

Te Pae Mahutonga and the Measurement of Community Capital in Regional Aotearoa New Zealand

JOHN RYKS^{††}
JONATHAN KILGOUR
JESSE WHITEHEAD
MOANA RARERE

Abstract

Regionally, iwi and hapū have limited influence over structural changes such as population decline, proximity to labour markets and ageing, and to some extent economic cycles. However, there is still considerable value in thinking about how relevant indicators might point to the regeneration and overall well-being of Māori communities. In this paper we present an exploratory framework that links Durie's Te Pae Mahutonga model of Māori well-being to the measurement of community capital. We use Te Pae Mahutonga as the basis for developing a number of key indicators for understanding Māori well-being in the regions and apply the framework and indicators to three regional settlements in Aotearoa New Zealand: Pōkeno, Huntly and Ōpōtiki.

The rural-to-urban migration of indigenous peoples during the twentieth century has been recognised as a worldwide phenomenon (Del Popolo et al., 2007; United Nations, 2007, 2010). Factors influencing this migration have included the dispossession of traditional lands, lack of employment opportunities in rural communities, mechanisation of agriculture, deterioration of traditional livelihoods and perceived better living opportunities in cities. However, many of those who move to urban areas also face significant disadvantages such as lack of employment, inadequate housing, racial discrimination and erosion of language, culture and identity (Gandhi & Freestone, 2008; Pestieau & Wallace, 2003; Robson & Harris, 2007; Sandercock, 2003).

^{††} John Ryks is the director of Aria Research Limited and a research associate at the National Institute of Demographic and Economic Analysis (NIDEA), University of Waikato. Email: ryks@waikato.ac.nz

For Māori, the migration from rural to urban areas accelerated following World War 2 and has been recognised as one of the most rapid internal migrations by a population globally (Barcham, 1998; Kukutai, 2011, 2014). This was partly due to concerted efforts by the New Zealand government to encourage Māori to move to urban centres to boost employment for post war industry. Policies and incentives included offers of accommodation, employment and additional social assistance (Barcham, 1998; Meredith, 2000). Both rural and urban Māori experienced significant disadvantage as a result of this migration and this disadvantage was compounded by government policies that had the effect of dispersing Māori families and discouraging Māori from speaking te reo in schools and workplaces. Such policies resulted in “the atrophy of traditional Māori social structures such as whānau (extended family) and led to a profound degradation of cultural, social and physical living environments” (Waa et al., 2014, 5). Today, both urban Māori and rural Māori experience poorer health outcomes compared with other New Zealanders, disproportionately feel the effects of economic recession, receive poorer education, and are less able to access quality housing (Robson & Harris, 2007).

As Ryks, Waa, and Pearson (2016) show, any discussion of the spatial distribution of the Māori population would not be complete without a deeper understanding of the distribution of mana whenua and mātāwaka. *Mana whenua* are those iwi (tribe) or hapū (sub-tribe) that traditionally inhabited an urban area and who retain mana (traditional authority) over the whenua (land). Mana whenua are often incorporated as legally recognised *rūnanga* (iwi councils), and in larger cities and across regions there may be more than one mana whenua iwi. *Mātāwaka* are non-mana whenua Māori migrants (and descendants) who have moved away from their traditional homes. Mātāwaka can be further disaggregated into those who continue to actively associate with their iwi (often called *taura* here) and those who, through decision or circumstance, no longer do so.

The mana whenua experience has largely been one of disenfranchisement from the material, social and political resources that enabled them to determine how to live and thrive in their communities. Over recent decades there has been some redress of these injustices and in many cases resources have been returned, although only a small proportion of what was held in pre-colonial times.

Towards an exploratory framework

Much has been written about the decline of smaller settlements and the factors affecting regional growth in Aotearoa New Zealand. (For a recent overview, see Spoonley, 2016.) Less has been written about how Māori are affected by regional-level change (although see Simmonds, Kukutai & Ryks, 2016), and how Māori well-being might be measured across different social, economic, environmental and cultural domains. While regionally, iwi and hapū have limited influence over structural changes such as population decline, proximity to labour markets, ageing and, to some extent, economic cycles, there is still considerable value in thinking about how relevant indicators might point to the regeneration and overall well-being of Māori communities. In this paper we present an exploratory framework that links Durie's Te Pae Mahutonga model of Māori well-being to the measurement of different types of community capital and infrastructure. We use this framework as the basis for developing a number of key indicators for understanding Māori well-being in the regions and apply the framework and indicators to three regional settlements in Aotearoa New Zealand: Pōkeno, Huntly and Ōpōtiki.

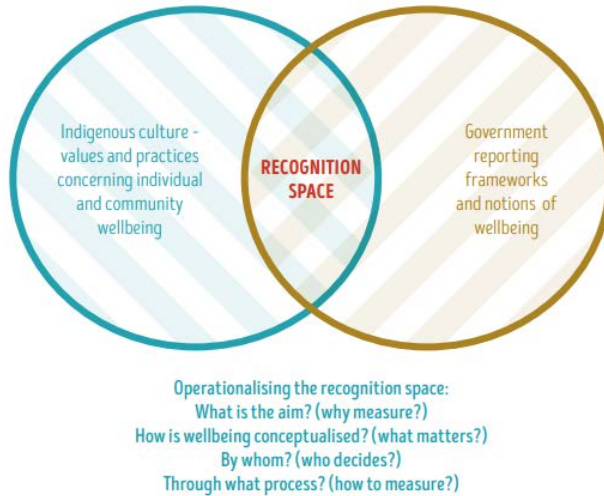
This project is part of a stream of research activities being undertaken within the National Science Challenge 11: Building Better Homes, Towns and Cities (Ministry of Business, Innovation and Employment, 2016). While it is beyond the scope of this paper to discuss the wider research stream in detail, two other research projects complement the indicator work introduced here – one qualitative project where we are working closely with iwi groups in the Pōkeno, Huntly and Ōpōtiki regions to understand iwi and community-level priorities for regional development, and the other the development of a data visualisation platform for iwi, where customised iwi and population-level data (the focus of which is decided by iwi) is able to be utilised by iwi groups to assist them in their decision-making. Combined, these three projects aim to give voice to how Māori well-being is measured regionally, something that is important at a time when the New Zealand government is exploring different approaches to understanding and measuring well-being (The Treasury, 2018) and the collection of Māori-specific data through official statistics is being questioned (Te Mana Raraunga, 2018).

