Integrating Māori Perspectives into Community Resilience Frameworks for the Built Environment

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ABSTRACT

Many governments and organisations have attempted to construct frameworks for improving community resilience, particularly as related to the built environment. Many frameworks, globally and locally, take a large overview of society and miss the potential to incorporate cultural, social, and engineering practices followed by indigenous people. However, there is much to learn from the traditional practices of Māori that could directly improve community resilience after a disaster. To date, little research has worked on integrating Māori cultural views into resilience frameworks. Using survey and interview data investigating Māori cultural views on resilience and aspects of the built environment, five Māori values were identified to strengthen resilience. These values are mātauranga (knowledge), kotahitanga (unity), kaitiakitanga (guardianship), whakawhanaungatanga (relationships), and manākitanga (extending love). Further, communities can increase community cohesion and unity through adapting building and community layouts learned from observing traditional Māori practices, such as a central marae.

1   RESILIENCE

1.1 Existing resilience frameworks

Resilience frameworks have become a common method for addressing the complex effects of natural and man-made hazards (Rockefeller Foundation 2015, NIST 2016, Fielke 2018). Frameworks specific to improving the resilience of the built environment to natural hazards are undergoing development globally. Resilience frameworks are commonly multidisciplinary in nature, seeking to cover disaster impacts across technical, social, organisation, and economic sectors (Bruneau 2003, Renschler 2010, NIST 2016, CD 2019). While resilience frameworks have been developed to improve community response to a disaster, the framework outcomes can be inefficient for addressing all the diverse needs of a community. Resilience is a complex idea that is understood differently by individuals, societies, and communities (Southwick 2014, Hepburn 2022), and developed definitions and constructs may not best fit the needs of all cultures in a community (Cote 2012). Current resilience frameworks potentially embrace neoliberalism (Joseph 2013)

Paper 93

more than equity, favouring the privileged over the marginalised (Cote 2012, Uekusa 2018). Often the existing frameworks are constructed around the concept of bouncing back or bouncing forward (both concepts that further marginalise minority and poor communities) rather than on rebuilding an equitable society with improved well-being for everyone (Bahadur 2014, Hong 2021). Further, frameworks focus on preserving functionality through robust and resistant communities (Burton 2016). However, these frameworks risk preserving existing social, cultural, political, and economic barriers, greatly benefiting those with existing capital and further relegating already marginalised groups. Instead, resilience should be focused around improving equity and increasing well-being. Resilience frameworks should focus on adaption while preserving culture (Goldstein 2015).

1.2 Integrating cultural values into resilience definitions

Despite the many existing and developing resilience frameworks, there is yet to be a universally accepted definition of resilience. Definitions vary between disciplines, cultures, and communities, making it challenging to implement a one-size-fits-all approach for building community resilience (Cretney 2014, Aven 2011). However, while definitions of resilience remain in flux, it is critical to consult with various groups and cultures to make resilience definitions and frameworks inclusive, equitable, and achievable for all (Cote 2012, Mayer 2019). In particular, resilience frameworks must be fit for purpose within the community it is applied to. Incorporating local cultural and historical perspectives is potentially key to the successful implementation of a resilience framework and allow for better outcomes.

Past disasters in New Zealand have demonstrated various resilience attributes employed by Māori during the disaster recovery process. Following the 2011 Christchurch earthquake, the Māori community engaged in recovery efforts through community-led and iwi-led planning (Kenney 2014). The ability of Māori communities to engage in these recovery programmes and the implementation of Māori principles helped to successfully restore their communities. Māori communities employ cultural guardianship or kaitiakitanga over different regions, where iwi work to ensure the well-being of Māori and all others in the region during a disaster (Carter 2018). Post-disaster recovery can be significantly improved by implementing community-based programmes that strongly incorporate Māori cultural strengths and resources (Proctor 2014). However, there is little evidence that Māori principles have been incorporated into local or national civil defence plans throughout New Zealand. Proper incorporation and implementation of Māori principles at local and national levels are requisite for meeting obligations under the Sendai Framework for Disaster Risk Reduction 2015-2030 to "focus on local authority empowerment towards collaborating with indigenous communities to manage disaster risk" (UNISDR 2015).

