2004; Whiting, 2008). Ethical approval for the research was sought and granted by the Auckland University of Technology Ethics Committee (AUTECH), reference number 17/390 (Appendix A). Participants were informed about the research in detail, in writing, before the commencement of an interview (Appendix B.c.1-B.c.3). The information provided emphasised that participation was voluntary and that no research inquiry would be pursued if it created discomfort for the participant. A signed consent form from the interviewed international students and key informants who agreed to participate in the research was collected by the researcher and stored by the researcher’s supervisor at a secure location. Research participation by international students and key informants mainly involved information sharing, though consultation with international students and key informants was sought during the design of the interview guides. It was stressed to the research participants before their interviews that the relationship between the researcher and them as participants was an equal and respectful one, encouraging their active participation in the interview. The researcher himself was an international student, which was viewed as an asset when building rapport and being culturally sensitive (Clarke, 2006), especially with regards to the research participants who were international students, because “participants often respond

more favourably to interviewers who are similar to themselves” (Fielding as cited in Whiting, 2008, p. 36).

3.9 Chapter summary

To address the research question and objectives of the study, a qualitative descriptive methodology, informed by an interpretive paradigm, was used. The selected research approach enabled the researcher to explore and understand the vulnerability and capacities of international students from their own points of view, along with those of key informants playing a key role in DRR efforts and emergency planning at AEM and AUT. The method used to collect data was individual semi-structured interviews with data from international students and key informants being thematically analysed following verbatim transcription. Throughout the design, collection and analysis phases, steps were taken to ensure the trustworthiness of the research.

Chapter Four: Findings

This chapter presents the findings from the collected qualitative data. Ten individual interviews with international students were conducted, with an additional four interviews with key informants, for a total of 14 interviews. Pseudonyms are used instead of participants' names in the representation of the findings, to maintain participants' confidentiality.

4.1 Demographics of study participants

Demographic characteristics of the international students ($n=10$) are presented in Table 1. Interesting findings from the demographics of international students are the diversity in age (i.e., between 16 and 45 years), and time of stay in New Zealand when the interviews were conducted. Most participants came from Asian countries ($n=8$) while one indicated the US and Sweden as their country of origin. Participants' gender was almost equally divided between males ($n=6$) and females ($n=4$).

Table 1 Demographic characteristics of international students ($n=10$)

	International students ($n=10$)
Age, years	
16-25	2
26-35	5
36-45	3
46-55	-
56 and over	-
Sex	
Male	6
Female	4
Other	-
Country of Origin	
India	1
Indonesia	2
Laos	1
Philippines	2
Sri Lanka	2
Sweden	1
United States of America	1
Language proficiency	
English (native)	1
English (second language)	9
Type of residence in Auckland	
Apartment	3
Flatting ¹	2
Homestay ²	1
Other student accommodation not affiliated with the university	2
University accommodation	2
Other	-
Time of stay in New Zealand, when interviewed	
Less than 1 year	4
1 year	4
More than 1 year	2
Experience with studying abroad	
None (first time)	8
Previous experience	2

¹ Flatting is synonymous with room-mates and is used in New Zealand to describe a situation where multiple unrelated people live together in the same house or apartment.

² Homestay is when a student is residing in a family's private home for the duration of their studies.

4.2 Themes and sub-themes

The analysis of collected data yielded four themes and 15 sub-themes, as presented in Table 2. Presenting and describing the themes and sub-themes, using representative participant quotes, will be the focus for the rest of this chapter.

Table 2 Themes and associated sub-themes identified from interviews with international students ($n=10$) and key informants ($n=4$)

Daily challenges	<ul style="list-style-type: none"> • Adjusting to a new life • Finances • Language • Time management • Social life
Well-being	<ul style="list-style-type: none"> • Belonging • Living in the host country • De-stressing through leisure activities
Seeking information and support	<ul style="list-style-type: none"> • Media use • Student services at tertiary institution • Supporting services provided by government
Disaster (un)awareness	<ul style="list-style-type: none"> • Feeling safe • (un)Informed knowledge of risk communication • (un)Awareness of hazards, risk, and disasters • (un)Prepared

4.2.1 Daily challenges

The narrative presented in this theme focuses on daily life challenges as experienced by the interviewed international students, and how key informants perceived the presence of challenges faced by international students. Five sub-themes were present, relating to adversity in adjusting to a new life, finances, language, time management, and social life. The challenges experienced by the international students showed adversity related to being a foreigner (i.e., adjusting to a new life, language, and socialising), while other factors such as finances and time management did not relate specifically to being new in a host country. Key informants viewed socialising as one of the main challenges for international students.

“I am finding this problem to understand people and correctly communicate, and especially what you call this accent, after people, it is very difficult, different people different accents so that was a big challenge.” (Larry, international student)

“I would like to [do activities in my spare time], but I don’t know how I can manage my time, because I have only three years to complete my Ph.D., because I am on study leave, so I have a very tight schedule.” (Megan, international student)

Even though adversity was experienced it was also apparent that proactive measures were taken to become more familiarised with the new society, and to manage time while

emphasising and understanding the importance of social connections and support in relation to balancing academic pressures, social life, and feeling home-sick.

“It’s been really easy to adjust to the life in New Zealand, the country is really welcoming so it is easy to feel like part of the society.” (Dorothy, international student)

“I try to manage my time efficiently by doing my work first and then taking time for leisure afterwards.” (Jack, international student)

“It is not until they make their first friend that a lot of the support goes away, their anxieties, their issues go away. This is true for every international student I have seen.” (Michael, key informant)

The findings articulated in this theme and represented in the quotes of international students and a key informant indicate the diverse challenges experienced by international students, and how these adversities are being overcome and alleviated.

4.2.2 Well-being

The essence of this theme and its related three sub-themes concerns the interviewed international students experience of belonging, the strategies used to create a balance between studies and personal life, and how living in New Zealand was seen as a positive thing. The feeling of belonging amongst international students varied, ranging from a sense of belonging for some international students to others who did not feel a strong sense of belonging to any groups. Time pressure and tertiary institutions’ focus on self-study were the main reasons for some international students struggling to feel a sense of belonging, as academic achievements were prioritised over the creation of social ties. Belonging, as a concept, was also seen by key informants as one of the main challenges facing international students, because of the increased use of technology and social media platforms, which can both facilitate adjustment and a sense of belonging for migrants in a host country and increase exclusion since face-to-face interaction may become limited. However, other international students viewed New Zealand as a hospitable place, making it easy to adjust and become connected to groups who shared their interests.

“I think the people in New Zealand are very welcoming for others, so you do not really need to find your own people, you can just go and mingle with someone else so. People in New Zealand are very, I think very open and nice, so you do not feel like an outsider.” (Dick, international student)

“Social side of things, a lot of the times that is what we are facing right now, the social exclusion, where students do not have that, they are not in that world where they can interact with society because everything is on the phone.” (Michael, key informant)

“I think my biggest concern is I do not really have friends. I do love to meet people, but then again you know, the part of my studies I just have the block course, I don’t have

any much of any friends ... we don't get to see each other very much, only in those classes." (Stuart, international student)

Contributing to the sense of belonging and the ability to nurture this also related to the experience of living in New Zealand, and how this was a positive thing, as exemplified in the following quotes:

"I think it is normal to feel a bit home-sick, but once I got used to living here, it is actually a nice experience." (Lloyd, international student)

"Considering how friendly everyone is and how many people there are and how busy it is, I feel like Auckland is a pretty open community and welcome space for people to talk about issues that are important to them." (Eleanor, international student)

A final sub-theme relates to international students' active and diverse use of their free time, indicating a presence of self-efficacy and proactiveness for some, in seeking a balanced approach to studies and social life. The presence of self-efficacy and proactiveness in international students was also acknowledge and supported by key informants, as international students were viewed as resilient and resourceful.

"To find the energy there are a few things that I do, I go outside doing sightseeing, go to the park or go to the beach or something like that and give you inspiration or maybe I can actively talk to my friend, tell about daily life." (Dick, international student)

"I think students on the whole are actually more resilient than what we give them credit for [...] it actually takes a need to understand yourself, a lot of resilience to transplant yourself to another country, to study there in isolation, so I think, on the whole, our students both domestic and internationally are pretty resilient as it comes, but you never really know until you test." (Lara, key informant)

"In our roles, I think [we] are here to help students build that resilience so that they can then navigate themselves through the issues that come in through the year." (Michael, key informant)

The essence of this theme implies that international students are aware of the need to balance their academic commitments with time to relax and re-charge, indicating that they have an internal proactiveness in finding a balanced approach to social life and academic studies, and understand that this is an important prerequisite for their well-being. It was also found that a sense of belonging existed on an individual basis, which could be nurtured through the positive experience of living in New Zealand. Challenges in fostering a sense of belonging or struggling to find a balance between academic and social life, as indicated by key informants and some of the international students, could result in students feeling socially excluded and increase their experience of adversity.