In this way, our work is at the intersection of different interests and priorities in the measurement of Māori well-being.

Indigenous indicator frameworks and Taylor's (2008) recognition space

In 2004, the United Nations Permanent Forum on Indigenous Issues (UNPFII) highlighted that the United Nation's Millennium Development Goal (MDG) indicators should be assessed with a view to incorporating greater recognition of indigenous concerns, interests and interpretation of development and well-being (United Nations, 2004). The UNPFII went on to convene a series of workshops that focused on the need for a conceptual framework for rights-based indicators to ensure that data collected would be relevant to indigenous peoples. One of the issues identified in these workshops was the difficulty in identifying single indicators, given the diversity of indigenous societies. This work is separate to, but aligned with, work undertaken as part of the United Nations Declaration on the Rights of Indigenous People (UNDRIP) Indigenous Navigator project, which is specific to the documenting of violations and scheduled implementation of UNDRIP and uses structural, process and outcome indicators to determine the well-being of indigenous communities (UNSDN, 2016).

Taylor (2008) suggests that the UNPFII's concern with the appropriateness of the MDG indicators needs to extend to the potentially negative consequences of mainstream measures of indigenous well-being and that it "illustrates that a range of indigenous views on the appropriateness of various indicators are likely to exist and that, in all probability, these will stand outside, and therefore be excluded from more mainstream frameworks" (p. 112). In response to the single indicator issue identified at the UNPFII workshops and the potentially negative consequences of mainstream measures of indigenous well-being, Taylor (2008, p. 116) calls for a "recognition space" where policy makers and indigenous people can seek to build meaningful engagement and measurement (Figure 1).

Figure 1: Taylor's recognition space

Source: Taylor, 2008, p. 116

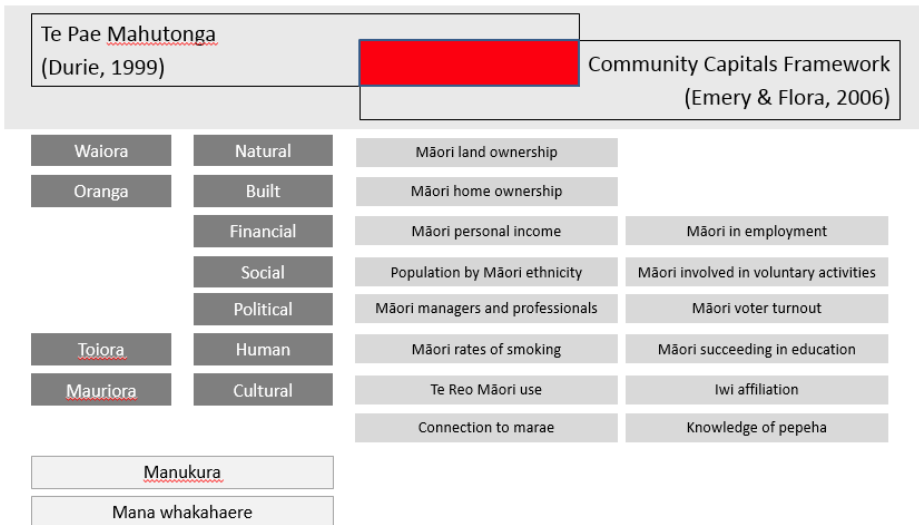
Taylor's recognition space provides a useful mechanism for thinking about how a measurement framework and appropriate indicators could be developed to understand Māori well-being. The development of these indicators could draw on relevant kaupapa Māori frameworks, but also be informed by government reporting frameworks and the collection of official statistics. This novel recognition space potentially provides a more accurate understanding of Māori well-being than either type of framework on its own.

Kukutai and Taylor (2012) suggest that there are ways where this recognition space can be further enhanced and give examples of where official social statistics can be 'indigenised' to better meet the needs of indigenous communities and organisations. They argue that research that attempts to operationalise the recognition space offers the opportunity for the 'historically fraught relationships between demography and indigenous development to be productively re-forged when indigenous peoples are placed at the centre, rather than the periphery, of the research process' (Kukutai & Taylor, 2012, p. 10).

This is where our exploratory research finds its place. Much like Kukutai and Taylor (2012), in which a city-specific framework for Tamaki Makaurau (Auckland), underpinned by five core Māori values, is presented,¹ we propose a regional-level framework that uses Durie's (1999)

Te Pae Mahutonga model of Māori well-being and Emery and Flora’s (2006) Community Capitals Framework (CCF), to present indicators for three smaller settlements. These models not only recognise Māori, but also place Māori at the centre through the use of indigenised social statistics. We propose aligning Te Pae Mahutonga and CCF to create a recognition space for Māori and wider community perspectives of well-being, and as a starting point for indicator development. Figure 2 shows how the domains of Te Pae Mahutonga might be mapped onto different levels of community capital and how both frameworks might be used to inform the development of relevant indicators (introduced in more detail later in this paper).

Figure 2: Aligning Te Pae Mahutonga and the Community Capitals Framework



Te Pae Mahutonga

Durie (1999) developed Te Pae Mahutonga as a framework for mental health, and health promotion, utilising Māori perspectives of well-being that were set against the imagery of the constellation known as Te Pae Mahutonga, or the Southern Cross. As a constellation, Te Pae Mahutonga is known for its use as a navigational aid, and as a tool to guide thinking about community well-being from a Māori perspective.

Te Pae Mahutonga consists of six stars: four forming a cross, and two pointing toward the cross formation. As a model of Māori well-being,

this depicts four goals of health promotion and two pointers that orient actors toward the four goals.

