Developing Indigenous Quantitative Methodology in New Zealand

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Introduction

This research is one of a number of projects within the National Science Challenge: Building better homes, towns and cities, which is part of a larger government funded strategy for New Zealand science and research. One of the platforms of the research is to ensure that Māori researchers, and research projects, address Māori needs and aspirations for better housing and communities. This study is a starting point, for exploring and developing a strategy, a methodology, to gather and analyse large-scale data, that will contribute to a better understanding of those Māori aspirations, particularly as a contribution to Māori wellbeing. The core of this study is the design of an Indigenous Quantitative Methodology to seek, gather, make sense of, and disseminate this information, within an overarching Kaupapa Māori ontology, epistemology and axiology.

Quantitative Research

Quantitative research, by, with and for Indigenous peoples is a contested domain (Chillisa, 2011; Smith, 1999), and there has been resistance from Indigenous scholars who tend to see qualitative methods as particularly well-aligned with their approach. For example, there is almost no mention of quantitative methods in the extensive emergent literature on Kaupapa Māori Research approaches. A major exception is Walter and Anderson, who provide the definitive discussion on Indigenous quantitative research. They state that, “For Indigenous peoples, especially in first world countries where population statistics powerfully influence government and social services, these numbers have become a foundational lens through which we, as Indigenous peoples, become known to our respective nation states and how we engage in many of our relationships with government actors” (2013, p. 7). In a related argument Kukutai and Walter (2015) lay down a foundation in developing Indigenous statistics, which they argue must recognise: geographic diversity; cultural diversity; other ways to know Indigenous peoples; the need for mutual capability building; Indigenous decision making, and the need to meet in what they refer to as ‘the recognition space’.

Walter & Anderson argue that there are several common deficiencies in the way statistics on Indigenous peoples are constructed, largely because these constructions are developed out of Western viewpoints, and controlled by Western officials. The resulting data contributes further to pejorative and judgemental perceptions of Indigenous realities and experiences. They note that quantitative research and data may be developed and utilised to empower, rather than merely define, Indigenous peoples, if it is underpinned by a cultural framework. This ensures that the resulting data contributes to culturally-appropriate understandings of Indigenous realities and experiences. Thus, the ‘power of data’ can be mobilised to support (or refine) Indigenous objectivies. Further, they urge Indigenous researchers to develop quantitative methodologies that are culturally grounded and appropriate. This in turn involves the development of methods around how, why, when and where data is gathered, and how that data is interpreted. They exhort Indigenous quantitative researchers to acknowledge and understand the ways that academic research is situated, noting that, “qualitative methodologies tend to focus on small or localised objectives, and to examine them more deeply” (2013, p. 10). However, quantitative research, “abstracts, and allow researchers to draw from local context,
standardizes it... and delivers it to a central point of calculation”, which may “miss complexities, and downplay the importance of ‘place’ that is so important to many Indigenous peoples (2013, p. 11). Walter and Anderson conclude that, “Indigenous quantitative research is in essence quantitative research framed and developed from an indigenous, socially positioned epistemological, ontological, and axiological perspective... approaching quantitative research from an Indigenous frame is a methodological process that acknowledges our... presence in contemporary global society, and does not assume that a movement toward modernity is a move away from Indigeneity” (2013, p. 17). This paper, and the resulting study, will build on these foundations and contribute to the founding Indigenous quantitative research literature.

**Sociology of Māori & Housing**

Maori housing needs to be set within the framework of New Zealand society more generally. When the country was colonised, through signing the Treaty of Waitangi in 1840, it was formally annexed by the British. Since then, Māori have gone from owning all their lands, the foundations of their economic and social well-being, to being marginalised in contemporary society. Māori are over-represented amongst the most disadvantaged social statistics. The loss of land, through the military and political actions of successive New Zealand governments are well recorded (Orange, 2015; Stokes, 1992; Walker, 1990), and the consequences continue to impact on Māori society (Henry, 2012), not least in terms of housing.