4.2.3 Seeking information and support

The focus of this theme, with its three sub-themes, relates to the use of media, and international students' awareness and use of supportive services provided by the government and the tertiary institution (e.g., counselling, health, peer-mentoring, and immigration services). Data from key informants emphasised the presence of supporting services and efforts to make these services accessible to international students. The main sources of information used by international students to keep up-to-date with things happening in New Zealand and abroad (i.e., international students' home countries) were online media, such as news websites and notifications from Google®, with a preference for social media (e.g., Facebook®). A few international students used TV and radio as their preferred choice of information.

"I read New Zealand Herald on the website, that's where I get my news from, and then on TV, on Google is, iPhone has this news recommendation that it can be placed on your search, so it is mostly around that." (Danny, international student)

Even though media sources were used to find information, while keeping updated with things happening in New Zealand and abroad, some international students did not indicate an active following or searching for information.

"I do not know, I think I am around the daily life, social life here in Auckland it's not really, the news I do not really follow." (Stuart, international student)

When enquiring about international students' awareness and use of media, the importance of being kept up-to-date with what was happening in their home country, to maintain connections with family and friends, became apparent.

"I follow Indonesian news because you get home-sick, you need something to hold on yeah, so it is also good to know current news from Indonesia." (Dick, international student)

"I think it's quite important just to [know] what's happening back home, especially because my family is back there." (Lloyd, international student)

A balanced view amongst international students was articulated in relation to the accessibility of information about supporting services provided by the government and the tertiary institution, with some finding it easy (i.e., using Google®), while others found the support services not relevant to them, or were unaware of them (e.g., lack of information about these services). It was noted by key informants that the provision of supporting services from their point of view, was structured in a way to increase their accessibility.

"I know that there is a lot of support services, but we have to look for that, we have to search for that, until you search you do not know." (Larry, international student)

“It is much easier, and also in the university, I mean they provide a lot of information.”
(Jack, international student)

“There is actually a really structured program to make sure students know everything they need to know to be able to be successful.” (Richard, key informant)

Enquiring specifically about knowledge and awareness of support services, and where to go to receive these, the international students offered diverse perceptions of this.

“We can call them [International Student Office at AUT], we can e-mail them, they have emergency numbers to contact them if something happens in an emergency, so I do not really see any way that you cannot, you know, contact them, and they are available I think.” (Stuart, international student)

“It was up to myself to build myself, so I am happy that I did that well by myself, so I know all the support services are there by myself.” (Larry, international student)

“Most of the support that we need is actually being handled by the scholarship office, they are our first contact point. We might probably have some assistance from government or non-government organisations, but it passes through the scholarship office, so we are not directly in contact [with them].” (Lloyd, international student)

In relation to key informants' perception of international students' experiences with seeking information and support, it was indicated that specific efforts were made to provide support in relation to challenges international students may experience (e.g., resilience workshops and peer-mentoring). Nevertheless, it was also specified by key informants that it was up to students themselves to make use of the support systems provided.

“The university is now conducting resilience workshops. There are things that are available across the wider university. Whether the student takes that up is a totally different ballgame.” (Michael, key informant)

Data shared by key informants further emphasised that the provision of supporting services by the tertiary institution involved collaboration between various stakeholders internally (informal student networks and formal support services), to provide a base of supporting services to as many students as possible. It was also stressed that the tertiary institution focused on including the student body in decisions, and in implementing and providing student services, acknowledging that this inclusion is important for ownership, student contribution and students continued use of support services.

“It is going to be hard to cater to each and every group, so what the university provided was, and this is consistent, this is true to AUT, we said irrespective of where they come from, let's look at the basics of what that they need, all students will have the same issues.” (Michael, key informant)

“The way we operate within student services we have a really strong relationship with the student union, so that's AUTSA and it is probably, we are one of the few universities that have continued to have a student union in the face of what is now like an opt-out situation where it used to be compulsory for you to be part of the student union, I mean it

is not anymore, so we do not have to include them in the dialogue but we definitely do because we find we have more buy-in from students when we do that.” (Lara, key informant)

The findings presented in this theme highlight the diverse use of media by international students, the sources preferred to receive information and how these are typically selected according to students’ interests. Diverse use and knowledge of available supporting services also indicate the presence of simultaneous opportunities and challenges as experienced by international students. Key informants emphasised the importance of students’ own contribution and participation in solving challenges, though sufficient resources would be provided if these were needed.

4.2.4 Disaster (un)awareness

This theme, and its four supporting sub-themes, relates to how participants viewed information about disasters, the notion of preparedness and how a sense of safety and ease of living in Auckland informed international students’ perception of the ability of the New Zealand government and tertiary institutions to effectively respond to and provide support during and after a disaster. Eight of the ten interviewed international students and one of the key informants explicitly stated that they thought Auckland was a safe place to live, which subsequently influenced their positive perception of hazard and disaster management in Auckland and New Zealand. Two of the international students did not view Auckland as being a safer place to live compared to their home country.

“I think that people who come to New Zealand, the perception of New Zealand and to a degree Auckland, in particular, is that it is disaster safe and we got one of those reputations that people come here because it is safe and friendly.” (Lincoln, key informant)

“It is quite safe compared to back home I think.” (Lloyd, international student)

“To be honest I do not feel as safe as I am back home, because in there [back home] I am pretty sure that nothing could happen, for sure. But in here, it is true that Auckland is quite safe compared to Christchurch and things, but it still has the tendency of disaster happening, so I am kind of a little bit concerned about that.” (Angelina, international student)

Most of the international students perceived Auckland and New Zealand as a safe place to live, as the city and country were viewed as organised, proactive, and balanced in their approach to disaster management, even though none of the participants had any first-hand experiences with emergencies or disasters in New Zealand. Their positive view of the government and the tertiary institution’s ability to respond effectively and adequately did not come from specific knowledge of how the New Zealand government handles disaster and

emergency management resources but was assumed to be the case because of previous positive experiences with other governmental departments and support services. The international students' views on disasters and hazards, both specific to Auckland and in a more general sense, were reflective, rich, and represented a complex relationship involving how hazards were perceived as either something tangible or abstract, depending on the students' own prior experience with disasters in their home country. If students had prior experience with disasters in their home country, their perception of hazards in Auckland tended to be more concrete, whereas lack of previous experience made the presence of hazards and disasters in Auckland increasingly hypothetical.

"In my home country it is true that some part of the country is facing disaster, but the disaster is not that severe, that it could take many lives as in here, like in here [Auckland, New Zealand] I heard of the earthquake and the tendency of tsunami happening, so I guess that the disaster is a lot worse than in my country." (Angelina, international student)

"I only read about what to do when disasters happen, but nothing, sorry, how to avoid disaster, not what to do [emphasis added] about the disaster." (Dick, international student)

"If it threatens your life and others life I think it is a hazard for me or if it has the potential to hurt me or the people around me." (Jack, international student)

The diversity expressed by international students in the way hazards and disasters were perceived influenced the understanding of preparedness, with some of the international students viewing preparedness as unattainable, while others did not worry about it because of the assumed safety of living in Auckland.

"You cannot predict what is going to happen, so you really can't be ready for it." (Danny, international student)

"The flood close to the Auckland harbour [March 2018], and when I look at the photos and videos the flood is up to here [ankles], it's like come on its nothing." (Jack, international student)

"My guess is I don't think it is really that hard – the safety system here is very good so I do not worry about that." (Dick, international student)

When asked about their awareness of preparedness and emergency planning from the New Zealand government and the tertiary institution, international students emphasised the need for more information related to the existence of governmental practices and what plans were in place to support and assist them if a disaster were to occur. In contrast, key informants from the tertiary institution saw the availability and accessibility of emergency and disaster information as being adequate, without overwhelming students with information.

"I really think it is important for AUT or at least [the] New Zealand scholarship office [at AUT] to provide an emergency or disaster workshop before the arrival of new students." (Stuart, international student)

"We are very cautious about information overload that students have, so some of it is common sense and obviously we want our students to know what to do in the face of a disaster but given that that is a very significant but very slight I guess concern we do not tend to bombard them with that information." (Lara, key informant)

In one way or another however, the international students did not perceive the present level of information about disaster preparedness and awareness as sufficient and thus expressed a need to increase information in this field. One suggestion to raise and improve the awareness of disaster and emergency preparedness, as stated by the international students themselves, would be for the tertiary institution to facilitate interdisciplinary workshops. The provision of interdisciplinary workshops was seen to provide an avenue for all students (domestic and international) to gain information and awareness about the process of disaster preparedness, mitigation, response, and recovery efforts.

"It has to be collaborative approach [...] like I said an interdisciplinary approach, I think everybody, at least there have to be workshops in the university and it has to be across all the disciplines ... everybody has to be involved in this." (Danny, international student)

"If the school or the government could make any clear announcement or procedure on how we could know if something will happen, like if they have any source of information that we could access." (Angelina, international student)

The knowledge that existed about disaster and emergency procedures amongst the international students primarily related to the mandatory fire protocols found around the tertiary institutions' three campuses or signs found in public spaces, though one of the international students expressed a sense of more awareness of disaster and emergency procedures because of the person's area of studies (i.e., emergency and disaster management).