The four goals of Te Pae Mahutonga represent the aspirations and outcomes of mauriora, waiora, toiora and te oranga. *Mauriora* represents inner strength, vitality and identity, and recognises that there are many factors that determine cultural identity as a prerequisite to well-being. Consequently, deculturation is associated with poor health and acculturation with good health (Durie, 1999). *Waiora* represents external well-being in connection with the physical and spiritual environment (Durie, 1999). *Toiora* refers to lifestyles, and health and safety so that people have the capacity to live a full human experience. Unlike the previous two goals, toiora is largely dependent on personal behaviours and choices but recognises that environmental factors can affect these choices (Durie, 1999). *Te Oranga* acknowledges the sociocultural elements of well-being, as well as the goods and services that people use that contribute to well-being. Durie (1999) states this more succinctly as well-being being ‘dependent on the terms under which people participate in society’ (p. 6), but also having equitable access to those goods and services. Kearns, McCreanor and Witten (2005) posit that these four goals ‘loosely map into ideas of place as being a recursive relationship between places (Waiora and Toiora) and place-in-the-world (Mauriora and Te Oranga)’ (p. 197). While we do not explore this further, we highlight and acknowledge that this relates to other research that explores the distinctly Māori (and indigenous) philosophical notions of orienting oneself in relation to the environment (for example, see Mika, 2017; Panelli & Tipa, 2007; Smith, 2004; Spiller et al., 2017).

Durie (1999) describes ngā manukura and mana whakahaere as prerequisites that cut across all Te Pae Mahutonga domains. He describes *ngā manukura* as a combination of skills and influences exhibited by professionals and community leaders. Kearns et al. (2005, pp. 198–9) extend this further to acknowledge the responsibility of certain actors to work towards aspirations in health and well-being. *Mana whakahaere* refers to autonomy, or the ability of a population or community to have a level of autonomy and self-determination in promoting their own health. This is reflected in their ability to set their own priorities and aspirations (Durie, 1999). Table 1 explains each Te Pae Mahutonga domain in more detail.

Table 1 - Te Pae Mahutonga domains

Domain	Includes
Goals	
Mauriora Secure cultural identity	Access to language and knowledge Access to culture and cultural institutions Access to Māori economic resources Access to social resources Access to societal domains
Waiora Environmental protection	Water free from pollutants Clean air Abundant vegetation Healthy noise levels Opportunity to experience natural environment
Toiora Healthy lifestyles	Harm minimisation Targeted interventions Risk management Cultural relevance Positive development
Te oranga Participation in society	Participation in the economy, education, employment, knowledge society and decision-making
Pointers	
Ngā manukura Leadership	Community, health and tribal leadership Communication Alliances and collaboration
Mana whakahaere Autonomy	Control Recognition of group aspirations Relevant processes Sensible measures and indicators Capacity for self-governance

Source: Durie (1999, pp. 6–7).

Community Capitals Framework (CCF)

Emery and Flora (2006) introduce CCF as an analytical tool to understand community and economic development. It identifies seven components of community capital that, when balanced against each other, generate an upward, self-reinforcing, positive spiral of community and economic development, or a cumulative causation effect where assets grow or decline in self-reinforcing cycles (Emery & Flora, 2006; Flora et al., 2004;

Gutierrez-Montes, 2005). Consequently, where a negative spiral occurs (e.g. loss of jobs) and inadequate investment in capitals, then there is a self-reinforcing negative or downward spiral, highlighted by symptoms such as population decline, poor social cohesion and deteriorated infrastructure (Emery & Flora, 2006). This systems view of community development resonates with thinking about virtuous cycles of development, where human and economic development goes together to create positive regenerative development (Ranis, Steward, & Ramirez, 2007).

In a Māori development context, Smith et al. (2015) highlight divergent trajectories between Māori well-being and Māori development that echoes what Ranis et al. (2007) would call lopsided development (strong economic growth and negative human development).

The CCF comprises seven capitals: natural, financial, built, human, social, political and cultural. Three of these capitals make up the physical and material capitals – natural, financial and built. *Natural capital* includes the environment, natural beauty, landscape, waterways and air. *Financial capital* includes money, grants, philanthropy, funding and wealth. *Built capital* includes buildings, infrastructure, schools, roads, water systems and sewage systems.

The remaining four capitals are human, social, political and cultural. *Human capital* refers to people's skills, abilities, leadership and ability to access resources. Health is often included as a form of human capital as health is a key component of an individual's welfare and standard of living and has a direct influence on human capability and behaviour (Becker, 2007). *Social capital* refers to groups, organisations, networks, sense of belonging and bonds between people. *Political capital* includes connections to people in power, access to resources, leverage and influence. *Cultural capital* includes ethnicity, generations, histories, traditions, spirituality and heritage.

A place-based approach

To ground the development of our indicator framework and our use of Te Pae Mahutonga and CCF, our exploratory study is focused on three settlements in the North Island of Aotearoa New Zealand: Pōkeno, Huntly and Ōpōtiki. These settlements were chosen as they represent communities that are in different stages of economic and social

development, have a diverse and changing population, and continue to be important to Māori. All three settlements have changes or proposed changes to their economic infrastructure: Pōkeno has new housing development and business infrastructure; Huntly has the proposed decommissioning of its power station and the building of a nationally significant motorway; and Ōpōtiki has a proposal for harbour development.

Furthermore, all three settlements are within the rohe (boundaries) of iwi that have well-established iwi authorities: Pōkeno and Huntly have Waikato-Tainui, while Ōpōtiki has Te Whakatohea Māori Trust Board.

Pōkeno was an important site during the New Zealand Wars of the 19th century. The settlement later became a small rural hub, and then as a township that was bypassed from the country's main state highway in 1992, was held up as an example of a declining rural Aotearoa New Zealand. Since then, Pōkeno has been transformed with the development of a Chinese milk-processing plant and large-scale housing subdivisions as the Auckland commuter zone has extended to the area.