For rural Māori, housing was sometimes poorly constructed and maintained, with consequent health risks. It usually consisted of small clusters of houses around a Marae (community centre), which was most-often located in rural, tribal homelands, or on the margins of urban areas. There was a fluidity of membership amongst dwellers in these houses, and they were often linked to the local environment through gardens and the gathering of traditional Māori foods in adjacent areas. However, the shift of a significant proportion of Māori population to urban areas, in the post World War II era, has exacerbated Maori housing problems. Aspirations are no longer as easily established. Studies have shown that there is often an interest in the design of future housing which allows fluidity of movement and sufficient capacity to also accommodate the wider whānau. Maintaining links between traditional, tribal Marae, by urban Māori, can be expensive, especially when considerable distances are involved. Thus, there has been a prolific growth in urban Marae, particularly associated with churches, schools, tertiary institutes, and social service providers, and these fill a vital role for many Māori (Henry, 2015). Moreover, the Maori population has differentiated, with the rise of a Māori middle class, as evidenced in income distribution by Iwi in recent Census data (Census,2013). This may have led to different views of household formation, and subsequent needs and aspirations.

There is clearly an increasing interest in, and demand for Papakāinga¹, and Marae-based housing (Palmer, 2017; Kepa at al, 2015), amongst these, those Māori near retirement, who seek to reconnect with their ‘tribal roots’, and Iwi living in or near urban areas, e.g. Ngāti Pākenga in the Bay of Plenty, Ngāi Tahu in Christchurch, and Ngāti Whātua in Auckland. For younger Māori, the same level of interest in returning to the tribal homelands may be hampered by difficulties of securing employment, and access to higher education. The interest in Marae-based housing may also be mediated by household structure, and likely future patterns of whānau formation, e.g. ‘baby-boomers’ aging and requiring more care, and increasing proportions of smaller families. Future research will need to consider design features and facilities appropriate to such changing circumstances. In sum, Māori housing aspirations are

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¹ Glossed as: original home, home base, village, communal Māori land, [www.maoridictionary.co.nz](http://www.maoridictionary.co.nz)
likely more varied than some years ago, and so parameters need to be established, since little is systematically known about those aspirations. Further information is also required about the ‘supply side’, for example, access to, and use of Māori-owned and urban land, capacity around existing Marae, the legal and financial requirements, as well as financial assistance. Programmes such as Kiwi Build, an ambitious, government initiative to build 100,000 new houses, to ameliorate New Zealand’s housing shortage, and make available ‘affordable housing’ has been beset by problems from the outset. However, increasingly tribes are focusing on building issues, and at the gathering of the Iwi Chairs Forum at Waitangi in January 2019, a commitment was made to build 250 houses, with appropriate support from government.

In summary, there has been a steady stream of housing studies, stretching back over the last century, which incorporate Māori data. A few, primarily qualitative, have probed more deeply into Māori experience, and most recently, looking at papakāinga. Taken together, these studies are further evidence that data about Māori and housing tends to highlight the negative. In recent years, research for, with and by Māori have yielded findings that focus on Māori values, and aspirations. However, on the basis of the majority of these studies, we might conclude that Māori dwell in in a perpetual state of disadvantage. This literature review has yielded few relevant, and up-to-date studies of Maori housing aspirations, although secondary analysis of existing data-sets, and consequent reports have provided information that can inform the construction of a new study of this nature, which is clearly required.

A Māori Indigenous Quantitative Methodology

This paper offers a model for an Indigenous Quantitative Methodology, grounded in Kaupapa Māori. Incorporating the principles that reflect the ontology, epistemology and axiology of the researchers and participants, requires an understanding of the Kaupapa Māori Research paradigm, which is embedded in Māori history and culture. The literature and survey of existing data and databases suggests that there is a place for such a methodology and study. This is particularly given the impetus by Māori scholars for research that recognises and acknowledges Māori knowledge systems (mātauranga Māori), and the long history of colonial expropriation and diminution of Māori knowledge.

