The New Zealand Longitudinal Study of Ageing

Summary Report

- Pathways to Retirement for Māori -

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2014

A research collaboration between

The Health and Ageing Research Team, School of Psychology, Massey University

The Family Centre Social Policy Research Unit

The Foundation for Research, Science And Technology

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Key Findings

- There was a persistent gap between Māori and non- Māori in economic living standards and income prior to and well in to retirement, with homeownership rates dropping for Māori after retiring. This reflects the differences between Māori and non- Māori found in the general population
- Mental health was rated marginally worse for Māori (compared to non-Māori) prior to retirement, but this difference largely disappeared after 5 years of retirement. Similarly, quality of life was rated slightly worse by Māori but while reported quality of life reduced for all participants over time, it reduced at a significantly slower rate for Māori.
- Older Māori were generally well connected to their marae and whānau, although marae visits and the role whānau played in their life reduced after retirement.
- Twenty six percent of participants of Māori descent had key roles on their marae (kai karanga/pou korero, ringa wera/kai mahi, or representation at hui).
- Māori who had filled key roles on marae reported far greater involvement in marae and whānau activities than those Māori who had not filled a role on their marae. This involvement reduced over time for both groups after retirement; however Māori playing key roles on their marae remained more strongly connected.
- A common pattern emerged: Two or three years prior to retirement participants who filled a role on their marae, reported lower mental health, self-rated health, economic living standards and quality of life compared to those who had not filled a role on their marae. Following retirement, this difference disappeared for economic living standards or reversed with Māori who filled roles on their marae scoring higher self-rated health, mental health & quality of life.
- In contrast, home ownership was at similar levels for all prior to retirement, but reduced for those filling roles on their marae.

Introduction

The issues for Māori and for non-Māori as they retire are often quite different. At the crudest level of analysis, in 2012 Māori[1] life expectancy was 7.3 years less than non-Māori (Statistics New Zealand, 2013). At 65 years of age (retirement age) Māori males are predicted to live for a further 15.3 years compared to 19.9 years for non-Māori, while Māori females are predicted to have 16.9 years remaining compared to 21.6 years for non-Māori females. Much of this difference can be attributed to differences in socioeconomic status, lifestyle, and access to health care (Ellison-Loschmann, 2006; Tobias, 2009). Impacting directly on the participants retiring and recently retired in the NZLSA study are a cohort affected by the New Zealand structural reforms of the 1980s and early 1990s (Tobias, 2009) as they were most likely to be in a 'working and raising a family' phase of their lives during these reforms.

Disregarding cultural factors for the moment, the pathways to retirement for Māori diverge from that of non-Māori over time, with health status declining faster with old age for Māori and differing initial socioeconomic positions giving very different experiences of retirement. Māori experiences of retirement however are diverse: cumulative economic disadvantage (Cunningham, 2002); experiences of racism (Harris, 2006); distance from marae and whānau; and differing expectations from whānau, marae, hapū and iwi are just some of these.

The following report will provide a brief description of selected economic, cultural and health variables for participants of Māori descent in the New Zealand Longitudinal Study of Ageing (NZLSA) cohort. These data were collected in 2010 and 2012 and incorporates participants from the Health, Work, and Retirement longitudinal study begun in 2006 (Towers, 2008) and a random sample of community dwelling older New Zealanders drawn from the electoral roll (further details are contained in an accompanying NZLSA cohort report: Towers & Stevenson, 2014). We will initially report on some important Māori and non-Māori differences, go on to suggest one method for disaggregating participants of Māori descent[2] particularly relevant to retirement, and then follow these groups over a number of economic, health and cultural indicators just prior to retirement, then 2 to 3, 4 to 5, and 6 or more years following retirement.

[1] Māori is here defined as anybody who has nominated a Māori ethnicity, alone or with other ethnicities.
[2] Māori descent was used in the analysis as it is stable over time and allows valid comparisons in key variables across successive sampling waves.