The impact of this transformation is clearly seen by the substantial change in Pōkeno's population size and structure. Although relatively small, Pōkeno has grown significantly over the past decade from a population of 1770 in 2006/07 to 2780 in 2016/17, an increase of 57 per cent (Statistics New Zealand, 2017a). Its population is projected to increase to around 5800 in 2028 (Statistics New Zealand, 2017a). The Māori ethnic group (MEG) residing in Pōkeno comprises nearly 15 per cent of the town's total residents.

Huntly is positioned in the central part of the Waikato District. Aotearoa New Zealand's main highway, State Highway 1, currently cuts through Huntly, making it a thoroughfare to Auckland city (approximately 95 kilometres) or Hamilton city (approximately 32 kilometres). However, population growth and economic development within the "golden triangle" has seen the Government invest heavily in the transport corridor through the development of the Waikato Expressway that aims to enhance the connection between Auckland, Waikato and Bay of Plenty. This transport corridor will eventually bypass Huntly with construction of the Huntly bypass, expected to be completed in 2020.

The Waikato River naturally delineates two demographically and socio-economically distinct communities within Huntly: Huntly West and

Huntly East. Together, Huntly's estimated resident population grew by 14.1 per cent between 2006/07 and 2016/17, from 7070 to 8070 (Statistics New Zealand, 2017a). The MEG represents nearly 45 per cent of Huntly's population.

Ōpōtiki is a small coastal town in the Eastern Bay of Plenty and serves as the main hub for the district of the same name. The town is also a vital link to one of the most remote areas of the North Island, the East Cape (State Highway 35), and to Gisborne via Waioeka Gorge (State Highway 2). In recent years, Ōpōtiki has seen greater investment in kiwifruit, harbour development and the commercialisation of a mussel farm (Whakatōhea Māori Trust Board, 2017). Overall, the population of Ōpōtiki district has declined, though somewhat irregularly over the past decade, from 9160 in 2006/07 to 9010 in 2016/17 (Statistics New Zealand, 2017a). Over half (approximately 55 per cent) of the population are Māori.

Like many other areas in New Zealand, all three settlements are ageing numerically, as more people survive to older ages, and structurally, as falling birth rates and reducing numbers at key reproductive ages deliver fewer babies into the base of the age structure. Our focus on Pōkeno, Huntly and Ōpōtiki as places of research interest extends to the wider research stream described earlier, where qualitative interviews are being undertaken with iwi and hapū groups, and a data visualisation platform is being developed alongside the indicator work presented here.

Selecting and using indicators

By using a conceptual framework that aligns Durie's (1999) Te Pae Mahutonga and Emery and Flora's (2006) CCF, it was possible to think about how relevant and available data could be mapped against the framework. The development of a suite of indicators required that several criteria be met. For this research, we employed a range of criteria to ensure that our approach was robust and reliable. Indicators needed to be:

- relevant to the social outcome or domain of interest– the indicator should be the most accurate statistic for measuring both the level and extent of change in the social outcome of interest, and it should adequately reflect what it is intended to measure (i.e. it should be valid)
- grounded in research– there should be sound evidence on key influences and factors affecting outcomes

- able to be disaggregated – ideally, it should be possible to break the data down by age, sex, socio-economic status, ethnicity, family or household type and region, so we can compare outcomes for different population groups
- consistent over time – the indicator should be able to be defined and measured consistently over time to enable the accurate monitoring of trends
- statistically sound – the indicator uses high-quality data and the method used to construct it is statistically robust
- timely– data should be collected and reported regularly to ensure indicators are providing up-to-date information (Ministry of Social Development, 2010).

More specifically, our selection of indicators needed to adequately represent and connect with all the domains of our conceptual framework. In some instances, such as the mauriora/cultural capital domain, there was sufficient available data to work with. In other outcome domains such as waiora/natural capital, there was less relevant data available, resulting in fewer indicators in these domains. This is something that we have identified as an area for future development.

The development of indicators is an iterative process. As new information becomes available and new data is released it may be possible to refine the type and number of indicators used. For this research it was expected that data from the 2018 New Zealand Census of Population and Dwellings would be used when available but as Te Mana Raraunga (the Māori Data Sovereignty Network) have pointed out, there are concerns about the validity and reliability of the results of the census for the Māori population and that Census 2018 may yet turn out to be the poorest quality enumeration of Māori in recent history due to the fact that “full or partial information has only been received for about 90 percent of individuals, compared with 94.5 percent for the 2013 Census” (Te Mana Raraunga, 2018). With these issues in mind, Table 2 presents our exploratory framework and shortlisted indicators. The table also illustrates the source of information for the data and the rationale for why each indicator was chosen.

Approach used to populate framework

Data used to populate the framework came from four sources; a Geographic Information Systems (GIS) shapefile of Māori land ownership was obtained from the Ministry of Justice; data on voter turnout in the Māori electorates of Hauraki-Waikato and Waiariki was obtained from the Electoral Commission; information about Māori knowledge of pepeha and connection to marae in the Waikato and Bay of Plenty regions came from Statistics New Zealand's first survey on Māori well-being, Te Kupenga; and data for all other indicators was sourced from the 2006 and 2013 censuses.