Māori have consistently called for recognition that their sovereignty was not relinquished upon signing the Treaty of Waitangi, and their consequent right to self-determination has been undermined by the colonial experience. In the late 20th Century, growing discontent from Māori resulted in activism and protest, which heralded what Walker (1990) has termed the Māori Renaissance, underpinning the cultural and linguistic revival of Māori since the 1970s. Alongside this, there emerged an Indigenous approach to knowledge creation termed Kaupapa Māori (Smith, 2003), about which it has been stated that its “meanings are embedded in Māori culture. It literally means the Māori way or agenda… encapsulated in a Māori world-view or cosmology” (Henry and Pene, 2001, p.236). They argue that Kaupapa Māori is both a set of philosophical beliefs, and social practices (tikanga), which, in combination, emphasise the connection between mind, body and spirit. Taken together, these ethics inform traditional Māori ontology, and assumptions about human nature (Henare, 2001). Thus, traditional Māori ethics and philosophy also drive Māori epistemology.

The contemporary use of kaupapa Māori continues to be imbued with these values and beliefs… Over the past two decades the Māori Renaissance, has engendered an environment in which Māori intellectuals have begun to challenge Western models of knowing and knowledge-construction (Henry and Pene, 2001:242). On this view, Kaupapa Maori incorporates philosophical beliefs and social practices, such as whanaungatanga (kinship), kotahitanga (interdependence), wairuatanga (spiritual connection),
kaitiakitanga (stewardship), and manaakitanga (generosity), amongst others. “Taken together, these ethics inform traditional Maori ontology and assumptions about human nature. Traditional Maori ethics and philosophy also drive Maori epistemology. That is, to live according to tikanga Maori” (Henry, and Pene, p. 237). Thus, Kaupapa Maori methodology is the methods and procedures that are shaped by assumptions of ‘what is ‘real’ and ‘what is true’, “which in turn shapes our perceptions of what is ‘science’ and how we do it” (op. cit, p. 237).

Kaupapa Māori research has evolved as a growing body of literature since the 1980s, in the face of the dominant Eurocentric knowledge-systems (Cram, 1993; Smith, 1997; Sueffert, 1997). A growing body of studies have developed the ontology, epistemology and methodology of Kaupapa Māori Research (Bishop, 2005; Henry & Pene, 2001), and a set of research methods and procedures, underpinned by Māori ethical principles and values ( Smith, 1999, 2012). Therefore, the methodology and methods adopted for this study are a “reflection of the researcher’s values and beliefs about truth, reality and existence, and the consequent knowledge that can or should be gleaned” (Henry & Foley, 2018, p.213).

It is the authors’ contention that a large-scale, quantitative study of Māori perceptions and aspiration in relation to housing can, and in fact should, be informed by both Tikanga Māori and Kaupapa Māori (Henry, 2012). Therefore we draw these together, and apply both to the further development of a research project initiated for, with and by Māori. We begin with an exploration of the axiology, the values and ethics that will inform the research. Killiam defines axiology thus, “In research, axiology refers to what the researcher believes is valuable and ethical” (2013, p. 6). To do this, we draw on the work of Smith (1999), and the model of Kaupapa Māori Research Ethics that she has proposed.

The core values within Kaupapa Māori framework provide an axiological foundation, a code of conduct, for research, which Smith has articulated as:

<table>
<thead>
<tr>
<th>Āroha ki te tangata</th>
<th>Showing compassion to participants</th>
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<tr>
<td>Kanohi kītea</td>
<td>Being seen in person</td>
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<tr>
<td>Titiro, whakarongo, kōrero</td>
<td>Looking, listening, speaking with care</td>
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<tr>
<td>Manaaki ki te tangata</td>
<td>Giving hospitality to participants</td>
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<tr>
<td>Kia tūpato</td>
<td>Being cautious and careful</td>
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<td>Kaua e takahia te mana o te tangata</td>
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<tr>
<td>Kaua e māhaki</td>
<td>Not being offensive</td>
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Table 1: Kaupapa Māori Ethics, L. Smith, 1999, p. 13

Whilst some Kaupapa Māori researchers are adamant that only Māori can participate, others encourage outsiders to engage with Māori through working to understand the ‘other’ and develop “an inter-cultural discourse” (Ritchie, 1992: 109). One approach advocates that non-indigenous researchers are educated before, and as they carry out research, for example, by being mentored, learning the language, and through immersion in cultural protocols (Smith, 1999). Working on Kaupapa Māori research projects with Māori and non-Māori researchers, Henry and Pene found that,

These researchers reflect the kaupapa Māori ontology, with its emphasis on connection, interdependence, spirituality and guardianship. Their ethnicity, their Māoritanga or ‘Māori-ness’, is not as significant as their identification with the kaupapa, the objectives and processes of the research, and the ways that they enact and practice research as a set of ethics and values as well as methodological practices (2001:240).
At the core of Kaupapa Māori is the standpoint that ‘to be Māori’ is not a deficit, and affirming the importance of Māori holds the potential to leverage social and power and develop interventions for social transformation.