Sample Description

The number of participants in the 2012 NZLSA sample wave of Māori descent was 1082 with 1902 non-Māori[3]. Their age ranged from 50 years old to over 85. Half (51%) were 65 years or older. Over half (59%) were female and 41% were male. Across those of Māori descent, 45% were working, 41% were retired, 3% unemployed, and 5% other (for example house husband/wife); 31% had no qualifications, 21% secondary, 25% post-secondary or trade, and 23% had tertiary qualifications; Over two-thirds (69%) were married or partnered, 11% divorced or separated, 15% widowed, and 7% were single. Sixteen percent of the participants of Māori descent were experiencing economic hardship, a third (37%) were comfortable, and nearly half (47%) reported good economic living standards.

For those not of Māori descent 55% were female, 46% were working, 49% retired, 1% unemployed and 4% other. Nearly one-fifth (18%) had no qualifications, 23% secondary, 30% post-secondary or trade, and 29% tertiary. Three quarters (75%) were married or partnered, 9% divorced/separated, 12% widowed, and 4% single. Nine percent of non-Maori were experiencing economic hardship, a quarter (26%) were comfortable, and two-thirds (65%) had good or very good economic living standards.

The following analyses are limited to NZLSA participants who had retired by the 2012 sampling wave and excludes participants still working in 2012. As this is a longitudinal analysis, the analysis includes data from both 2010 and 2012 sample waves. Thus, all analyses are explicitly allowing for change over time. For comparative purposes, important economic and health measures are presented for participants of Māori descent and those not of Māori descent.

Tracking Retirement

In order to better track people as they work and then retire, a variable was generated based on retirement related questions from the 2012 data. This variable used year of retirement as the 'zero point' and has the number of years working before retirement as a negative number (e.g. -2 is two years before retirement) and the number of years after retirement as positive. This variable is used instead of age or year of the survey[4].

Retirement Variable Treatment

Table 1 shows how participants were distributed across the retirement variable. However, as data from two waves was included the participants were effectively measured twice within the dataset; as a result, the table below shows the 2010 percentage plus half of the change between the first and second category from 2010 to 2012. Table 2 shows how this happens.

[3] Sample and group n's are unweighted. All descriptive statistics (means and percentages) weighted to account for the over-sampling of Māori descent.

[4] Given that change in retirement status between sampling waves could have occurred at any point within the two yearly survey collection, the variable was categorised into 2 year blocks, with a transition category of retired plus/minus one year (reflecting an inability to precisely define when in that 2 year period participants retired).

Table 1. Time retired for participants in 2010 by Māori Descent.

	Maori Descent	Not of Maori Descent	Total
2 years to retirement	8.0%	6.8%	6.9%
Retiring	13.0%	11.8%	11.9%
Retired for 2 years	11.5%	10.9%	11.0%
Retired for 4 years	10.3%	10.7%	10.7%
Retired for 6 or more years	57.2%	59.8%	59.5%
Total	**100%**	**100%**	**100%**

Table 2 below details how time retired in 2010 changed by 2012. Given that the sample only includes those who were retired by 2012, those who had still been working in 2010 (14%) were now classified as transitioning to retirement two years later in 2012.

In 2010 more Māori were yet to retire (16% compared to 14% of non-Māori), the same number of Māori and non-Māori were in the process of retiring (10%), similar proportions had been retired for 2 years (13% Māori & 12% non-Māori), and fewer Māori were retired for four years or longer (61% Māori & 65% non-Māori). The lower number of Māori retired for four or more years primarily reflects the lower life expectancy of Māori (although differing retention rates may also play a part). The column for 2012 shows how those in 2010 simply moved to the next category two years later.

Table 2. Time retired for participants in 2010 and 2012 by Māori Descent.

	Māori Descent		Not of Māori Descent		Total	
Unweighted n	**990**		**1316**		**2306**	
	2010	**2012**	**2010**	**2012**	**2010**	**2012**
2 years to retirement	16.0%	-	13.5%	-	**13.8%**	
Retiring	10.1%	15.9%	10.1%	13.5%	**10.1%**	**13.8%**
Retired for 2 years	13.0%	10.0%	11.8%	10.1%	**11.9%**	**10.1%**
Retired for 4 years	7.7%	12.9%	9.6%	11.8%	**9.4%**	**11.9%**
Retired for 6 or more years	53.3%	61.2%	55.0%	64.6%	**54.8%**	**64.2%**
Total	**100%**		**100%**		**100%**	

Longitudinal Analysis

Using these categories, it is possible to aggregate both NZLSA data collection waves and summarise a number of key variables as participants approach retirement and changes after retirement. Where a test of significance is required, a population averaged model using the General Estimating Equation (GEE) procedure in SPSS (IBM Corp, 2010) was employed. The NZLSA dataset was structured as longitudinal/panel data, participant ID used to identify participants over time, survey wave and gender specified as within-subject, and an autoregressive (AR(1)) working correlation matrix structure.