"I am aware of these evacuations signs, how to exit a building and how to make people aware of a disaster, for example if there was a fire alarm." (Larry, international student)

"On the streets there might be a sign that says go this for, this way if there is a tsunami and they tell you about things that might be able to happen in New Zealand for example, might know if there is a storm coming, so you, they will tell you what you have to keep in your house and where you have to be and if that happens you need to do this." (Dorothy, international student)

"I do not think other international students have the same advantages as me [when asked about disaster awareness and procedures]." (Stuart, international student)

Comments related to the sub-theme of feeling *"(un)Prepared"* amongst international students showed a range of understanding about who to contact or where to go to seek assistance if a disaster were to occur. Most of the international students stated that the International Student Office at the tertiary institution would be their likely point of contact, though

a few said they would either first reach out to their social network, had not given it much thought, or did not know who to contact.

“Contact my university first [AUT], like my ISO [international student office] because they would be the first to concern what would happen to me, and they definitely could provide help.” (Angelina, international student)

“I would reach out to the friend I am staying with and the owner at this place as they are the only two people I know before I came here, yeah so I think it would be both of them and the university.” (Danny, international student)

“I do not know, I haven’t really thought about this.” (Eleanor, international student)

The findings in this theme draw attention to the diversity in international students’ perception of hazards, disasters, preparedness, and awareness of disaster and emergency information. Because Auckland was generally viewed as a safe place to live, in combination with previous positive contact with the New Zealand government and the tertiary institution, an underlying assumption amongst the international students was that the government and the tertiary institution would be able to provide sufficient and adequate support in the event of a disaster. International students predominantly trusted the ability of the tertiary institution to provide help in the event of a disaster, which is positive but also emphasises the importance of the tertiary institution honouring this trust by ensuring that adequate support will be provided to international students’ in the event of a disaster.

4.3 Chapter summary

The narrative presented in this chapter has highlighted the essence of four major themes, and within these themes the presence of vulnerability and capacities in international students through proxies of experienced challenges, measures to support well-being, seeking information and support, and awareness about disasters. Challenges related to language barriers, belonging and socialising were the most commonly experienced and may become an amplified vulnerability in the event of a disaster. However, it was also clear that international students were aware of striking a balance between academic studies and social life, and mindful that belonging to social groups contributed to their well-being. Key informants expressed knowledge about the challenges in supporting international students, though existing information about the provision of services was understood to be adequate. Preparedness, hazards, and disasters were concepts that were perceived differently within the cohort of interviewed international students, though a consistent call was made for increased awareness and provision of information about disaster procedures and the efforts in place to support international students in the event of a disaster. Suggestions to improve existing DRR practices

as shared by international students focused on the provision of workshops and timely information (e.g., before international students arrive in the host country and consistently throughout their stay).

Chapter Five: Discussion

The purpose of this chapter is to discuss the findings from Chapter Four in relation to existing academic and grey literature. The chapter will further elaborate on implications for practice, and the strengths and limitations of the research.

5.1 Perception and communication

Current literature has emphasised culture, previous experiences, knowledge, and length of stay as some of the variables influencing individuals' perceptions of risks and hazards (Gaillard, 2008; Shepherd & van Vuuren, 2014; Sjöberg, 2000; Slovic, 1987). Findings from this study specifically support the notion that knowledge, previous experiences, and time of stay are influencing factors for international students' risk perceptions, with previous disaster experiences contributing to individuals' heightened risk perception. Limited length of stay in New Zealand and lack of knowledge about local hazards, disasters, and emergency procedures, adversely affected international students' risk perception. Differences in demographic factors in the interviewed international students suggested that age influenced the perception of risk, hazards, awareness of preparedness and risk communication. Being older seemed to increase international students' awareness of local hazards, risks, supporting services and ways to seek information. The diversity in age and length of stay as a factor influencing international students' perception of risk communication and hazards is interesting as it hints at the presence of increased vulnerability in younger or newly arrived migrants (Gares & Montz, 2014; Rashid & Gregory, 2014; Shepherd & van Vuuren, 2014; Wisner, 2004). Increased focus and support for these groups of international students (i.e., young and/or newly arrived) in the discourse about DRR and awareness of disaster-related information, both by government and tertiary institutions, is suggested as an avenue worth considering. Gender did not seem to be a significant factor influencing international students' risk perceptions or contributing to an increased sense of uncertainty in their ability to be prepared for, cope or adjust following a disaster. The finding that gender did not influence risk perception is interesting as previous studies by Fothergill et al., (1999) and Morrow (1999) suggested that the discrimination and inequity often experienced by women influence their risk perceptions and likelihood of preparedness, resulting in some women's decreased ability to cope and adjust in the event of a disaster.

Diverse perceptions of risks and hazards, and how previous experiences with disasters influenced international students' and key informants' understanding of disasters, are important

to incorporate and account for when designing risk communication for international students. Best practices in risk communication, as represented by Handmer (2000), Palttala and Vos (2012) and Sheppard, Janoske, and Liu (2012), have continuously stressed the need for dialogue, awareness of the audiences' risk perceptions and the need for information to be accessible in the diverse media sources used by the audience (Austin, Fisher Liu, & Jin, 2012; Glik, 2007). McIvor and Paton (2007) have emphasised that accessibility and passive information are not enough for effective risk communication. Audiences' inclusion and participation in risk communication and DRR efforts are important if the information given is to be trusted and followed. Experiences from the 2011 Brisbane flood in Australia and the 2011 Tōhoku earthquake in Japan emphasised this factor (Duncan, 2013; Shepherd & van Vuuren, 2014), as including migrant communities in risk communication during and following the flooding in Australia and the earthquake in Japan was a vital part of risk communication having the desired effect in hard to reach migrant communities. When the government and tertiary institutions design and implement risk communication and DRR practices, this should therefore be done in collaboration with target groups (e.g., international students or migrant communities), as noted by Sheppard et al., (2012) and McIvor and Paton (2007), changing the "reliance on passive presentation of information to people ... [towards] strategies for encouraging and sustaining positive discourse about hazards and their mitigation" (p. 79).

Other studies, like that of Paton, Smith, and Johnston (2005), further emphasised the importance of individuals' knowledge around disasters as having a positive contribution to efforts to prepare for or mitigate against adverse disastrous consequences, though Weichselgartner and Obersteiner (2002) argued that improving knowledge about disaster management does not in itself correlate to decreased vulnerability and increased preparedness. Nevertheless, the way knowledge and awareness about disasters and preparedness are being communicated in general and specifically by government bodies and the tertiary institution in this study, or simply the lack thereof, may result in less advantageous risk perceptions such as optimism bias (Greening & Dollinger, 1992), normalisation bias (Mileti & O'Brien, 1992), and negative outcome expectancy of preparedness (McIvor & Paton, 2007), all of which in some way or another were present among the interviewed international students. Existing literature on risk perception (Greening & Dollinger, 1992; Sheppard et al., 2012; Sjöberg, 2000) has noted the importance of addressing biases in individuals' risk perceptions (e.g., optimism bias, normalisation bias, risk denial and negative outcome expectancy), to decrease "illusions of invulnerability" (Greening & Dollinger, 1992, p. 64). Ways to counter biases in risk perception nevertheless continue to be debated (Glik, 2007; Sheppard et al., 2012; Sjöberg, 2000), though

addressing potential misperceptions through dialogue and inclusion in risk communication and DRR efforts are two approaches likely to counter the presence of risk perception biases (McIvor & Paton, 2007; Paton et al., 2005; Shepherd & van Vuuren, 2014). The varying perceptions of hazards, risks, and disasters as found in this study support existing findings, highlighting the challenges faced by governments and tertiary institutions when trying to ensure that migrant communities (e.g., international students) are included in local DRR practices.

An interesting discrepancy was found between international students' perceived feeling of safety in Auckland, and their emphasis on the need for more information and knowledge about plans, practices, and efforts in place to support, and help them cope during and following a disaster. In this study, the government acknowledged the need for more collaborative provision of information for migrant communities, whereas the tertiary institution viewed the existing information about disaster and emergency policies and plans as adequate. The divergent views on the availability and suitability of information by international students' and key informants may pose challenges for effective risk communication before, during and following a disaster. Existing literature by Vu et al., (2009) following the 2005 Hurricane Katrina in the US, and Shepherd and van Vuuren (2014) in connection with the 2011 Brisbane flood in Australia, supports the findings in this study relating to migrant communities' experienced lack of information, even though authorities thought the provided risk communication and DRR information was adequate. The lack of clear communication, knowledge of where and how to seek assistance and exclusion from DRR efforts, as noted by Vu et al., (2009) and Shepherd and van Vuuren (2014), may force migrant communities (e.g., international students) to seek information through secondary sources, increasing the likelihood of misleading information or miscommunication. These issues (e.g., lack of trust, with inappropriate, irrelevant, or inefficient delivery of messages) are regularly stressed in the existing disaster literature to explain why risk communication fails (Marra, 1998; Palttala & Vos, 2012; Sheppard et al., 2012).