Table 2: Exploratory framework and shortlisted indicators

Te Pae Mahutonga Domain	Community capitals domain	Indicator (Source)	Why use this indicator?
Waiora - environmental protection	Natural capital	Māori land ownership (Ministry of Justice)	An increase in land owned by Māori may reflect land accorded through Treaty Settlements and therefore a new resource/asset for iwi and hapū at a regional level. Not likely to show major change over time.
Te Oranga - participation in society	Financial capital	Māori personal income (Census)	An increase in personal income for Māori may represent the opportunity to deliver a better quality of life and standard of living to individuals and whānau, and the community more widely.
	Built capital	Māori in employment (Census)	Paid work is a primary determinant of living standards for the great majority of New Zealanders. Paid work is also an important way for people to participate in society, attain social status and enjoy a sense of social connectedness.
		Māori home ownership (Census)	Home ownership is a good measure of wealth accumulation and housing is

Te Pae Mahutonga Domain	Community capitals domain	Indicator (Source)	Why use this indicator?
	<p data-bbox="362 360 442 414">Social capital</p> <p data-bbox="362 684 458 738">Political capital</p>	<p data-bbox="534 360 706 445">Population by Māori ethnic group (Census)</p> <p data-bbox="534 505 706 651">Māori involved in voluntary/unpaid activities (Census)</p> <p data-bbox="534 684 719 802">Māori managers and professionals (Census)</p> <p data-bbox="534 829 681 948">Māori voter turnout (Electoral Commission)</p>	<p data-bbox="753 278 1084 333">also shown to provide a range of social benefits.</p> <p data-bbox="753 360 1097 478">An increase in the Māori population for a region could suggest natural growth or Māori returning to the regions.</p> <p data-bbox="753 505 1103 651">An increase in participation in voluntary and unpaid activities is an indicator of increasing social capital. It may also relate to cultural obligations.</p> <p data-bbox="753 684 1053 769">Shows that Māori are influential in business and decision making.</p> <p data-bbox="753 829 1093 884">Shows willingness to engage and participate in civil society.</p>
Toiora - healthy lifestyles	Human capital	<p data-bbox="534 979 694 1064">Māori rates of smoking (Census)</p> <p data-bbox="534 1312 690 1430">Māori succeeding in education (Census)</p>	<p data-bbox="753 979 1103 1288">Smoking is measured because of its negative effects on health and because it is a major risk factor for many cancers and for respiratory and cardiovascular disease. Historically, rates of smoking for Māori are twice as high as the average overall. This indicator is a good proxy for Māori health in the region.</p> <p data-bbox="753 1312 1040 1430">Māori success in tertiary education is an important indicator of skill and knowledge acquisition.</p>
Mauriora - secure cultural identity	Cultural capital	<p data-bbox="534 1461 681 1543">Te reo Māori use (Census)</p> <p data-bbox="534 1607 690 1688">Connection to marae (Te Kupenga)</p>	<p data-bbox="753 1461 1068 1579">Māori language is central to Māori culture and an important aspect of cultural participation and identity.</p> <p data-bbox="753 1607 1009 1661">Indicates knowledge of ancestral marae and</p>

Te Pae Mahutonga Domain	Community capitals domain	Indicator (Source)	Why use this indicator?
			connection to it.
		Knowledge of iwi affiliation (Census)	An important measure of Māori identity
		Knowledge of pepeha (Te Kupenga)	Provides a good indicator of Māori identity by measuring knowledge of marae tipuna; maunga; awa, moana; hapū; tipuna, tupuna; waka

Unfortunately, the above data were not all available at the same spatial extent. Voter turnout information covered the Hauraki-Waikato and Waiariki Māori electorates, data from Te Kupenga covered the Waikato and Bay of Plenty regions, and Māori land ownership data and census data is available at Census Area Unit (CAU) level. While our analysis primarily focuses on the CAU level, it also incorporates this regional-level data. It must be noted that actual rates of voter turnout, knowledge of pepeha, and connection to marae is not specific to Pōkeno, Huntly and Ōpōtiki but rather the regions within which they are located.

The first Te Kupenga survey was carried out in 2013, so there is no 2006 comparison available for the indicators based on this data. The Māori land ownership indicator represents 2017 levels of Māori-owned land, and the change in size of Māori-owned land between 2006 and 2017. It does not measure change in ownership amongst Māori or whether Māori landowners in each area are mana whenua or mātāwaka. Although data on Māori voter turnout are available for the past two elections, they do not align with the dates of the past two censuses and so the results of this indicator in relation to other indicators should be interpreted with caution. The communities of Pōkeno and Ōpōtiki are located within a single CAU. However, Huntly is divided into Huntly East and Huntly West, so for the purposes of this study, we have combined census data from these two CAUs in order to represent Huntly as one settlement. While our framework can be used for the fine-grained analysis of settlements at the CAU level in most instances, results should be treated with caution in

areas where the MEG population is small. For these areas, regional analyses may be more accurate until additional data is made available or issues of undercounting are resolved. Appendix 1 provides more detailed information about how each indicator was used and the limitations of each indicator.

In terms of future reporting, the lack of a regular data series across most of the reported indicators means that it is not possible to update the indicators on a more frequent basis. Of the 14 reported indicators, 12 can be updated later this year through the release of the 2018 New Zealand Census of Population and Dwellings (albeit affected by the issues already mentioned), while voter turnout can be updated in 2020. It is unclear when information about Māori land ownership will be updated.

Limitations of the framework

The measurement framework presented here is an “environmental” or “state” indicator framework rather than representing an approach for measuring or evaluating specific initiatives. The framework is not a tool for measuring specific regional initiatives or policies and programmes. This is because there will be a number of other drivers contributing to Māori well-being in the regions, including the actions of Māori as individuals, whānau, hapū and iwi, and a wide range of social, economic and international factors.

There are limitations with our alignment of Te Pae Mahutonga and CCF. Te Pae Mahutonga was formulated as a high-level approach to understanding the health and well-being of Māori, whereas CCF was developed as an analytical tool to understand community development. We believe that this difference in purpose is a strength of our approach as both have a focus and interest in understanding and measuring community well-being. The use of Te Pae Mahutonga offers a Māori-specific focus on well-being while the use of CCF offers a fine-grained analysis of community development and regeneration.

Our alignment of Te Pae Mahutonga and CCF in Table 2 is not exact. For example, it could be argued that while the Māori rates of smoking indicator can be mapped to the Toiora domain of Te Pae Mahutonga, it is not an indicator of human capital. However, others (e.g. Becker, 2007) have long argued that health should be considered a form of

human capital alongside education, training and migration. In this sense, the Māori rates of smoking indicator is a good fit for our exploratory framework. There is also potential for other indicators to be added to the Toiora/human capital domain as new data becomes available. In other parts of the framework where we have stated that there is an absence of quality data for a particular indicator, we see this as a potential (and valid) gap in the collection of relevant information rather than a limitation of the combined frameworks.