This paper discusses a project focused on identifying and understanding Māori cultural values and attitudes towards resilience. The research in the report was completed in consultation with a Māori cultural advisor that ensured that all proper protocols for interacting with, surveying and interviewing Māori were followed. Further, one of the co-authors and key researchers on this project is of Māori Ngati Porou descent.

The project comprised a survey and series of interviews asking participants to self-identify the meaning of resilience and engage with different methods of implementing resilience within the built environment. This paper summarises the results focused on a Māori perspective of resilience and the method of implementing Māori practices into the built environment to improve resilience. The survey and interview development and results are discussed in section 2. Section 3 highlights the main findings of the survey and interview and how this can be incorporated into resilience frameworks and urban planning to improve overall community resilience in New Zealand.

2   MĀORI VALUES AND RESILIENCE

2.1 Survey

A survey was developed to establish how different ethnicities in New Zealand perceive resilience and the differences between the construction of traditional Māori communities and current western communities. The survey was developed in consultation with a Māori cultural advisor to ensure proper protocols and procedures were in place. In order to achieve this, the survey focussed on three key areas, namely: (1) defining resilience, (2) residential housing, and (3) community layouts.

Once the study received ethics approval from the Human Research Ethics Committee of the University of Waikato under HREC(HECS)2021#35, the survey was circulated via social media (Facebook and Linkedin), email contacts, as well as the University of Waikato Engineering Staff and Student email list. The survey targeted individuals in New Zealand who were familiar with resilience concepts and Māori buildings. The survey was available from 17 August to 9 September 2021, and 87 responses were collected. Of the 87 responses, 79 answered the question identifying their ethnicity, 33 (38%) identified as Māori, 31 (36%) as NZ European, and the remaining 23 (26%) as another ethnicity.

2.2 Survey insights: kotahitanga

The survey recorded results from Māori and non-Māori participants. A summary of the findings and comparison between the two groups is discussed by Boston et al. 2022. An overview of the Māori responses will be provided here.

2.2.1 Defining resilience

The first section of the survey asked participants to define resilience. This was asked in multiple ways to get a holistic view of how they perceive and implement resilience. First, participants were asked to define resilience as a single word, next, they were asked to provide three words that define community resilience, and finally, they were asked to rank different resilience attributes and traits from published works. There were between 22 and 26 people who responded to these questions and identified as Māori. Their responses helped to formulate a picture of important resilience values. When asked about defining resilience in general, many used words such as strength or toughness. Words such as adaptability, mana (authority), and mana motuhake (autonomy) were also used. With regards to community resilience, 61% of all the participants who answered the question and identified as Māori used the word kotahitanga (unity), unity, or togetherness.

The survey also asked participants to rank four networked adaptive capacities in the order of most importance. These capacities are economic development, social capital, information and communication, and community competence (Norris 2008). Of the four capacities, economic development was overwhelmingly considered to be the least important. Social capital and information and communication were both ranked the highest. In the survey, social capital was defined as the ability of individuals to access and use resources within social networks. Ranking social capital higher had a higher statistical correlation with the common community resilience definition of unity. These rankings were also supported by the interview findings discussed below, which valued the well-being of a social network over the well-being of the economy or the built environment as a whole.

2.2.2 Residential housing

The survey also asked questions to break down the relationships between the people of different cultures and the built environment. Participants were asked to respond to questions around a modern western home and a traditional Māori home (Figure 1). Participants provided the first word they would identify with the image. Māori participants used words such as identity, whānau, spirituality, history, and tradition to describe the wharenui. This contrasted with the view of the modern western style home, which was described in more

technical terms such as real estate, common, or expensive. Most Māori participants (14 of the 19 that responded) also stated that they believed the wharenui was the more resilient structure. Supporting statements included sentiments such as: "the wharenui is not just a mere bunch of wood and nails hammered together, it has a whole spiritual whare inside it. So double the strength" and "there is a sense of community". Other participants expressed similar statements around spirituality, unity, tradition, and community. It was also noted that while the community is also important in western society, networks are not as well developed.
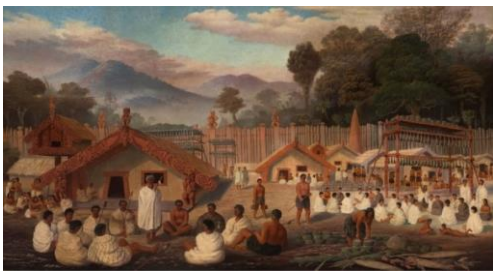