As an example, if the first valid 300 cases were graphed by income and retirement time, the data would look like the graph below (Figure 1), where each line represents an

individual with the beginning of the line (left) representing their score in 2010 and the end of the line (right) is their score in 2012. While most cases show a slight trend up or down, there is the odd one that shows larger jumps, possibly representing changing employment situations, one-off income jumps (e.g. selling a house), or measurement error. The selected GEE analysis allows this individual change over time to be taken into account when looking at the relationships between income and time spent in retirement.

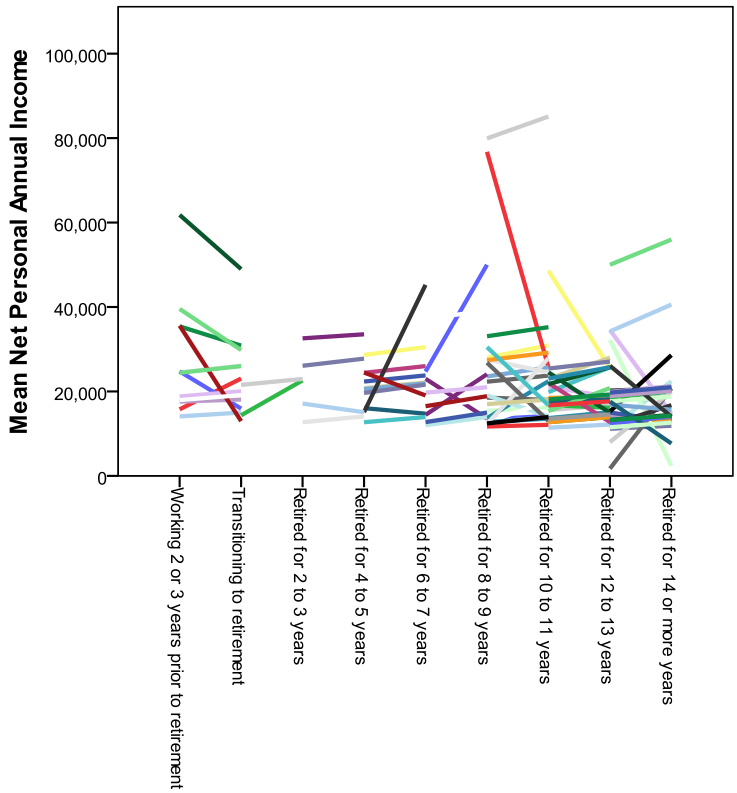

Figure 1. Line graph showing first 300 cases by income and retirement time.

Analyses by Māori Descent and non-Māori Descent

Economic Living Standards (ELSI)

The Economic Living Standards Index (ELSI) is a 25 item measure covering ownership of consumer goods, social participation, economising, and global self-ratings of living standards (Jensen, Spittal, Crichton, Sathiyandra, & Krishnan, 2002; Jensen, Spittal, & Krishnan, 2005). ELSI is particularly adept at discriminating between those in hardship or poverty (Parry, 2009). Scores range from 0 to 31 with higher scores reflecting higher standard of living. ELSI scores can also be collapsed into seven categories: Severe hardship; Significant hardship; Some hardship; Fairly comfortable; Comfortable; Good; and Very good. There was a small but persistent gap in economic living standards with Māori participants worse off economically than non-Māori generally (X^2=4.802, p=.028), with a slow increase in economic living standards after retiring (X^2=10.006, p=.002) for Māori and non-Māori. There was no significant difference in how economic living standards changed for participants of Māori descent relative to non-Māori, i.e. the gap remained about the same over time. On average, most participants were experiencing comfortable living standards or better, of particular interest however would be an analysis looking at those experiencing hardship and how this is related to retirement.