5.2 Vulnerability and capacities

Findings presented in this study indicate that language barriers, weak social support, and lack of knowledge of local supporting services pose as vulnerabilities experienced by international students and may amplify international students' experienced adversity in the event of a disaster. The findings in this study relating to international students' vulnerability support the existing literature, which emphasises the presence of language barriers, lack of knowledge of local supporting services, and weak social ties, as three likely factors increasing migrants vulnerability in the event of a disaster (Russell et al., 2010; Tompkins et al., 2009; Wang et al.,

2012). The presence of capacities in international students on the other hand also complemented findings in the current literature (Brown, 2009; Montgomery & McDowell, 2009; Russell et al., 2010), with self-efficiency and a pro-active knowledge about the importance of well-being, which were present amongst international students', being two of the strengths needed to overcome experienced challenges.

International students predominantly viewed Auckland and New Zealand in general as safe and secure places to live and study, which as noted by Tompkins et al., (2009) and Shepherd and van Vuuren (2014), may present a challenge and a vulnerability, in the sense that this can lead to misguided optimism about being safe and secure without acknowledging the presence of hazards present in New Zealand in general and Auckland in particular (e.g., volcanoes, flooding, earthquakes, tropical cyclones, and man-made hazards). The findings of the study further showed that international students' awareness about disaster and emergency practices related primarily to the knowledge of fire protocols and procedures in effect at the tertiary institution. However, it is unclear, as argued by Paton et al., (2005) and Johnston, Bebbington Chin-Diew Lai, Houghton, and Paton (1999), whether awareness of one aspect of disaster and emergency preparedness (e.g., fire protocols) correlates to increased preparedness for and awareness of other disasters and emergencies (e.g., earthquakes, storms, and water contamination). Key informants from the government stressed the need to co-develop DRR efforts with migrant communities, and the development of support to increase international students' independence and self-efficiency, areas argued by McEntire (2004) as important in relation to disaster preparedness and awareness. However, it has also been noted by Adamson and Arevalo (2017) and Kenney and Phibbs (2015) that a focus on increasing individuals' capacities is an unbalanced approach, if surrounding local and national support systems (governmental and non-governmental) are not in place to assist and contribute to the alleviation of experienced adverse consequences. It is thus important to appreciate, as supported by current literature (Elliott & Pais, 2006; Murphy, 2007; Pelling & High, 2005), that a community consists of individuals, though challenges to individuals' ability to effectively prepare for, cope, and adjust in the event of a disaster arise if individual capacities are not well-connected to the wider presence of other capacities and resources in a community (Aldrich & Meyer, 2014).

The diverse use and knowledge of existing supporting services amongst international students also indicates the presence of simultaneous capacities and vulnerability in the event of a disaster in the sense that an existing awareness and use of supporting services may increase

the likelihood of self-sought assistance, whereas a lack of knowledge and use of supporting services can obstruct the search for and use of these supporting services when required. The argument that an awareness and use of existing supporting services may decrease experienced adversity and thus increase the ability to cope and adjust effectively, is also stressed by other authors. McIvor and Paton (2007) and Paton et al., (2005) have presented arguments related to the importance of proactiveness as a positive sustaining factor in individual preparation for the consequences of disasters. Current academic and grey literature has also focused on decreasing migrants' vulnerability (AEM, 2016; Donner & Rodríguez, 2008; Guadagno, 2017; UNISDR, 2015; Wang et al., 2012), though it is important to balance this view. There needs to be an increased focus on appreciating migrants' capacities, as argued by Heijmans (2004) and Wisner (2004), to understand how these strengths can be used to encourage self-efficacy, proactiveness and inclusion in DRR. International students in this study emphasised a wish to be included in and made aware of disaster and emergency policies and plans, which supports findings by McEntire (2005), who stresses the need for promoting and empowering individuals' and communities' contribution to local DRR.

5.3 Migrant-inclusive disaster risk reduction

The increased focus on community inclusion in DRR by academia is also aligned with current changes in the practical field of disaster and emergency management, where a renewed focus on community engagement, inclusion, and preparedness have taken hold (Dufty, 2011; Kapucu, 2008; Murphy, 2007; Pearce, 2003; Webb & McEntire, 2008). The call for community inclusiveness in disaster and emergency management, with a specific need for increased migrant-inclusive DRR, has been acknowledged and implemented in Australia, Japan, and Norway. These countries are actively including migrants in local community DRR practices, decreasing language barriers while using the strengths migrants possess to the benefit of local communities' DRR efforts (Duncan, 2013; Guadagno, 2015; Guadagno, 2017). The findings from this study, and how international students themselves seek to be included and to contribute, support practical experiences in Australia, Japan, and Norway, showing that migrants have an important role to play in the design and implementation of local DRR practices. Even though an articulation of the need for increased emphasis on individual and communities' responsibilities in preparing for or recovering from disaster has occurred amongst academia and practitioners, there are still barriers to include migrants in DRR efforts (Duncan, 2013; Shepherd & van Vuuren, 2014; Twigg, 2015). Some of the barriers relate to complacency, biases in risk perception and cultural and language barriers (Duncan, 2013; Kapucu, 2008;

Wang & Kapucu, 2007; Shepherd & van Vuuren, 2014). Because international students perceived Auckland and New Zealand as organised, orderly, and safe places to live, this may further pose a challenge to their inclusion in local DRR efforts as they may not perceive their own responsibilities for taking proactive measures towards increasing their own awareness, preparedness, and ability to cope and adjust following a potential disaster (Handmer, 2000; Paton et al., 2005; Wang & Kapucu, 2007).

Even though challenges exist in ensuring the inclusion of migrants in DRR, it is important to break with the historic and still present top-down approach when designing and implementing DRR and disseminating information about risk and hazards (Bankoff, 2001; Duncan, 2013; McEntire, 2012; Wisner, 2016). Guadagno (2015) and Twigg (2015) have argued that if local DRR efforts are to have any long-lasting impact and value for a given community (e.g., migrants and international students), DRR practices need to be co-created, implemented, and sustained by communities themselves in mutual coordination with governments and other stakeholders (e.g., non-governmental organisations). Empowering communities to participate and contribute in the creation and development of DRR by leveraging local knowledge or using participatory mapping as noted by Cronin et al., (2004) and Delica-Willison and Gaillard (2012), are two avenues helpful in creating and sustaining awareness and implementation of DRR within communities, because communities' ownership of DRR contributions and recommendations becomes explicit. Following the recommendations that participatory mapping and local knowledge can be positive aspects for community-inclusive DRR, it is worth considering these as avenues for increasing the presence of migrant communities (e.g., international students) in local DRR efforts. Migrants' local knowledge of communities (Guadagno, 2015), bilingual resources (Shepherd & van Vuuren, 2014) and strong social support (Vu et al., 2009) are just three likely areas of migrants' capacities that could directly impact local DRR efforts by supporting their inclusion in existing local governmental and non-governmental DRR practices.

5.4 Implications for practice

The findings from this study have contributed to a better understanding of the vulnerability and capacities of international students in the face of disasters, highlighting areas of actions where government agencies and tertiary institutions can better address the needs of international students in existing emergency and DRR practices, plans and policies. Areas of potential improvement resulting from this study have been informed by participants themselves and through analysis of data.

An area for improvement in present DRR practices and awareness about disaster and emergency policies and plans would be to have a stronger explicit governmental focus on inclusion of short-term migrants in DRR efforts, with both the government and tertiary institutions needing to co-create and include migrant communities (e.g., international students) in the presentation and implementation of risk communication and DRR practices. Leveraging international students' bilingual resources in the dissemination of information and creation of local DRR practices may help create trust while reaching migrant audiences that would not otherwise have been reached using existing risk communication and DRR efforts. International students themselves have also indicated the need for tertiary institutions to provide workshops for students to raise the awareness of DRR, local hazards, how to prepare for disasters, and how to get plans in place to support the needs of students in the event of a disaster. Another recommendation in line with the provision of workshops would be to support and encourage the development of a student-led organisation focused on creating awareness about and participation in DRR efforts; for students, by students. Existing student organisations, such as tertiary institutions' student councils, could also be leveraged to highlight the need for increased awareness and student participation in DRR practices in society and within tertiary institutions.

A key informant noted behavioural change to be a major governmental aim to decrease vulnerability and strengthen capacities in individuals and communities. Although long-lasting behavioural change in short-term migrants may not be feasible, because of their limited stay in the host country, emphasising the need for a more proactive, dedicated, and compressed approach by the government and tertiary institutions, when seeking to include short-term migrants in local DRR efforts and awareness of disaster and emergency practices and plans. A final important recommendation is for the government and tertiary institutions to specifically discuss, elaborate, address and focus on the underlying root causes of international students' vulnerability (e.g., weak social ties, diverse risk perceptions, inaccessibility, language barriers, unawareness, and exclusion from local DRR practices), and how addressing these would reduce the challenges faced by international students both on a daily basis and in the event of a disaster.