Another issue of relevance for quantitative research is that of data sovereignty, which is seen by Indigenous peoples and activists as critical when gathering data on their populations. The decolonization of data is seen by activists as a way to give power to indigenous people, as a means to determine who and how they should be counted, in ways that better reflect the interests, values and priorities of Indigenous populations. Given power over their own data, Indigenous peoples would be able to decide which data is gathered and disseminated, a decision typically made by government agencies. Te Mana Raraunga, the Māori Data Sovereignty Network, has created a Charter, which recognises data has strategic value for Māori. They propose the following purposes for Māori data sovereignty:

1. asserting Māori rights and interests in relation to data,
2. ensuring data for and about Māori can be safeguarded and protected,
3. requiring the quality and integrity of Māori data and its collection,
4. advocating for Māori involvement in the governance of data repositories,
5. supporting the development of Māori data infrastructure and security systems,
6. supporting the development of sustainable Māori digital businesses and innovations.

(Te Mana Raraunga, n.d.)

Taking into consideration these foundations of methodology, the ontology, epistemology and axiology of the Kaupapa Māori paradigm, and with regard to data sovereignty concerns, the following section articulates the proposed research design, which is shaped by Te Reo Māori.

A Kaupapa Māori Quantitative Research Model: Te Tatauranga Auaha

This model draws on Māori language and knowledge. Te tatauranga is translated as statistics, and auaha as creative and innovative. Thus, Te Tatauranga Auaha is glossed as a new and innovative form of statistical research. The development of the survey will comprise the following stages, which will be addressed individually below.

1. Bringing together research partners
2. Designing topics and questions
3. Distributing the survey
4. Analysing the data
5. Disseminating findings

The remainder of this paper details ways in which ‘surveys’ could produce quantitative information which is robust and generalizable, whilst based on careful collaborative approaches at each phase.

Bringing together research partners: Mahi Tahi

Whilst the bulk of funding for research about Māori is through governmental channels, a research partnership for this study must be founded on notions of Māori self-determination. Therefore, bringing together research partners, should be underpinned, in the first instance, by Māori, despite funding imperatives from government, tertiary or crown research entities. Mahi Tahi literally translates as working together. Therefore, a collaborative approach could be applied to bring together relevant parties from the outset, including scholars (Māori and non-Māori), Iwi, taura here, and community organisations. This process was exercised in the
development of the National Science Challenges, where researcher and stakeholder engagement occurred for two years before final proposals were submitted. The difference is that these gatherings would be initiated by Māori. Tribal representation could be facilitated through representation from the Iwi Chairs Forum, and Taura Here representation through Mātā Waka and urban Māori entities. For a study of Māori housing, community organisation like Ngā Aho: Māori in design and Matapihi, the Māori housing group, as well as national pantribal bodies like Māori Women’s Welfare League, and Te Mana Raraunga would be invited to participate.

Gatherings could be conducted along traditional Māori lines, including Hui and Wānanga, which has been referred to as a Māori College, and a system of higher teaching and learning of cosmology and history in traditional society (Whatahoro, 2011), and described as a research technique (Lee, 2009, Eruera, 2010), which Elder defines as “culture-specific fora in traditional meeting houses” (2013, p. 406). The major outcome of these gatherings would be the formulation of a collaborative agreement that articulated the relationships and accountabilities, goals and strategies, and governance and management of the research.