Table 3. Average ELSI by Māori descent.

ELSI	2 years to retirement	Retiring	Retired for 2 years	Retired for 4 years	Retired for 6 or more years
Māori Descent	21.3 (comfortable)	21.3 (comfortable)	22.8 (comfortable)	22.2 (comfortable)	23.6 (comfortable)
Not of Māori Descent	24.6 (good)	23.8 (comfortable)	23.9 (comfortable)	24.3 (comfortable)	24.8 (good)

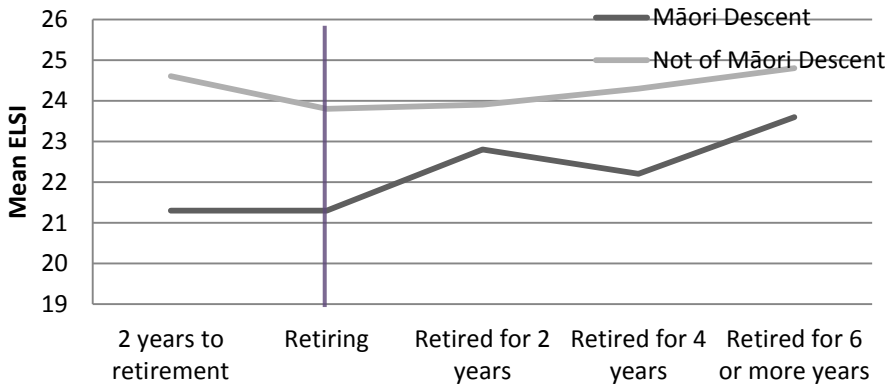

Figure 2. Line graph of average ELSI by Māori descent.

Net Personal Income

Reflecting the persistent gap in economic living standards was a gap in income with Māori participants earning significantly less than non-Māori (X^2=20.257, p<.001). This difference is most pronounced while working with Māori earning around $15,000 less than

non-Māori. After retirement a much reduced but still persistent gap in earnings of around $4500 remained throughout retirement.

Table 4. Average net personal income by Māori descent.

Net Personal Income	2 years to retirement	Retiring	Retired for 2 years	Retired for 4 years	Retired for 6 or more years
Māori Descent	$25,490	$23,097	$22,194	$21,477	$20,710
Not of Māori Descent	$40,748	$28,378	$26,759	$24,433	$25,224

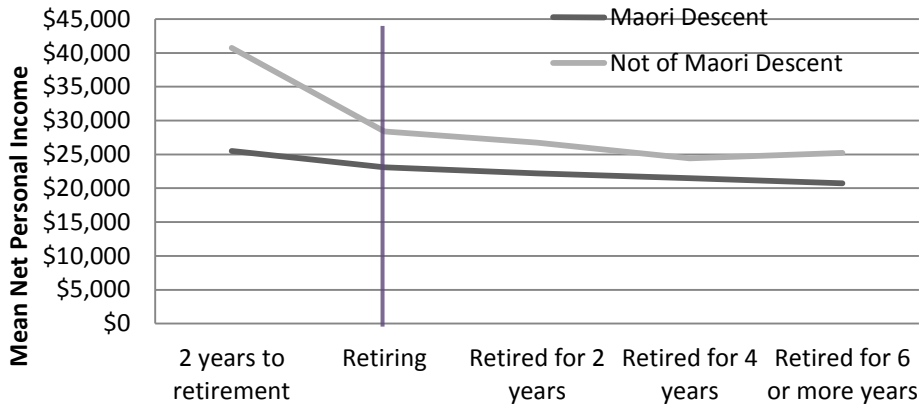

Figure 3. Line graph of average net personal income by Māori descent.

Home Ownership

Home ownership in contrast to income and living standards, was at very similar rates before retiring (93% & 94% for Māori & non-Māori respectively), but dropped significantly for Māori only to 77% within 2 to 3 years (Māori Descent x Retirement Interaction: X^2=8.531, p=.003). Non-Māori home ownership remained largely unchanged over time.