5.5 Strengths and limitations of the study

The novelty of this research topic in the field of disaster research was both a strength and a limitation. The study shed light on an area that has not been well researched before, contributing to an increased understanding in the social science field of disaster research about the complexities of short-term migrants' vulnerability and capacities. A further strength was the

questions raised by this research, prompting the need for further research in this area, and will be elaborated further on in Chapter Six. Although the novelty of the research area was a strength, it also presented a limitation, relating to the paucity of literature focusing on international students and short-term migrants in a disaster context. This was a challenge when seeking to support the study's findings and create generalisations based on the findings. The limited literature on short-term migrants' specific vulnerability and capacities was offset to some extent by reading about vulnerability and capacities in migrants in general. A further strength of the research was the nature of it being a qualitative study, and how this contributed to rich, insightful data in an area of limited research (i.e., short-term migrants in the face of disasters).

Data collection ended when saturation of data was determined achieved by the researcher, though this decision was ultimately subjective. It is likely that future work could build on this study, contributing to and nuancing the findings of this research. The study's chosen qualitative descriptive methodology was further strengthened by transparency and rigour in the thematic analysis of collected data, involving keeping a reflective research journal throughout the study, member-checking preliminary findings with participants and peer-reviewing the generated themes and sub-themes to ensure the trustworthiness of findings. Another combined strength and limitation of the research was the broad scope of inclusion criteria for international students, as anyone above the age of 16, who was an international student and had been studying in New Zealand for between 3 and 24 months was eligible to participate. These broad inclusion criteria allowed for diversity in research participants, meaning that the findings were influenced by a variety of contexts, ages, and culturally related variables. One limitation noted though was in the wording of the inclusion criteria on the research advertisement, which meant that the eligibility criteria of residing and studying in Auckland could have been misinterpreted. Misinterpretation of the inclusion criteria may have excluded potential participants while including participants who had been in Auckland for less than 3 months because they intended to reside and study between 3 and 24 months.

Chapter Six: Conclusion

This final chapter of the dissertation presents the key outcomes of this study which addressed the research question “What are the vulnerability and capacities of international students living in Auckland, New Zealand, in the face of disasters?” while also elaborating on potential areas for future research. Four major themes and 15 sub-themes generated by thematically analysing collected data from interviews with ten international students and four key informants were: “Daily challenges”, “well-being”, “seeking information and support” and “disaster (un)awareness”.

The findings indicated that international students and key informants perceived risk and hazards differently. International students expressed a desire for more official information around local hazards, disasters, and preparedness, though key informants viewed the availability of existing information as adequate. International students commented that Auckland and New Zealand were safe and organised places to live, and this influenced most of the international students’ assumptions about the government’s and the tertiary institution’s ability to provide adequate support during and following a disaster. Further key points from this study relate to the diverse ways used by international students to overcome challenges experienced while studying and living in Auckland, and to ensure well-being and a sense of belonging. The creation of well-being and belonging are specific areas of importance in relation to individuals’ ability to prepare for, cope, and successively adjust during and following a disaster, and how a lack of well-being and/or sense of belonging may increase individuals’ vulnerability. The presence of well-being and belonging in international students indicated resources and capacities, though key informants also remarked on existing challenges when supporting and nurturing well-being and a sense of belonging in international students and migrant communities. The four generated themes and 15 sub-themes contribute to and advance the understanding of international students’ vulnerability and capacities in the face of disasters. The findings of this study adds to the existing body of knowledge in the social science field of disaster research, illuminating an area of research that has not been focused on before. It is hoped that findings from this study may be used to inform existing local DRR and emergency practices.

6.1 Areas for future research

Findings from this research have highlighted an area that has not been well-researched in the existing literature in the field of disaster and migration studies. As a result, this study represents an addition to the social science area of disaster research, contributing to a qualitative understanding of international students' vulnerability and capacities in the face of disasters. Future research in this field could look at reviewing how governments and tertiary institutions collaborate and coordinate DRR efforts, disaster response, and recovery, exploring how international students can become further included in local DRR practices and thus ensure that this group of short-term migrants are not neglected in the event of a disaster.

A more in-depth literature review of the diverse legal documents in relation to the context of disaster and emergency management in New Zealand could also be an interesting avenue for future research. A literature review may highlight areas needing clarification and legal responsibilities between local governments and tertiary institutions, to ensure that international students are being provided with, and are able to access the supporting services needed to cope successfully during disaster recovery. Another potential research topic of interest stemming from the findings in this study could be to elaborate on explicit case studies of how past disasters and emergencies were experienced by international students, exploring their level of preparedness, how they coped and adjusted, and what kind of adversity they experienced. The results of these case studies could then be correlated or contrasted with findings from this research, highlighting areas of strengths and vulnerability in international students and shedding further light on how international students' fare in the event of a disaster.

New research could also focus more specifically on vulnerability and capacities in international students, of certain cultural, age or ethnic groups, as the demographics of international students in this study were general rather than focused. This research could then look to address and increase our understanding of how variations in specific cultural, age or ethnic groups of international students or short-term migrants may influence a city's communities, affecting the existence of present emergency plans and disaster risk reduction practices. Avenues for student inclusion in DRR efforts (both domestic and international) are also worth considering in future research, exploring how students can become engaged in DRR practices, what enables student participation in DRR, and what may challenge it.

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Appendices

Appendix A: Ethics Approval

5 December 2017

Nadia Charania
Faculty of Health and Environmental Sciences

Dear Nadia

Re Ethics Application: **17/390 Vulnerability and capacities of international students in the face of disasters**

Thank you for providing evidence as requested, which satisfies the points raised by the Auckland University of Technology Ethics Committee (AUTEC).

Your ethics application has been approved for three years until 5 December 2020.

Standard Conditions of Approval

1. A progress report is due annually on the anniversary of the approval date, using form EA2, which is available online through <http://www.aut.ac.nz/researchethics>.
2. A final report is due at the expiration of the approval period, or, upon completion of project, using form EA3, which is available online through <http://www.aut.ac.nz/researchethics>.
3. Any amendments to the project must be approved by AUTEC prior to being implemented. Amendments can be requested using the EA2 form: <http://www.aut.ac.nz/researchethics>.
4. Any serious or unexpected adverse events must be reported to AUTEC Secretariat as a matter of priority.
5. Any unforeseen events that might affect continued ethical acceptability of the project should also be reported to the AUTEC Secretariat as a matter of priority.

Please quote the application number and title on all future correspondence related to this project.

AUTEC grants ethical approval only. If you require management approval for access for your research from another institution or organisation then you are responsible for obtaining it. You are reminded that it is your responsibility to ensure that the spelling and grammar of documents being provided to participants or external organisations is of a high standard.

For any enquiries, please contact ethics@aut.ac.nz

Yours sincerely,



Kate O'Connor
Executive Manager
Auckland University of Technology Ethics Committee

Cc: szp5748@autuni.ac.nz

Appendix B: Tools

a) Research advertisement for international students

LOOKING FOR RESEARCH PARTICIPANTS

(February-April 2018)

ARE YOU:

- 16 years of age or over?
- Enrolled as an international student at AUT?
- Living and studying in Auckland for 3-24 months?
- An English speaker?

If you answered yes, please consider participating in a research study focused on the *“vulnerability and capacities of international student in relation to disasters”*.

This study will be part of the qualifications to complete my post-graduate degree (Master of Emergency Management) at AUT. If you choose to take part in the research, a **semi-structured interview** will be undertaken of around **45-60 minutes**. Participation in the research is completely voluntary. During the interview, light snacks and/or refreshments will be provided.



If you would like more information or are interested in being part of the study, please contact:

Christian Thorup-Binger
e-mail: szp5748@autuni.ac.nz

b) Interview guides

b.1) International students

1. Build rapport
 - a. Tell me about yourself, studies, where are you from etc.
2. Demographic information (see appendix 3)
 - a. How do you financially support yourself (self-supported, scholarship etc.)?
3. How do you spend your free time?
 - a. Do you feel a sense of belonging / connected to any kind of social group?
 - i. Member of any organizations, sports, religious etc.?
 - b. What gives you energy?
 - i. Do you actively seek out things you may find interesting?
4. Where and how do you draw support in times of distress?
 - a. If you have any problems, do you keep these to yourself or discuss them with others?
 - i. With whom and how many do you discuss your problems with?
 - b. What does well-being mean to you?
 - i. How do you feel this in your daily routine?
 - ii. What would make you feel more like this?
5. What kind of challenges have you experienced (in its broadest sense) while living and studying in Auckland?
 - a. How was/wasn't these overcome?
6. Where do you get your news/information from?
7. What kind of previous experience have you had with disasters?
 - a. What are your perceptions of hazards?
 - i. Home country vs. Auckland, NZ
 - b. What type of hazards do you think could happen in Auckland?
 - i. How does this compare to your home country?
8. How safe from hazards (in its broadest sense) do you feel while living and studying in Auckland?
 - a. What would/wouldn't make you feel safer?
9. How do you think you would cope and adjust, if experiencing an emergency/disaster while studying in Auckland?
 - a. What would make it hard for you to cope with an emergency/disaster?
 - b. What would make it easier?
10. Do you think it easy to voice your opinion or thoughts (in general) while studying in Auckland, NZ?
 - a. What kind of contact have you had with Auckland City Council or other governmental organizations/representatives?
 - i. (if any) How would you describe this experience?
 - ii. Have you heard, or are you aware of any governmental or non-governmental support services provided to you as an international student? (elaborate)
 1. How would you think it could become easier to be aware of these, if they existed?
11. What is your understanding of disaster risk reduction?
 - a. Who would you contact and where would you go to receive help if you experience a disaster while in Auckland?
 - b. Are you aware of Auckland Civil Defence and who they are?

b.1.1) Demographic questions

For use by research member only

Study Participant Number: _____

Date: _____

1) Age at your last birthday: *(please circle one)*

- a. 16 - 25 years
- b. 26 - 35 years
- c. 36 - 45 years
- d. 46 - 55 years
- e. 56 years and over

2) Sex: *(please circle one)*

- a. Female
- b. Male
- c. Other *(please state)*: _____

3) What country do you come from?