Designing topics and questions: Uiui\(^2\)

Kaupapa Māori Principles (Henry & Foley, 2018, p.217) could be applied in the development of research questions and topics:

- Research for, with and by Māori people (unless Māori decide otherwise): This study will be led by Māori researchers, but will include a non-Māori with expertise in the field, who share a commitment to the kaupapa of the research.
- Research that validates Māori language and culture: Where possible, Te Reo Māori will be used, in communications, and as a survey option. Tikanga Māori will inform all aspects of the survey design, that is, hui and wānanga will be held with partners to the collaborative agreement, and other relevant groups and individuals to explore and decide upon topics and questions.
- Research that empowers Māori people and delivers positive outcomes: Surveying Māori aspirations will require questions that are empowering. That is, the questions will be tested extensively across sample groups, prior to distribution, to ensure that they gather the appropriate information, but also are meaningful, that they elicit responses in a way that does not disadvantage or disempower participants, regardless of their level of literacy, or language skills, in Te Reo or English.

Distributing survey questionnaires: Tuari\(^3\)

Distribution of the survey will include a wide range of specific techniques, to complement the potential weaknesses of each method. For example:

- Mail-outs to recognised databases, e.g. the Māori Electoral Roll, comprising approximately 250,000 aged over 18. Whilst this is a large database, it misses those Māori on the General Roll, and is problematic because changes of address between elections may mean a high level of returned or lost surveys;
- Phone surveys, using a commercial database, which allows for proportional representation of potential participants, across age-group and location. This method does miss those Māori who do not own a landline;

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\(^2\) To investigate, examine, from [www.maoridictionary.co.nz](http://www.maoridictionary.co.nz)

\(^3\) To share, distribute, present, from [www.maoridictionary.co.nz](http://www.maoridictionary.co.nz)
• Online surveys, drawing on commercial databases, and social media snowballing. This method may be more useful for a younger demographic, and will not be relevant for those who do not have, or only limited access to the internet.

• In-person surveying. This method would involve collaboration with community organisations, and require training of community representatives, to deliver and collect the survey in the communities. This would allow a focus on specific areas, especially low-income, where other methods might not be as applicable. It also allows for capability building for community researchers. This was a particular successful tool used by the Tāmaki Regeneration Company to survey the population in Glen Innes preceding and after the urban regeneration project (TRC, 2016).

• Wānanga/focus groups with invited participants across a range of different demographic categories, e.g. single-parents, elders, social housing tenants, in a variety of geographic locations around the country.

Whilst this array of methods will ensure the widest range of responses, it is significantly more resource-intensive than any other survey method, except the national census, the responses for which are required by law, and therefore may generate antipathy. The following strategies draw on Smith’s (1999) ethical framework, which provides an elegant model for addressing a wide range of methodological issues that relate to more than just survey distribution. Each of these strategies emphasises an ethic of care that is encapsulated in the notion of manaakitanga.

Aroha ki te tangata: To show compassion to participants
Ensuring the survey is written, and spoken (through audio podcasts and videos) in a respectful fashion, and that the reasons for the survey are clearly articulated at the outset. Further, it is important that the questions reflect the values of Tikanga Māori. It is also important that potential participants recognise that this study fills a gap in our knowledge of Māori aspirations, and they are making an important contribution to that dearth of knowledge, and how that knowledge might be used for the betterment of Te Āo Māori.

Kanohi kitea: To be seen, and be present
Whilst it is impossible for a large-scale quantitative survey to fully achieve this principle. However, the ways that the survey is distributed, and information about it, can incorporate video and audio resources, so that potential participants can meet, and through social media website such as Twitter, Facebook and Instagram, interact with the researchers. This would be complemented by a series of Hui, in communities where local organisations, like Marae and Rūnanga, are distributing the survey.

Titiro, whakarongo, korero: Look, listen, speak with care
The survey sampling process will involve a range of different groups of Māori, and their responses and feedback will be taken into consideration before the large-scale survey is finalised and distributed. It is important to ensure that the final survey reflects Māori needs, as well as eliciting Māori aspirations.

Manaaki ki te tangata: Give hospitality to participants
In a large-scale survey, it will be impossible to give hospitality to all participants. However, the methodology will include funding community researchers, and community organisations

4 Hospitality, generosity, respect, from www.maoridictionary.co.nz
to conduct the study. Whilst it is an ethical requirement of new Zealand research, not to offer incentives to participate in research, there is also the potential to ask participants if there are any charities, or Māori organisations that they would contribute to if they could, and offer those organisations donations or support, on behalf of respondents.