What the indicators show

The results for all indicators and their change over time is displayed in Table 3. It shows change across each indicator between different time periods for Māori in each of our three case-study communities, as well as the overall national average for Māori. For Pōkeno, the population of Māori (in the MEG) increased from 2006 to 2013 (17.4 per cent compared with the national average increase of 5.9 per cent), and there was an increase in Māori reporting high levels of personal income (a 13.6 percentage point increase from 2006 to 2013 compared with an increase of 7.9 per cent increase nationally over the same period). In fact, more than half of the indicators in the Te Oranga domain (incorporating built, financial, social and political capital) showed an increase on 2006 levels. However, there have also been decreases in Māori home ownership (-12 per cent from 2006 to 2013 compared with -2 per cent nationally over the same period) and volunteering (-7.7 per cent from 2006 to 2013 compared with 0.4 per cent nationally over the same period). Furthermore, there was a decrease in more than half of the Toiora (human capital) and Mauriora (cultural capital) indicators during the same period – although it must be noted that for the knowledge of pepeha and connection to marae indicators, only 2013 data are currently available. Overall, of the indicators with 2006 and 2013 data available, less than half showed positive change which suggests that while some aspects of Te Oranga may have increased for Māori in Pōkeno, there has also been a decline across several key indicators between 2006 and 2013.

Table 3 – Indicators for Pōkeno, Huntly and Ōpōtiki compared with the national average

Indicator	Pōkeno	Huntly	Ōpōtiki	Aotearoa New Zealand
Te Pae Mahutonga domain: Waiora				
Community Capital domain: Natural				
Māori land ownership (hectares) *	2483	3767	17,720	1,413,403
% change between 2006 and 2017	1.5	3.4	0.07	5.0
Te Pae Mahutonga domain: Te Oranga				
Community Capital domain: Built, financial, social, political				
Population of Māori ethnicity	243	3021	2121	598,602
% change between 2006 and 2013	17.4	6.7	-11.4	5.9
Māori personal income (% in top bracket) **	27.1	12.0	9.7	18.1
% point difference between 2006 and 2013	13.6	5.0	4.9	7.9
Māori home ownership (%)	36.7	20.6	29.1	28.2
% point difference between 2006 and 2013	-12.0	-4.1	-3.6	-2.0
Māori involved in volunteer activities (%)	16.7	25.7	24.9	19.8
% point difference between 2006 and 2013	-7.7	1.0	-0.5	0.4
Māori managers and professionals (%)	22.6	20.9	27.4	29.5
% point difference between 2006 and 2013	3.3	1.1	1.1	3.9
Māori voter turnout ***	67.3	67.3	68.9	71.1
% point difference between 2014 and 2017	3.2	3.2	4.2	3.5
Te Pae Mahutonga domain: Toiora				
Community Capital domain: Human				
Māori who have never smoked (%)	48.0	37.1	37.4	44.2
% point difference between 2006 and 2013	-2.0	1.1	2.4	5.5
Māori in employment (%)	89.2	74.8	81.7	84.4
% point difference between 2006 and 2013	-7.2	-6.5	0.1	-4.6
Māori succeeding in education (%)	8.2	9.1	11.8	16.3
% point difference between 2006 and 2013	0.3	0.9	3.1	3.2

Indicator	Pōkeno	Huntly	Ōpōtiki	Aotearoa New Zealand
Te Pae Mahutonga domain Mauriora				
Cultural				
Iwi affiliation (%)	70.9	86.4	93.2	82.9
% point difference between 2006 and 2013	-8.1	-0.8	-0.9	-0.5
Te reo Māori use (%)	15.0	32.3	31.7	21.3
% point difference between 2006 and 2013	-5.3	-2.5	-0.5	-2.4
Knowledge of pepeha (%) ※	89.0	89.0	91.4	89.0
% point difference between 2006 and 2013	n/a	n/a	n/a	n/a
Connection to ancestral marae as tūrangawaewae – very strong (%) ※	71.6	71.6	73.0	67.1
% point difference between 2006 and 2013	n/a	n/a	n/a	n/a

* Hectares of Māori owned land within 20 km of each CAU.

** Results should be treated with caution as although incomes have increased with inflation and a higher minimum wage, the top income bracket has remained static across the 2006 and 2013 censuses.

*** Indicator is at the regional level (Hauraki-Waikato and Wairariki electorates) and for the 2014 and 2017 general elections.

※ Indicator is at the regional level (Waikato and Bay of Plenty regions) and based on results from the 2013 Te Kupenga survey.

In Huntly, the majority of indicators showed positive change. Five of the seven indicators in the Te Oranga domain increased, with the proportion of Māori involved in volunteer activities increasing 1 per cent from 2006 to 2013, and for 2013 being significantly higher than the national average (25.7 per cent versus 19.8 per cent, respectively). Two of the three indicators showed positive change from 2006 to 2013 in the Toiora domain, although 2013 levels were lower for all three indicators compared with the national average. Although rates of iwi affiliation and te reo use did decrease, this was at a similar level to national changes, and rates of both iwi affiliation and te reo use are higher in Huntly than the national average.

In Ōpōtiki, there was an increase in personal income levels from 2006 to 2013 (an increase of 4.9 per cent), the proportion of Māori managers and professionals (an increase of 1.1 per cent), and Māori voter turnout (an increase of 4.2 per cent for the region). However, most

indicators in Te Oranga decreased, and Ōpōtiki is the only of our case-study communities where the population of Māori in the MEG declined (by 11.4 per cent). There was positive change in all Toiora indicators, with improved Māori success in education (an increase of 3.1 per cent from 2006 to 2013), a slight increase in rates of employment (up 0.1 per cent from 2006), and an increase in the proportion of Māori who had never smoked (an increase of 2.4 per cent). Although there were very small decreases in rates of iwi affiliation and te reo use (less than 1 per cent) in Ōpōtiki, both of these are above the national average. Overall, seven of the indicators for Ōpōtiki showed positive change.