(please state): _____

4) Ethnicity: *(please circle as many as apply)*

- a. Pacific Islander
- b. Asian
- c. Middle Eastern, Latin American, African
- d. European
- e. Other *(please state)*: _____

5) What language(s) do you currently speak and understand:

- a. English
- b. Other *(please state)*: _____

6) Place of residence in Auckland: *(please circle one)*

- a. Homestay
- b. University accommodation
- c. Other student accommodation not affiliated with the University
- d. Flatting

e. Apartment

f. Other (*please state*): _____

7) How long have you been in New Zealand for studies?

(*please state*): _____

8) Is this your first time studying abroad (*please circle one*)

a. Yes

b. No

b.2) Key informants (Auckland Emergency Management)

1. Build rapport
 - a. Tell me about your job, and how you came to work in this area.
 - b. Elaborate on research topic, with specific focus on international students as a sub-group of short-term migrants (defined as residing in Auckland between 3-24 months), so through this study, it is hoped to understand and explore this groups specific vulnerability and capacities. Findings which may inform practice.
2. What do you think migrants and international students' perceptions are of the hazardscape in Auckland?
 - a. What do you think influences their perceptions?
 - b. How do you think this varies from their perceptions in their home country?
3. What are your views of migrants and international students' vulnerability in the face of disasters?
 - a. What factors do you think influence their vulnerability?
4. What are your views of migrants and international students' capacities in the face of disasters?
 - a. What factors do you think influence their capacities?
5. What plans, policies and/or processes are in place to assist migrants and international students in relation to disasters while being in Auckland? (could examples of these be provided?)
6. How are the seven principles from the Auckland Thriving Communities Action plan 2014 included in the creation of emergency plans, to ensure they are relevant for local communities?
 - a. How are the actions and guiding principles as set out in the Sendai Framework for Disaster Risk Reduction 2015-2030 being incorporated in emergency planning for Auckland City, with respect to migrants? (please provide examples, if any)
 - b. What is your experience with engaging migrants in disaster risk reduction?
 - i. Are there any enablers or challenges?
 - c. How are disaster risk reduction plans developed and implemented in relation to the needs of migrants and international students?
 - i. How are they being included in the development?
 1. Why/why not, any enablers or challenges?
 2. What kind of strategies and actions would better address the needs of international students (short-term migrants) and/or engage them in emergency/disaster risk reduction planning?
7. Do you know if international students are eligible to receive governmental support following a disaster?
 - a. If yes, what kind?
 - b. If no, why would that be?
8. Do you have any additional comments, you would like to include?

Thank the interviewee for taking their time, participating in this interview, and sharing their knowledge.

b.3) Key Informants (Auckland University of Technology, International Student Office)

1. Build rapport
 - a. Tell me about your job, and how you came to work in this area.
2. Why does international students at Auckland University of Technology receive pastoral care?
 - a. What kind of support does this include?
 - b. When providing support, how is international students' cultural diversity, if any, being considered in relation to the context of New Zealand and Auckland?
3. Are you aware of any plans, policies and/or processes at AUT in place to address international student's needs before, during and after a disaster? (could examples of these be provided?)
 - a. If yes, please elaborate
 - b. If no, how come?
4. What factors, in general, do you think influence international students' vulnerability?
5. What factors, in general, do you think influence international students' capacities/strengths to cope in adversity?
6. How do you think the International Student Office would react and respond to meet the needs of international students if a domestic disaster were to occur in Auckland?
 - a. Do you think international students are aware of plans and processes in place to care for and provide support during/following a domestic disaster, while studying at AUT?
 - i. Why? (elaborate)
7. Do you know if international students are eligible to receive governmental support following a disaster?
 - a. If yes, what kind?
 - b. If no, why would that be?
8. Do you have any additional comments, you would like to include?

Thank the interviewee for taking their time, participating in this interview, and sharing their knowledge

b.4) Key Informants (Auckland University of Technology, Student Services)

1. Build rapport
 - a. Tell me about your job, and how you came to work in this area.
2. What are your views of students' vulnerability in the face of disasters?
 - b. What factors do you think influence their vulnerability?
3. What are your views of students' capacities in the face of disasters?
 - a. What factors do you think influence their capacities?
4. What internal plans, policies and/or processes at AUT are in place to assist students in relation to domestic disasters while studying in Auckland? (could examples of these be provided?)
 - a. Have these plans/processes ever been tested?
 - a. (if yes) What are lessons learned?
 - b. How do you think students become aware, if they not already are, of plans and processes in place to care for and provide support to them before, during and after an emergency/disaster?
 - a. How are existing emergency plans and processes at AUT being advertised to students, promoting avenues in place to support them if a domestic disaster where to occur?
 - c. How are emergency plans developed and implemented in relation to the needs of students?
 - i. How are they being included in the development of these plans?
 1. Why/why not, any enablers or challenges?
 2. What kind of strategies and actions would better address the needs of students (short-term migrants) and/or engage them in emergency planning?
5. Do you have any additional comments, you would like to include?

Thank the interviewee for taking their time, participating in this interview, and sharing their knowledge.

c) Participant Information Sheet

c.1) International students

Date Information Sheet Produced:

22. 10. 2017

Project Title

Vulnerability and capacities of international students in the face of disasters.

An Invitation

My name is Christian Thorup-Binger and I am studying a Master of Emergency Management at Auckland University of Technology (AUT). During my studies, I have become interested in understanding how and if international students, i.e. short-termed migrants, are being included in emergency planning, clarifying possible vulnerability and capacities in international students which may contribute to make emergency planning more relevant for this group.

I am therefore conducting this research, thus elaborating on this aspect of emergency management. Conducting the research will contribute to me obtaining the qualification of a postgraduate degree (Masters).

I hope that you will participate in this research, which will be of a confidential nature. The research is deemed to pose no conflict of interest. Whether you chose to participate or not will neither advantage nor disadvantage you, and your participation is completely voluntary.

If you want, you may receive a summary of the research findings, emphasizing as well that the research findings may be used in future publications and presentations.

What is the purpose of this research?

The main benefit in doing this research, is to make the primary researcher eligible to obtain a Masters qualification.

For you as the research participant, you are able if you so assent to in the Consent Form, to receive a summary of the research findings. Other benefits may also be an enhanced contextualized understanding of your vulnerability and capacities in face of potential disasters, which may make you less vulnerable going forward, if you chose to take proactive measures to mitigate your own vulnerability and strengthen any capacities.

A further benefit is the opportunity for you to voice your opinions about the research topic, thus contributing to the area of knowledge within this field of disaster research.

How was I identified and why am I being invited to participate in this research?

You may have seen flyers posted around AUT or been made aware of the research through informal international student networks I as the researcher am a part of, inviting international students to participate in this research, listing inclusion criteria such as being proficient in English, 16 years of age or older, studying at AUT and residing in Auckland for a period of 3-24 months. If you meet these criteria, and subsequently chose to contact me using the contact details provided in the flyer, you have been automatically considered for inclusion in the participation of this research.

It is only through your contact to me, that I am able to obtain any of your contact details, and these will be kept confidential, should you choose to participate in this research or not, or subsequently wishes to withdraw from the study. I am looking to interview between 6-8 international students, and the choice of whom to include in the research happens on a first come first serve basis.

How do I agree to participate in this research?

You agree to participate in this research by completing a Consent Form. This form will be provided to you at the beginning of any interview we may agree to conduct. The date and time for this interview will be decided in mutual collaboration between you and me, initiated by you contacting me (details at the end of this Sheet).

Before the interview commences, you will be asked to fill out two identical Consent Forms, one for you and one for me, i.e. the researcher, who will store this Form in a secure and confidential manner.

Your participation in this research is voluntary (it is your choice) and whether or not you choose to participate will neither advantage nor disadvantage you. You are able to withdraw from the study at any time. If you choose to withdraw from the study, then you will be offered the choice between having any data that is identifiable as belonging to you removed or allowing it to continue to be used. However, once the findings have been produced, removal of your data may not be possible.