Figure 1 Images used in the survey for comparing built environments. The left images are the wharenui and traditional village, whereas the right images are a modern western home and residential neighbourhood (images from wiki commons)

2.2.3 Community layouts

The last part of the survey compared community layouts. The survey showed a picture of a traditional Māori village and a modern western community. The Māori village was described in terms such as community, collective, togetherness, whakawhanaungatanga (relationship) and whānau. In comparison, the modern residential neighbourhood was seen as sterile, crowded, and individual. The Māori village was also viewed as more resilient due to its collective and communal attributes. A key statement given was, "I feel like our ancestors were more involved and actively engaged in each other's lives. They were less occupied with the world, but also they were more of a community, so if something happened, then they would help each other immediately." This ties back to the ideas of community, family, tradition, and unity. The Māori village was seen as a place where people could come together and support each other. The supporting infrastructure for the Māori village was also considered to be less demanding and easier to maintain.

2.3 Interviews

In parallel to the survey, virtual interviews were undertaken with only people of Māori descent. Seven interviews were done virtually using the video conferencing software Zoom. The interviews took place during the week of 23 August 2021. The purpose of the interviews was to further examine the Māori worldview with regards to resilience, which was achieved by asking the following questions:

1. What do you think of when you hear the term resilience to a natural disaster?

2. Have you ever personally experienced a disaster?

3. How do you view disaster recovery and response in general?

4. What is important to you when developers are planning?

5. What would you expect from community and iwi leaders following a natural disaster?

6. How can the rest of the world learn from Māori?

The interviewees were comprised of Māori academics, tribal leaders, and community members. Interviews were recorded and later transcribed to determine the repeating themes around resilience.

2.4 Interview insights: He tāngata, he tāngata, he tāngata

Interviews were transcribed and coded to identify common trends, values and themes identified by the participants. Reviewing the interviews revealed common themes reflecting human values and family/community connections. One participant discussed coping with the uncomfortable when normality changes. Resilience is more of a mindset than a physical attribute; that mindset focuses on finding the calm in a storm. This calmness is created when you are around "people that love you for who you are, that respect you, that understand you". This sentiment ties to other responses that focused on family, friends and whānau.

As with the survey, there was no solid definition of resilience from the interviews, but there was commonality in attitudes toward disaster preparation and response. In reply to the interview question, "what do you think when you hear the term resilience to a natural disaster" some interviewees acknowledged the technical or built environment as a function of resilience. However, most had definitions that spanned beyond the physical and technical dimensions. A commonality between responses was viewing resilience in terms of coping with a disaster and doing so with family, friends, and whānau. To cope with a disaster, coping was viewed as a proactive approach (e.g. how prepared are they for the disaster) rather than a reactive (e.g. how well they respond). This is, in some ways, in contrast to traditional resilience methodologies focused on robustness and resistance. Rather than planning to prevent the disaster from happening, the interviewee focused on having a plan in place prior to the disaster to adapt and cope. Another participant talked about "pushing through" but also stopping, re-evaluating the conditions, and planning for a resolution.

Central in these discussions about coping, pushing through, and planning for recovery was taking care of family and whānau. Resilience and recovery are focused on ensuring the well-being of family and extending that beyond to other whānau connections, neighbours, and others in the community. This came before considerations of the built environment or community infrastructure. In discussing actions following a disaster, one interviewee stated, "My whānau would be my priority. Where are they? Are they okay? A few weeks later, so long as my whānau is okay, I'd probably be concerned about infrastructure continuity, business continuity, and remediation of housing and environmental damage." Another reflected similar sentiments, "first thing I would do is make sure my whānau is okay and that I was okay." A third expanded the idea to consider the whakapapa, "It's got to be the people. Ensuring the safety of the people – look after the whakapapa – check-in with the whakapapa." Moving beyond individual response, an iwi's response would be similar; one response indicated that their local iwi "help their people...their mandate is to help their people." This includes assessing immediate needs (such as health), secondary needs (food, shelter, medical requirements), and long-term needs (how long can they sustain themselves).