Table 5. Home Ownership by Māori descent.

% Own home	2 years to retirment	Retiring	Retired for 2 years	Retired for 4 years	Retired for 6 or more years
Māori Descent	93%	91%	77%	81%	83%
Not of Māori Descent	94%	92%	93%	94%	94%

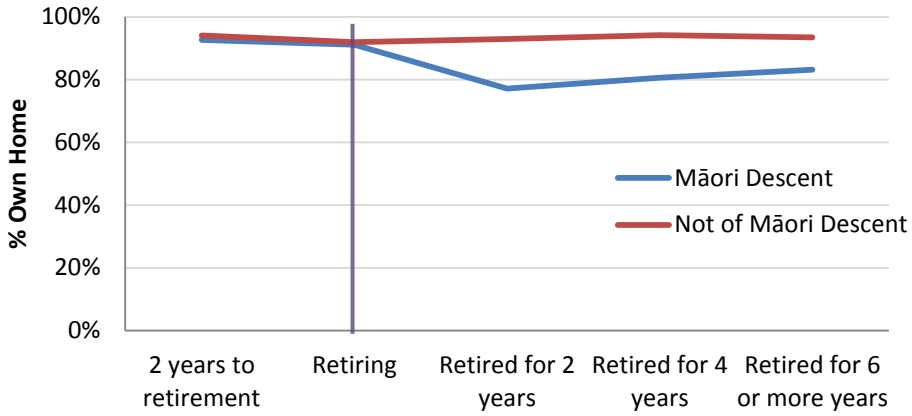

Figure 4. Line graph of home ownership by Māori descent.

Urban Dwelling

Both Māori and non-Māori were mostly located in urban areas (78% Māori & 82% non-Māori), with a proportion of those of Māori descent appearing to move out of urban areas within five years of retirement (to a low of 60%), then an increase to 84% urban after six years of retirement (possibly reflecting increasing age-related disability and a need to be closer to health services). However none of these relationships reached significance and will require a more complex analysis.

Table 6. Live in urban area by Māori descent.

Urban Dwelling	2 years to retirement	Retiring	Retired for 2 years	Retired for 4 years	Retired for 6 or more years
Māori Descent	78%	80%	67%	60%	84%
Not of Māori Descent	82%	83%	87%	82%	82%

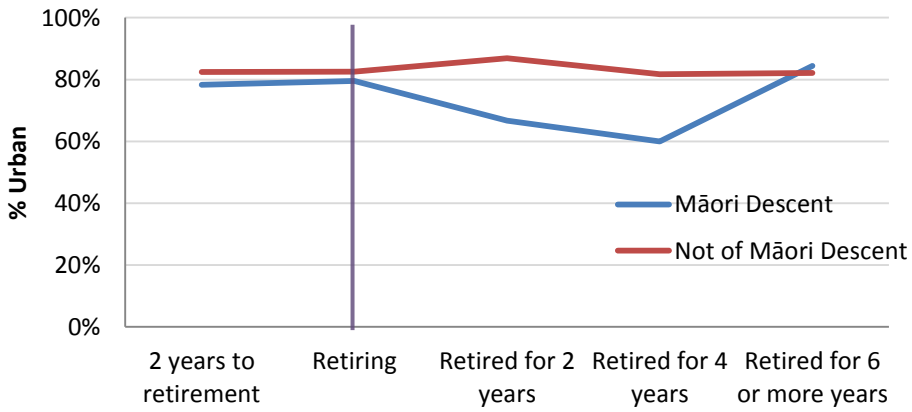

Figure 5. Line graph of live in urban area by Māori descent.

Physical Health (SF12)

While there appears to be a small and persistent gap in physical health between Māori and non-Māori, this was not significant. For both Māori and non-Māori as would be expected with increasing age, there was a significant decrease in physical health with increasing time spent in retirement (X^2=36.46, p<.001).

Table 7. Average physical health by Māori descent.