For Aotearoa New Zealand generally, more than half of the selected indicators showed positive change. With the exception of Māori home ownership, all indicators in Te Oranga have increased, as have the education and non-smoking indicators in the Toiora domain. The proportion of Māori in employment nationally dropped by 4.6 per cent between 2006 and 2013 and this is also reflected in decreases in the employment indicators for each community. The decrease in Māori home ownership reported regionally for Pōkeno, Huntly and Ōpōtiki is higher than the national average decrease and is part of a wider trend in falling home ownership for Māori that Goodyear (2017) discusses in more detail for the period 1986–2013.

Conclusion

The development of our indicator framework has provided new insights into the well-being of Māori in Pōkeno, Huntly and Ōpōtiki and, when considered as part of the wider programme of research described, has the potential to inform both iwi and government decision-making. Much of the data presented in this paper are regularly and individually reported elsewhere, but it is the combination of indicators presented across multiple domains and against national averages that provides a useful snapshot of Māori well-being, and points to the trajectory and change occurring within each community.

There are interesting differences and similarities across the three communities that will be explored further in the wider research programme and the planned spatial analyses. For example, from 2006 to 2013, Pōkeno had an increase in its Māori population, those earning in the top income bracket, and the number of Māori managers and professional;

these increases were all higher than for Huntly and Ōpōtiki. However, Huntly and Ōpōtiki had much higher participation in voluntary activities, te reo use and knowledge of iwi affiliation than Pōkeno and when compared with the national average. The next phase of our work will be to use the framework, indicators and data presented here as the basis for further analysis to understand such differences, and to query potential spatial relationships at the local, regional and national level in order to understand more about the possible regeneration and reconfiguration of communities.

The framework presented in this paper is exploratory and is intended to be the first step in developing a suite of indicators that can point to the well-being of Māori in smaller settlements such as Pōkeno, Huntly and Ōpōtiki. The further refinement of indicators and the release of new data will improve the reliability of results across Te Pae Mahutonga and community capital domains, albeit with some concerns noted about the release of data from the 2018 New Zealand Census of Population and Dwellings. The research has shown that there is potential to align different measurement frameworks to create a recognition space, where indigenous frameworks are given voice and official statistics are made more relevant to iwi and hapū.

Notes

- 1 The framework is underpinned by five core Māori values (whanaungatanga – relationships; rangatiratanga – autonomy and leadership; manaakitanga – to protect and look after; wairuatanga – spirituality and identity; and kaitiakitanga – guardianship).

References

- Barcham, M. (1998). The challenge of urban Māori: Reconciling conceptions of indigeneity and social change. *Asia Pacific Viewpoint*, 39, 303–14.
- Becker, G. (2007). Health as human capital: Synthesis and extensions. *Oxford Economic Papers New Series*, 59(3), 379–410.
- Del Popolo, F., Oyarce, A. M., Ribotta, B., & Jorge, R. (2007). *Indigenous peoples and urban settlements: Spatial distribution, internal migration and living conditions*. Santiago, Chile: United Nations.
- Durie, M. (1999). Te Pae Mahutonga: A model for Māori health promotion. *Health Promotion Forum of New Zealand Newsletter*, 49, 2–5.

- Emery, J. & Flora, C. (2006). Spiralling-up: Mapping community transformation with community capitals framework. *Community Development*, 37(1), 19–35.
- Flora, C., Flora, J. & Fey, S. (2004). *Rural communities: Legacy and changes*. (2nd ed.). Boulder, CO: Westview Press.
- Gandhi, V. & Freestone, F. (2008). Problematizing urban indigenous heritage in settler-society countries: Australia and New Zealand. *Global Urban Development Magazine*, 4, 1–16.
- Goodyear, R. (2017). A place to call home? Declining home-ownership rates for Māori and Pacific peoples in New Zealand. *New Zealand Population Review*, 43, 3–34.
- Gutierrez-Montes, I. (2005). *Healthy communities equals health ecosystems? Evolution (and breakdown) of a participatory ecological research project towards a community natural resource management process*. PhD Dissertation, Iowa State University.
- Kearns, R., McCreanor, T., & Witten, K. (2005). Linking health, place and healthy communities. *Territoris*, 5, 189–203.
- Kukutai, T. (2011). Māori demography in Aotearoa New Zealand 50 years on. *New Zealand Population Review*, 37, 45–64.
- (2014). The structure of urban Māori identities. In E. Peters & C. Andersen (Eds). *Indigenous in the city: Contemporary identities and cultural innovation*. Vancouver, Canada: UBC Press.
- Kukutai, T., & Taylor, J. (2012). Postcolonial profiling of indigenous populations: Limitations and responses in Australia and New Zealand. *Space, Populations, Societies*, 2012/1, 1–15.
- Meredith, P. (2000). *Urban Māori as 'new citizens': The quest for recognition and resources*. Revisioning citizenship in New Zealand Conference, 22–24 February 2000, Hamilton, New Zealand.
- Mika, C.T.H. (2017). *Indigenous education and the metaphysics of presence: A worlded philosophy*. Routledge.
- Ministry of Business, Innovation and Employment. (2016). *National science challenges*. Retrieved 18 August from <http://www.mbie.govt.nz/info-services/science-innovation/funding-info-opportunities/investment-funds/national-science-challenges>
- Ministry of Social Development. (2010). *Criteria for selecting indicators*. Retrieved 30 August 2018 from <http://socialreport.msd.govt.nz/2010/introduction/criteria-for-selecting-indicators.html>.
- Panelli, R., & Tipa, G. (2007). Placing well-being: A Māori case study of cultural and environmental specificity, *Ecohealth*, 4(4), 445–360.
- Pestieau K., & Wallace, M. (2003). Challenges and opportunities for planning in the ethno-culturally diverse city: A collection of papers—Introduction. *Planning Theory and Practice*, 4(3), 253–58.
- Ranis, G., Steward, F., & Ramirez, A. (2000). Economic growth and human development. *World Development*, 28(2), 197–219.