What will happen in this research?

You will be asked to take part in an individual semi-structured interview, where I will ask you questions focused on understanding how you, as an international student, perceive hazards in Auckland, clarifying how your subjective vulnerability and capacities may contribute to your ability to cope and adjust during and following a disaster.

Because the interview is semi-structured, I have some pre-made questions around the topic that I will ask you, and that will help to guide the interview, keeping it relevant for the research. However, depending on your answers, I may decide to delve on these and ask you to elaborate on your thoughts.

A summary of the research findings will be provided to you, if you assent to this in the Consent Form, thus also understanding that findings may be used in future publications and presentations.

The interview will be audio-recorded, and thereafter transcribed. If you want to receive a copy of the transcribed interview, this will be provided, if you make me aware of this. Any requested amendments or changes to the transcription will be considered when analysing the collected data.

Where will the research take place?

Data collection for this research will take place in meeting rooms at one of AUT campuses. Location, either City, North or South, will be decided between me as the researcher and you as the participant.

What are the discomforts and risks?

The nature of this research is not deemed to pose any discomforts or risks to you as a participant. Information provided through your interview will be treated confidential and will only be used for this study and potential subsequently future publications and presentations.

If you wish to participate in this research and you meet the inclusion criteria, you will need to provide me with your contact details, so I can set a date and time for the proposed interview. Any contact details about you, and information shared during the interview, will be kept confidential.

How will discomforts and risks be alleviated?

If you experience any discomfort while taking part in this research, you are encouraged to let the researcher know, so the topic in question will not be pressed.

How will my privacy be protected?

Collection, analysing and usage of any data you as the participant may choose to share, will be treated confidential. After collection of the raw data, the information you have chosen to share will be assigned a random name, so as to disguise your identity in the final report, thus protecting your privacy.

What are the benefits?

The benefits of the conducted research, for me as the researcher, is to obtain a qualification (Master of Emergency Management), while also contributing to the field of knowledge within this area of disaster research.

For the research participant, you will if you chose so, receive a summary of the research findings. Other benefits of the research to you, may be an enhanced contextualized understanding of your vulnerability and capacities in face of potential disasters, which may make you less vulnerable, if you take proactive measures to mitigate vulnerability and strengthen any capacities.

What are the costs of participating in this research?

Participating in the interview does not pose any cost to you as a participant, besides the time taken to conduct the interview, which are estimated to take between 45-60 minutes. Light snacks and/or refreshments will be provided during the interview.

What opportunity do I have to consider this invitation?

You will have two weeks to consider if you want to participate in this research.

Will I receive feedback on the results of this research?

Yes, you will receive a summary of the research results, if you so choose (you must assent to this in the Consent Form). This summary will then subsequently be provided to you through your provided contact details, i.e. email. If you do not wish to receive this summary, please indicate this in the Consent Form.

What do I do if I have concerns about this research?

Any concerns regarding the nature of this project should be notified in the first instance to the Project Supervisor, Dr. Nadia Charania, nadia.charania@aut.ac.nz, +64 9 921 9999 ext 6796.

Concerns regarding the conduct of the research should be notified to the Executive Secretary of AUTEK, Kate O'Connor, ethics@aut.ac.nz, 921 9999 ext 6038.

Whom do I contact for further information about this research?

Please keep this Information Sheet for future reference about this research. You are also able to contact the research team as follows, if you want to know more:

Researcher Contact Details:

Christian Thorup-Binger
szp5748@autuni.ac.nz

Project Supervisor Contact Details:

Dr. Nadia Charania
nadia.charania@aut.ac.nz

Approved by the Auckland University of Technology Ethics Committee on 5 December 2017.

AUTEK Reference number 17/390

c.2) Key informants (Auckland Emergency Management)

Date Information Sheet Produced:

22. 10. 2017

Project Title

Vulnerability and capacities of international students in the face of disasters.

An Invitation

My name is Christian Thorup-Binger and I am studying a Master of Emergency Management at Auckland University of Technology (AUT). During my studies, I have become interested in understanding how and if international students, i.e. short-termed migrants, are being included in emergency planning, clarifying possible vulnerability and capacities in international students which may contribute to make emergency planning more relevant for this group.

I am therefore conducting this research, thus elaborating on this aspect of emergency management. Conducting the research will contribute to me obtaining the qualification of a postgraduate degree (Masters).

I hope that you will participate in this research, which will be of a confidential nature. The research is deemed to pose no conflict of interest. Whether you chose to participate or not will neither advantage nor disadvantage you, and your participation is completely voluntary.

If you want, you may receive a summary of the research findings, emphasizing as well that the research findings may be used in future publications and presentations.

What is the purpose of this research?

The main benefit in doing this research, is to make the primary researcher eligible to obtain a Masters qualification.

Research findings may contribute to make emergency planning more specific and relevant. You are therefore highly encouraged to participate in this research, as provision of your knowledge will be a valuable asset, both for me to obtain a postgraduate qualification, as well as clarifying any potential disparities between governmental emergency planning and the research topic.

You are able to receive a summary of the research findings, if you so assent to in the Consent Form. Findings from the research may inform emergency planning practice, thus increasing their contextual relevance.

A further benefit is the opportunity for you to voice your opinions about the research topic, thus contributing to the area of knowledge within this field of disaster research.

How was I identified and why am I being invited to participate in this research?

You have been identified, and subsequently invited, to take part in this interview, because of your perceived key informant knowledge of emergency management or resilience, from the perspective of the government, i.e. Auckland City Council. I am looking to interview 1-3 key informants with knowledge around emergency management and resilience, and whom chosen as key informants will be decided on a case by case basis by me as the researcher.

Your contact details have been provided through public available information and recommendations from the researcher's own network within emergency management.

How do I agree to participate in this research?

You agree to participate in this research by completing a Consent Form. This form will be provided to you at the beginning of any interview we may agree to conduct. The date and time for this interview will be decided

in mutual collaboration between you and me, initiated by me reaching out to you to inquire about your potential participation.

Before the interview commences, you will be asked to fill out two identical Consent Forms, one for you and one for me, i.e. the researcher, who will store this Form in a secure and confidential manner.

Your participation in this research is voluntary (it is your choice) and whether or not you choose to participate will neither advantage nor disadvantage you. You are able to withdraw from the study at any time. If you choose to withdraw from the study, then you will be offered the choice between having any data that is identifiable as belonging to you removed or allowing it to continue to be used. However, once the findings have been produced, removal of your data may not be possible.

What will happen in this research?

You will be asked to take part in an individual semi-structured interview, where I will ask you questions focused on understanding the government's perceptions (e.g., Auckland City Council) towards short-termed migrants, i.e. international students, vulnerability and capacities in the face of disasters. Clarifying if and how they are being included in existing emergency planning and their perceived ability to cope and adjust during and following a disaster.

Because the interview is semi-structured, I have some pre-made questions around the topic that I will ask you, and that will help to guide the interview, keeping it relevant for the research. However, depending on your answers, I may decide to delve on these and ask you to elaborate on your thoughts.

A summary of the research findings will be provided to you, if you assent to this, thus also understanding that findings may be used in future publications and presentations.

The interview will be audio-recorded, and thereafter transcribed. If you want to receive a copy of the transcribed interview, this will be provided, if you make me aware of this. Any requested amendments or changes to the transcription will be considered when analysing the collected data.

Where will the research take place?

Data collection for this research will take place at a time and place convenient to you, be it either in meeting rooms at Auckland University of Technology, your office, or other locations where data collection can occur in a somewhat confidential manner.

What are the discomforts and risks?

The nature of this research is not deemed to pose any discomforts or risks to you as a participant. Information provided through your interview will be treated confidential and will only be used for this study and potential subsequently future publications and presentations.

If you wish to participate in this research and you meet the inclusion criteria, i.e. being knowledgeable in the field of emergency planning or resilience from a government perspective, any contact details or information shared throughout the research will be kept confidential.

How will discomforts and risks be alleviated?

The research is not deemed to pose any discomforts or risk to you as a participant. However, if you experience any discomfort while taking part in this research, you are encouraged to let the researcher know, so the topic in question will not be pressed.

How will my privacy be protected?

Collection, analysing and usage of any data you as the participant may choose to share, will be treated confidential. However, because of the small pool of potential participants with knowledge around the topic of emergency management and resilience from a government perspective, i.e. Auckland City Council, and your

role as a government employee, the confidentiality of any shared information cannot be strictly upheld. However, all efforts will be made to treat your response in a confidential manner.

What are the benefits?

The benefits of the conducted research, for me as the researcher, is to obtain a qualification (Master of Emergency Management), while also contributing to the field of knowledge within this area of disaster research.

You will receive a summary of the research findings, if you so assent to in the Consent Form. Findings may lead to the key informants taking steps to enhance how the concerned group, i.e. international students, are being perceived by emergency actors, which may make emergency planning and response thus more relevant and valuable for the concerned group.