Physical Health	2 years to retirement	Retiring	Retired for 2 years	Retired for 4 years	Retired for 6 or more years
Māori Descent	49.7	46.3	44.7	46.7	44.0
Not of Māori Descent	51.7	49.6	47.0	48.5	45.6

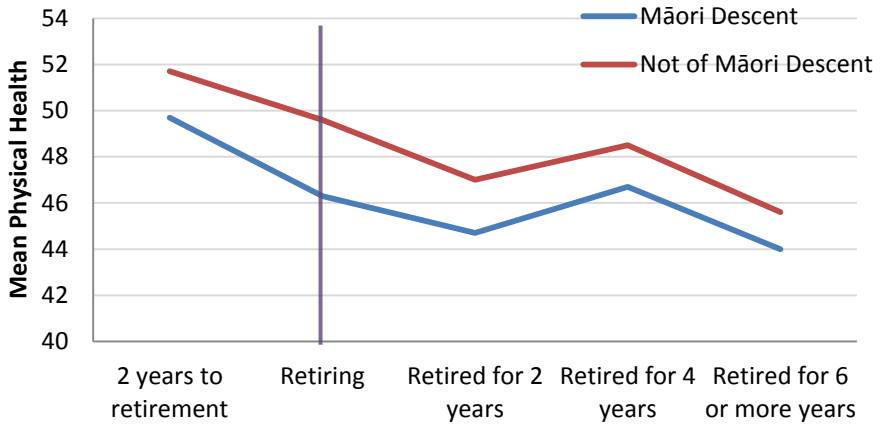

Figure 6. Line graph of average physical health by Māori descent.

Mental Health (SF12)

While the difference was relatively small, the statistical analysis showed that Māori mental health was lower prior to retiring (an average score of 48) than non-Māori ($\bar{X}$=51), but this difference reduced with increasing time spent in retirement until they were at similar levels (X^2=4.596, p=.032) with an average score of 49 to 50.

Table 8. Average mental health by Māori descent.

Mental Health	2 years to retirement	Retiring	Retired for 2 years	Retired for 4 years	Retired for 6 or more years
Māori Descent	48.2	48.9	47.8	49.3	49.4
Not of Māori Descent	50.9	49.8	50.8	49.8	49.9

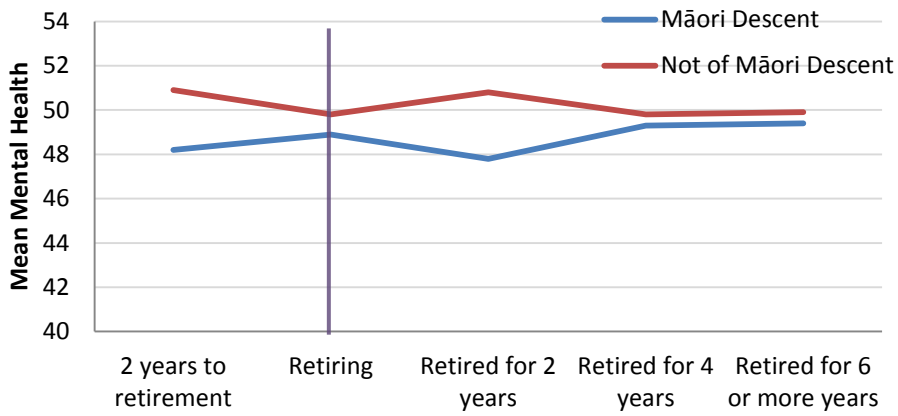

Figure 7. Line graph of average mental health by Māori descent[5].

Quality of Life (WHO-QoL)

On average, Māori rated their quality of life marginally lower than non-Māori (scores of 32 and 32.5 respectively; X^2=4.936, p=.026) and quality of life reduced for both over time (X^2=4.44, p=.035). However, quality of life for Māori reduced at a significantly slower rate than non-Māori (X^2=4.143, p=.042).

Table 9. Average quality of life by Māori descent.