- Robson, B., & Harris, R. (Eds) (2007). *Hauora: Māori standards of health IV. A study of the years 2000–2005*. Wellington: Te Rōpū Rangahau Hauora a Eru Pōmare.
- Ryks, J. L., Waa, A., & Pearson, A. (2016). Mapping urban Māori – A population-based study of Māori heterogeneity. *New Zealand Geographer*, 72(1), 28–40.
- Sandercock L (2003). Planning in the ethno-culturally diverse city: A comment. *Planning Theory and Practice*, 4(3), 319–323.
- Simmonds, N., Kukutai, T., & Ryks, J. L. (2016). Here to stay: Reshaping the regions through mana Māori in rebooting the regions. In P. Spoonley (ed), *Rebooting the regions: Why low or zero growth needn't mean the end of prosperity* (pp. 79–105). Wellington, New Zealand: Massey University Press.
- Smith, A. (2004). A Māori sense of place? - Taranaki waiata tangi and feelings for place. *New Zealand Geographer*, 60(1), 12–17.
- Smith, G. H., Tinirau, R., Gillies, A., & Warriner, V. (2015). *He Mangopare Amohia-Strategies for Māori economic development*. Whakatāne: Te Whare Wānanga o Awanuiārangi.
- Spiller, C., Barclay-Kerr, H., & Panoho, J. (2017). *Wayfinding leadership: Ground-breaking wisdom for developing leaders*. Wellington: Huia.
- Spoonley, P. (2016). (Ed.) *Rebooting the regions: Why low or zero growth needn't mean the end of prosperity*. Wellington, New Zealand: Massey University Press.
- Statistics New Zealand. (2017a). *Population estimates tables at 30 June 1996, 2001, 2006–16*. Retrieved 30 August 2018 from http://archive.stats.govt.nz/tools_and_services/nzdotstat/tables-by-subject/population-estimates-tables-16.aspx.
- (2017b). *Population projections tables*. Retrieved 30 August 2018 from http://archive.stats.govt.nz/tools_and_services/nzdotstat/tables-by-subject/population-projections-tables
- Taylor, J. (2008). Indigenous peoples and indicators of well-being: Australian perspectives on United Nations global frameworks. *Social Indicators Research* 87(1),111–126.
- The Treasury. (2018). *Wellbeing Frameworks for the Treasury*. Retrieved 28 December 2018 from <https://treasury.govt.nz/sites/default/files/2018-02/dp-18-01.pdf>
- Te Mana Raraunga. (2018). *Te Mana Raraunga statement on 2018 New Zealand Census of Population and Dwelling: A call for action on Māori census data*. Retrieved 20 August 2018 from <http://www.temanararaunga.maori.nz/panui/>
- United Nations (UN). (2004). *Report of the workshop on data collection and disaggregation for indigenous peoples*, E/C.19/2004/2, para 23. New York, NY: United Nations Economic and Social Council.
- United Nations Permanent Forum on Indigenous Issues. (2007). *Backgrounder: Urban indigenous peoples and migration: Challenges and opportunities*. New York, NY: United Nations.

- United Nations Human Settlements Programme. (2010). *Urban indigenous peoples and migration: A Review of policies, programmes and practices* (United Nations Housing Rights Programme Report No. 8.) Retrieved 8 September 2014 from <http://mirror.unhabitat.org/pmss/listItemDetails.aspx?publicationID=2916>
- United Nations Social Development Network (UNSDN). (2016). *Tools for monitoring and evaluation of indigenous rights implementation*. Retrieved 20 August 2018 from <http://unsdn.org/2016/05/13/tools-for-monitoring-and-evaluation-of-indigenous-rights-implementation/>
- Waa, A, Ryks, J. L, Stuart, K., Howden-Chapman, P., & Robson, B. (2014). *Māori participation in urban development: Challenges and opportunities for indigenous people in Aotearoa New Zealand*. Lincoln Planning Review, 6, 4–17.
- Whakatōhea Māori Trust Board. (2017). *Whakatōhea iwi pānui Nov–Dec 2017*. Retrieved 30 August 2018 from <http://www.whakatohea.co.nz/>

Appendix 1: Notes on the indicators and the data limitations of each indicator

- The change in Māori land ownership from 2006 to 2017 was determined by identifying the size of land parcels that had been recorded by the Māori Land Court after 2006, compared with the size of all Māori-owned land in each area.
- Data from Te Kupenga were derived from a single year so this indicator shows no change over time.
- The change in the rate of Māori voter turnout was assessed in each Māori electorate by subtracting the 2014 turnout rate from the 2017 rate.
- The population of Māori descent in 2006 and 2013 was compared and the percentage change between these two years is displayed in Table 3.
- The Māori personal income indicator is based on the number of Māori earning in the top income band (\$50,001 or more) divided by the total number of Māori who answered the income question in the census. This gives the proportion of Māori earning in the top income band. The rate of percentage change since 2006 in Table 3 represents the difference between the 2006 and 2013 levels of each indicator.
- The Māori home ownership indicator represents the proportion of Māori who owned or partly owned their usual residence.
- The Māori involved in volunteer activities indicator represents the proportion of Māori involved in “Other helping or voluntary work for or through any organisation, group or marae”.
- The Māori managers and professionals indicator represents the number of Māori managers plus the number of Māori professionals compared with the total number of working-age Māori who answered this census question.
- The Māori rates of smoking indicator represents the proportion of Māori who have never smoked.
- The Māori in employment indicator is based on the total number of Māori employed divided by the total number of Māori in the labour force for each CAU.
- The Māori succeeding in education indicator represents the proportion of Māori with qualifications at level 5 and above.
- The iwi affiliation indicator represents the proportion of Māori affiliated with at least one iwi.
- The te reo Māori use indicator represents the proportion of Māori speaking te reo Māori.