Further, some highlighted the cultural difference between a Western-dominated or European view of resilience and disaster recovery. This focused on the perception that Western-dominated resilience concentrated on economic recovery over individual and societal well-being. "The Western-dominated European view on natural disasters [looks] more at the economic impact of the situation and how to recover from it. Whereas Māori tend to be more focused on 'is your family alright? Is your hapū alright' and work more in those socioeconomic groups." This is the basis of a bottom-up approach to community resilience

where the power of recovery and decision making rests with the local community. Ensuring the well-being of the people is a priority over ensuring the well-being of community sectors such as the economy or infrastructure. This means that to ensure resilience equity, all socioeconomic groups within a community need to be provided with enough capital to cope with and successful recovery from a disaster; ideally, recovery to a higher level than before the disaster.

3 MĀORI PRACTICES TO IMPROVE RESILIENCE

3.1 Incorporating Māori cultural values

Based on the interview and survey findings, there are several aspects of Māori culture that should be incorporated into resilience definitions and frameworks (Figure 2). Most of these are applied at the individual and community level, separate from the built environment, but if successfully employed, they should help improve community resilience to disasters.

- Mātauranga Māori (Māori knowledge) should be incorporated. This is the knowledge that originates from Māori ancestors, including their worldview and perspective. Incorporating mātauranga Māori is focused on the taiao (environment) and can be used to bridge connections between two seemingly unconnected events. It recognises that there are connections in the environment that Māori ancestors discovered that can be useful for solving modern-day problems. Incorporating mātauranga Māori into a broader understanding of resilience increases understanding of hazards, disasters, and the responses of human communities.

- Kotahitanga. Māori culture has a collective focus instead of an individual focus. The culture focuses on family connections, whakapapa, and knowing the links back to your iwi. Adopting this perspective provides a broader viewpoint of who and what is important. It moves from focusing on the good or well-being of one person to the good of the wider community. This requires sacrifices but has the potential to build everyone up together through the joint investment of community capital.

- Kaitiakitanga, or guardianship. To incorporate this principle, it is important to know what it means to be a guardian and what is being protected.

- Whakawhanaungatanga, which means to have or nurture good relationships. This is more than understanding what the relationships are, but also understanding what kind of relationships they are and fostering the relationships.

- Manākitanga, showing hospitality and kindness or to extend aroha (love) to others, should be incorporated into all relationships. This is supported by both the interviews and the survey, with participants identifying aroha with resilience.
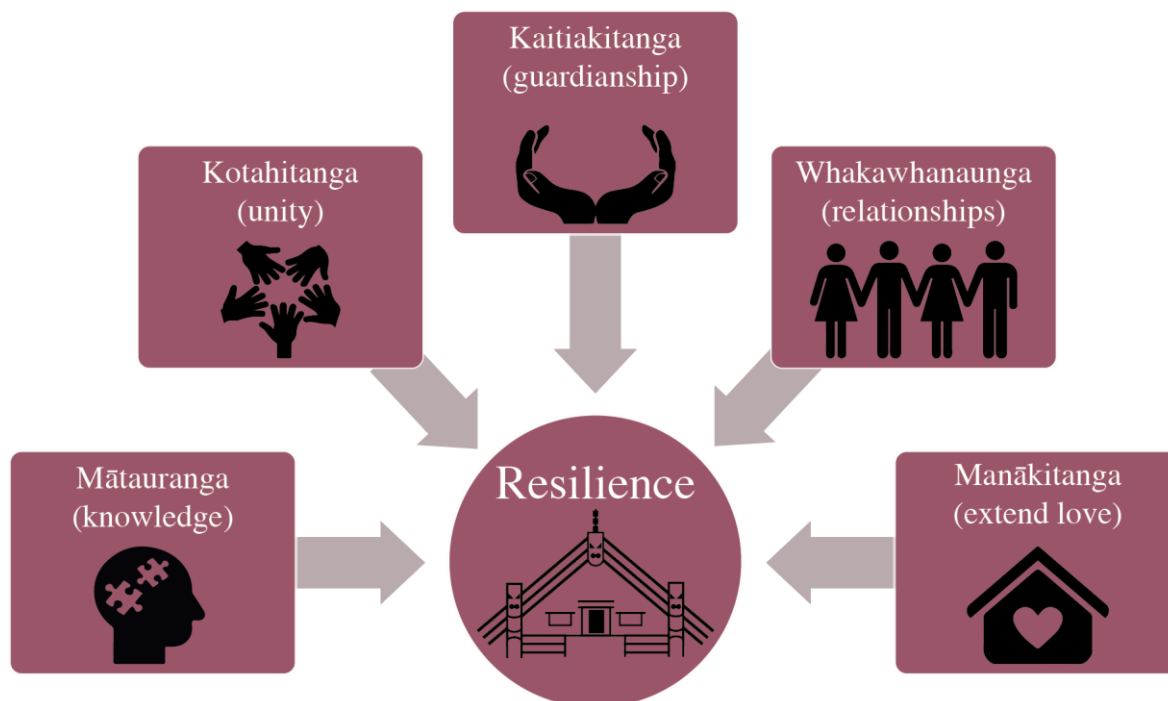
Figure 2 Māori cultural principles that can contribute to resilience