Quality of Life	2 years to retirement	Retiring	Retired for 2 years	Retired for 4 years	Retired for 6 or more years
Māori Descent	31.9	31.7	31.2	31.7	31.8
Not of Māori Descent	33.2	33.3	32.9	32.6	32.2

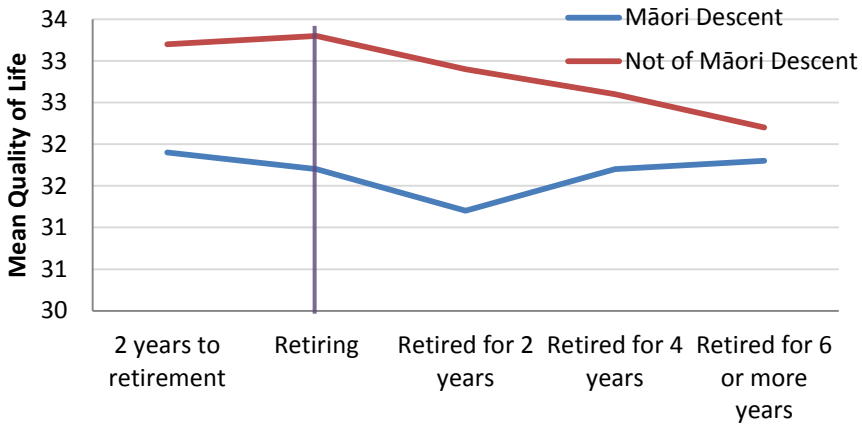

Figure 8. Line graph of average quality of life by Māori descent.

[5] While this graph appears unusually symmetrical, further analysis of the SF12 raw scores and subscales (weighted & unweighted) show a similar pattern, with the same symmetry appearing in the Mental Health Scale throughout.

Māori Outcomes

The following analyses deal only with NZLSA participants of Māori descent. To identify groups with differing retirement trajectories, all Māori participants were characterised according to whānau and marae involvement. Second, this characterisation was used to form two groups which were tracked over retirement according to a number of health, economic and cultural indicators.

Whānau

Table 10 and the bar graph below reveal that with increasing time in retirement, the role whānau played in Māori participants lives decreased from 65% prior to retiring to 43% after they had been retired six or more years.

Table 10. Whānau involvement.

Whānau	2 years to retirement	Retiring	Retired for 2 years	Retired for 4 years	Retired for 6 or more years	Total
A very large part in your life	39%	46%	28%	33%	22%	29%
A large part in your life	26%	8%	28%	15%	21%	19%
A small part in your life	9%	8%	21%	19%	14%	14%
A very small part in your life	26%	39%	24%	33%	43%	38%
Total	100%	100%	100%	100%	100%	100%

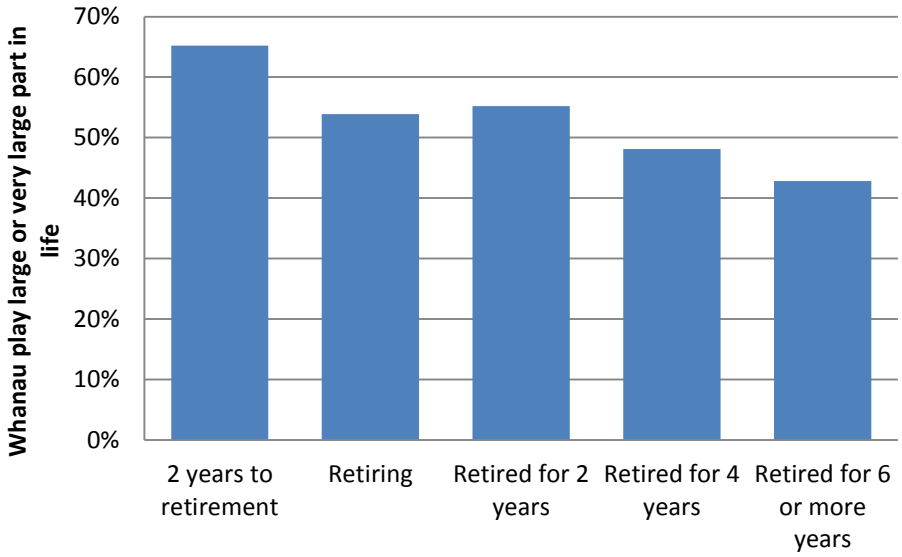

Figure 9. Bar graph of Whānau involvement.