**Kia tūpato: Be cautious and mindful**
At each point in the development and distribution of such a survey, consultation with appropriate academic and Kaupapa Māori experts will occur, to ensure that the survey is achieving its objectives, cultural and scholarly.

**Kaua e takahia te mana o te tangata: Do not trample on the mana of participants**
The survey will provide a range of ways that potential participants might engage with, and complete the survey. This will involve offering the survey in Te Reo Māori; making it available in both written, and audio format (for those who might struggle with a written format); distributing it by mail, online, telephone, and through community groups who will be invited to participate (and funded to assist), such as Marae, MWWL, and sports clubs in communities with strong Māori populations.

**Kaua e māhaki: Do not being offensive**
Piloting the study with a range of sample populations, e.g. kaumātua (elders), rangatahi (youth), rural/tribal and urban Māori, will ensure its content, layout and processes are mana-enhancing, rather than difficult to access, understand, and contribute to, or see potential benefits from.

The final stages of the research design, and flowing from these ethics of care, relates to how the data will be analysed, and who should be involved in the process, and the dissemination of the final outcomes.

**Analysing the data: Tātari**
Tikanga Māori will inform all aspects of the design, distribution and analysis of the survey and its findings, including consultation with relevant experts during the data analysis phase, incorporating collective thematic analysis. This is a data analysis tool inspired by notions of hui and wānanga, where groups, including researchers, participants and others with expertise in the field of data and statistical analysis engage in collective and collaborative sense-making.

This process will be complemented by standard statistical techniques for analysing, correlating and cross-tabulating large pools of data. In the case where statisticians are employed to undertake this work, where possible, they will be led by Māori statisticians, in the same collegial manner that all other aspects of the research are undertaken

**Disseminating findings: Pāho**
Like the data collection phase, this process will also be underpinned by Kaupapa Māori Principles, insofar as the usual scholarly outputs will be complimented by a suite of communications for the different types of audiences. These may include:
- Journal articles;
- Book chapters;

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5 Status, authority, prestige, from [www.maoridictionary.co.nz](http://www.maoridictionary.co.nz)
6 To sift, measure and analyse, from [www.maoridictionary.co.nz](http://www.maoridictionary.co.nz)
7 To broadcast, disseminate, from [www.maoridictionary.co.nz](http://www.maoridictionary.co.nz)
• Non-academic working papers, for dissemination of Hui and Wānanga around the country. This would include presentations to all stakeholder and community organisations that invite researchers to share the findings;
• Audio and video resources, including podcasts and vodcasts for online distribution;
• Social media, providing research summaries for platforms such as Facebook, Instagram, Reddit, Twitter, Pinterest, SnapChat, YouTube, Vimeo, Tumblr, Google+, LinkedIn, Academia.edu, and Research Gate.

Each of these methods has strengths and weaknesses as tools for communication. However, in combination, they provide the most exhaustive opportunities for connecting with Māori across the widest spectrum, and thereby, potential influence on Iwi, policy-makers, social support agencies, and the plethora of entities that are charged with working with and for Māori, to strengthen and empower Māori people and Te Āo Māori.

**Conclusion**

A study of this kind will contribute new knowledge, and better understanding of Māori aspirations, in this case around housing, but there is potential for such a methodology to be applied to a range of issues, where the data collected will contribute to wellbeing for Māori. Further, as stated from the outset, the paper, and the resulting study, will contribute to the literature on Indigenous Quantitative Research, as a robust, reliable and reputable technique for, with and by Indigenous people.

There are also implications for management theory and studies, around how research is conducted and applied to the management of Indigenous communities and aspirations. There has been damage inflicted on Māori through inadequate governance and implementation of data collection and usage, in the perpetuation of negative models and frames around Māori experience, and potential solutions. This paper invokes leadership, politically and in government agencies, to ameliorate that damage, and supports the core human values of justice, humanity, empathy and care for Māori.

**References**


Te Mana Raraunga. (n.d.) Māori Data Sovereignty Network Charter. Retrieved from: https://static1.squarespace.com/static/58e9b10f9de4bb8d1fb5e8bc/t/5913020d15cf7dde1df34482/1494417935052/Te+Mana+Raraunga+Charter+%28Final+%26+Approved%29.pdf