What are the costs of participating in this research?

Participating in the interview does not pose any cost to you as a participant, besides the time taken to conduct the interview, which are estimated to take between 45-60 minutes.

What opportunity do I have to consider this invitation?

You will have two weeks to consider if you want to participate in this research.

Will I receive feedback on the results of this research?

Yes, you will receive a summary of the research results, if you so choose (you must assent to this in the Consent Form). This summary will then subsequently be provided to you through your provided contact details, i.e. email. If you do not wish to receive this summary, please indicate this in the Consent Form.

What do I do if I have concerns about this research?

Any concerns regarding the nature of this project should be notified in the first instance to the Project Supervisor, Dr. Nadia Charania, nadia.charania@aut.ac.nz, +64 9 921 9999 ext 6796.

Concerns regarding the conduct of the research should be notified to the Executive Secretary of AUTEK, Kate O'Connor, ethics@aut.ac.nz, 921 9999 ext 6038.

Whom do I contact for further information about this research?

Please keep this Information Sheet for future reference about this research. You are also able to contact the research team as follows, if you want to know more:

Researcher Contact Details:

Christian Thorup-Binger
szp5748@autuni.ac.nz

Project Supervisor Contact Details:

Dr. Nadia Charania
nadia.charania@aut.ac.nz

Approved by the Auckland University of Technology Ethics Committee on 5 December 2017.

AUTEK Reference number 17/390

c.3) Key Informants (Auckland University of Technology)

Date Information Sheet Produced:

22. 10. 2017

Project Title

Vulnerability and capacities of international students in the face of disasters.

An Invitation

My name is Christian Thorup-Binger and I am studying a Master of Emergency Management at Auckland University of Technology (AUT). During my studies, I have become interested in understanding how and if international students, i.e. short-termed migrants, are being included in emergency planning, clarifying possible vulnerability and capacities in international students which may contribute to make emergency planning more relevant for this group.

I am therefore conducting this research, thus elaborating on this aspect of emergency management. Conducting the research will contribute to me obtaining the qualification of a postgraduate degree (Masters).

I hope that you will participate in this research, which will be of a confidential nature. The research is deemed to pose no conflict of interest. Whether you chose to participate or not will neither advantage nor disadvantage you, and your participation is completely voluntary.

If you want, you may receive a summary of the research findings, emphasizing as well that the research findings may be used in future publications and presentations.

What is the purpose of this research?

The main benefit in doing this research, is to make the primary researcher eligible to obtain a Masters qualification.

Research findings may contribute to make emergency planning more specific and relevant. You are therefore highly encouraged to participate in this research, as provision of your knowledge will be a valuable asset, both for me to obtain a postgraduate qualification, as well as clarifying any potential disparities between AUT's emergency planning and the research topic.

You are able to receive a summary of the research findings, if you so assent to in the Consent Form. Findings from the research may inform emergency planning practice, thus increasing their contextual relevance.

A further benefit is the opportunity for you to voice your opinions about the research topic, thus contributing to the area of knowledge within this field of disaster research.

How was I identified and why am I being invited to participate in this research?

You have been identified, and subsequently invited, to take part in this interview, because of your perceived key informant knowledge of international students studying at Auckland University of Technology, and or knowledge about internal emergency management plans/processes concerning students at Auckland University of Technology.

Your contact details have been provided through public available information and recommendations from the researcher's own network at Auckland University of Technology.

How do I agree to participate in this research?

You agree to participate in this research by completing a Consent Form. This form will be provided to you at the beginning of any interview we may agree to conduct. The date and time for this interview will be decided

in mutual collaboration between you and me, initiated by me reaching out to you to inquire about your potential participation.

Before the interview commences, you will be asked to fill out two identical Consent Forms, one for you and one for me, i.e. the researcher, who will store this Form in a secure and confidential manner.

Your participation in this research is voluntary (it is your choice) and whether or not you choose to participate will neither advantage nor disadvantage you. You are able to withdraw from the study at any time. If you choose to withdraw from the study, then you will be offered the choice between having any data that is identifiable as belonging to you removed or allowing it to continue to be used. However, once the findings have been produced, removal of your data may not be possible.

What will happen in this research?

You will be asked to take part in an individual semi-structured interview, where I will ask you questions focused on understanding Auckland University of Technology's perception of and support towards short-termed migrants, i.e. international students, vulnerability and capacities in the face of disasters. Clarifying if and how they are being included in existing emergency planning and their perceived ability to cope and adjust during and following a disaster.

Because the interview is semi-structured, I have some pre-made questions around the topic that I will ask you, and that will help to guide the interview, keeping it relevant for the research. However, depending on your answers, I may decide to delve on these and ask you to elaborate on your thoughts.

A summary of the research findings will be provided to you, if you assent to this, thus also understanding that findings may be used in future publications and presentations.

The interview will be audio-recorded, and thereafter transcribed. If you want to receive a copy of the transcribed interview, this will be provided, if you make me aware of this. Any requested amendments or changes to the transcription will be considered when analysing the collected data.

Where will the research take place?

Data collection for this research will take place at a time and place convenient to you at a meeting room in one of AUT campuses, be it City, North or South.

What are the discomforts and risks?

The nature of this research is not deemed to pose any discomforts or risks to you as a participant. Information provided through your interview will be treated confidential and will only be used for this study and potential subsequently future publications and presentations.

If you wish to participate in this research and you meet the inclusion criteria, i.e. being knowledgeable about international students studying at Auckland University of Technology and or internal emergency management plans and processes. Any contact details or information shared throughout the research will be kept confidential.

How will discomforts and risks be alleviated?

The research is not deemed to pose any discomforts or risk to you as a participant. However, if you experience any discomfort while taking part in this research, you are encouraged to let the researcher know, so the topic in question will not be pressed.

How will my privacy be protected?

Collection, analysing and usage of any data you as the participant may choose to share, will be treated confidential. However, because of the small pool of potential participants with knowledge around the topic of international students or emergency planning/processes at Auckland University of Technology, the

confidentiality of any shared information cannot be strictly upheld. However, all efforts will be made to treat your response in a confidential manner.

What are the benefits?

The benefits of the conducted research, for me as the researcher, is to obtain a qualification (Master of Emergency Management), while also contributing to the field of knowledge within this area of disaster research.

You will receive a summary of the research findings, if you so assent to in the Consent Form. Findings may lead to the key informants taking steps to enhance how the concerned group, i.e. international students, are being perceived by emergency actors, which may make emergency planning and response thus more relevant and valuable for the concerned group.

What are the costs of participating in this research?

Participating in the interview does not pose any cost to you as a participant, besides the time taken to conduct the interview, which are estimated to take between 45-60 minutes.

What opportunity do I have to consider this invitation?

You will have two weeks to consider if you want to participate in this research.

Will I receive feedback on the results of this research?

Yes, you will receive a summary of the research results, if you so choose (you must assent to this in the Consent Form). This summary will then subsequently be provided to you through your provided contact details, i.e. email. If you do not wish to receive this summary, please indicate this in the Consent Form.

What do I do if I have concerns about this research?

Any concerns regarding the nature of this project should be notified in the first instance to the Project Supervisor, Dr. Nadia Charania, nadia.charania@aut.ac.nz, +64 9 921 9999 ext 6796.

Concerns regarding the conduct of the research should be notified to the Executive Secretary of AUTEK, Kate O'Connor, ethics@aut.ac.nz, 921 9999 ext 6038.

Whom do I contact for further information about this research?

Please keep this Information Sheet for future reference about this research. You are also able to contact the research team as follows, if you want to know more:

Researcher Contact Details:

Christian Thorup-Binger
szp5748@autuni.ac.nz

Project Supervisor Contact Details:

Dr. Nadia Charania
nadia.charania@aut.ac.nz

Approved by the Auckland University of Technology Ethics Committee on 5 December 2017.

AUTEK Reference number 17/390

d) Consent form

Project title: *Vulnerability and capacities of international students in the face of disasters*

Project Supervisor: *Nadia Charania, nadia.charania@aut.ac.nz*

Researcher: *Christian Thorup-Binger, szp5748@autuni.ac.nz*

- I have read and understood the information provided about this research project in the Information Sheet dated 22. 10. 2017.
- I have had an opportunity to ask questions and to have them answered.
- I understand that notes will be taken during the interviews and that they will also be audio-taped and transcribed.
- I understand that research findings may be used for publications and presentations.
- I understand that taking part in this study is voluntary (my choice) and that I may withdraw from the study at any time without being disadvantaged in any way.
- I understand that if I withdraw from the study then I will be offered the choice between having any data that is identifiable as belonging to me removed or allowing it to continue to be used. However, once the findings have been produced, removal of my data may not be possible.
- I agree to take part in this research.
- I wish to receive a summary of the research findings (please tick one): Yes No

Participant's signature:

Participant's name:

Participant's Contact Details (if appropriate):

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Date:

Approved by the Auckland University of Technology Ethics Committee on 5 December 2017. AUTEC Reference number 17/390

Note: The Participant should retain a copy of this form.