3.2 Marae as a place of refuge

Further recommendations from the surveys and interviews stressed the importance of the marae in disaster recovery and community well-being. The survey responses from Māori participants emphasised that traditional villages focused on the community and togetherness rather than on the individual. Traditional villages were often centred around the marae and wharenui, places where people could come together to form relationships, share food and lodging as needed, and in general, take care of each other. The interviews further highlighted the importance of the marae in establishing community and serving as the heart of recovery efforts. Shelter was identified as a key component of recovery, followed by water, food and warmth. Once these are in place, people will have the capacity to start making repairs to the rest of the community. One interviewee stressed that people need a place to feel safe during a disaster, and then they need to "check in on one another and establish needs. Mobilise the marae as a centre for support. Look towards the repair of affected homes and infrastructure. Learn and strengthen resources to become resilient. Reflect on appropriate kōrero tuku iho for tīpuna (oral histories from our ancestors)". Often the marae becomes default emergency shelters after a disaster due to their tradition of hospitality and generosity. However, marae may not be fully equipped to handle the large influx of people requiring assistance. Thus, it is necessary to incorporate marae into community emergency planning with adequate communication between civil defence, local councils and iwis. Plans need to guarantee that supplies will be adequate for the wider community. However, it should not be up to the local iwi alone to provide resources, but the wider community that will benefit from the marae support. Further, marae should be built to higher building standards to ensure the safety and continued functionality of the structure.

The concept of a marae can also be integrated into wider pākehā (New Zealand European) communities for better disaster resilience of Māori community members. Community centres, designed to function as a marae, can be added within communities to serve as a place to build whakawhanaunga and manākitanga within a community prior to a disaster. This will help establish a culture focused on the collective instead of the individual. Following the tradition of marae, community centres could be equipped with facilities, bedding, ablution blocks, food and water to host and cater for the masses. Establishing localised centres

following in the traditions of a marae will help people to know where to go during a disaster for shelter, food, water, and fellowship with their established community.

4   CONCLUSIONS

Resilience is a key trait for helping individuals and communities endure and recover from natural disasters. It is essential that definitions and frameworks used to implement resilience in practice integrate the local values of the communities they serve. This study utilised surveys and interviews to investigate some of the key attributes of resilience for Māori. Based on the interviews and survey data collected, there were five fundamental values that help define resilience, mātauranga, kotahitanga, kaitiakitanga, whakawhanaunga, and manākitanga. In addition to these values, it was also found that the marae is an important building block in Māori communities for improving the resilience of the built and social environment. The marae symbolically embeds the values described in the interviews and surveys. It also serves as a physical place for safety, refuge, and response after a disaster. Integrating these values into resilience frameworks will help to strengthen New Zealand's resilience to natural hazards.

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