Marae

For all those of Māori descent, there was a trend toward fewer visits to marae after retirement. Three quarters (74%) went to a marae a few or more times in the last 12 months prior to retiring, dropping to 56% after six or more years of retirement.

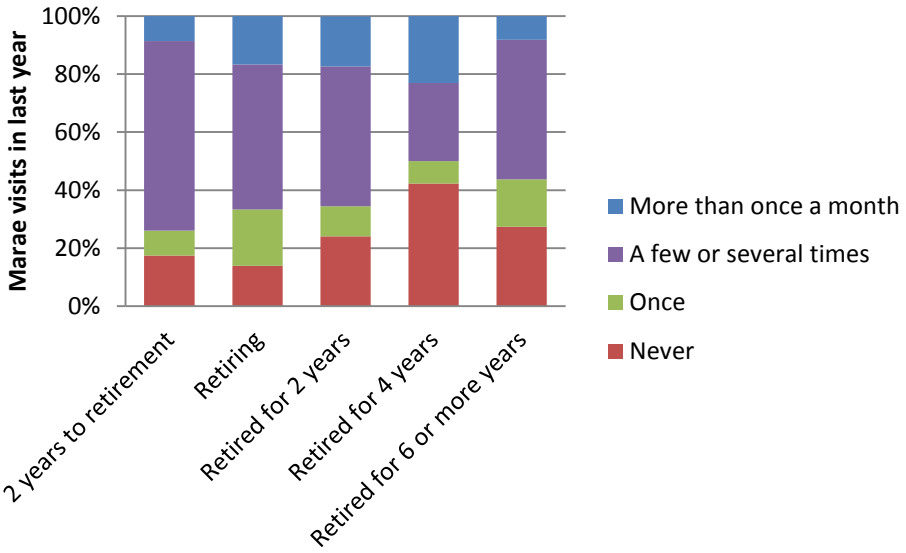

Figure 10. Bar graph of Marae Involvement.

Looking in more detail at the roles the participants performed on their marae; while a large number had been to marae (74%), in 2012 only a quarter (26%) had filled a designated role on their marae. In part this can be explained by distance with many living away from their marae (for example only 4% lived on Māori or Papakainga/family land in 2012). Looking in more detail at those having a role, 70% had performed a primary role on marae at front of house (karanga, korero, mahi wairua) and 67% back of house (in the kitchen or general marae duties). Nearly half (47%) had also represented the marae at hui or runanga.

Table 11. Filled key role on Marae.

Total Number of Roles on Marae	0	73.7%
	1	6.3%
	2	8.0%
	3 or more	12%
Front of house (karanga, korero, wairua)	Not front of house	30.3%
	Front of House Role	69.7%
Back of house (kai mahi, ringa wera)	Not back of house	32.9%
	Back of House Role	67.1%
Represent Marae (board, hui/runanga)	Haven't represented Marae	52.6%
	Represent Marae	47.4%

To compare retirement pathways within Māori, a variable was created using the 2012 key roles on participants' marae, where having performed one or more roles on the marae was coded as "Played key role in last 12 months" with the second category "No key role in last 12 months". The term kaumātua was not applied to those playing a key role as while performing a key role on their marae reflects many of the roles expected of or performed by kaumātua, those participants may not think of themselves necessarily as kaumātua. Additionally, many older Māori may perform kaumātua duties in a Māori context or be

regarded by their whānau or community as kaumātua, but may not be active on their own marae due to distance or accessibility.

Economic Living Standards

Table 12 and Figure 11 show that before retiring, those who had played a key role on marae were experiencing some hardship ($\bar{x}$=16) compared to those who hadn't played a key role on their marae and who had comfortable ($\bar{x}$=24) economic living standards (X^2=22.682, p<.001). This gap however reduced as participants were retiring and had disappeared altogether after retirement with all participants of Māori descent reporting comfortable economic living standards (X^2=13.803, p<.001).

Table 12. Economic Living Standards for Māori descent by key role on Marae.

Mean ELSI score	2 years to retirment	Retiring	Retired for 2 years	Retired for 4 years	Retired for 6 or more years
No key role in last 12 months	23.9 (comfortable)	22.8 (comfortable)	22.8 (comfortable)	21.8 (comfortable)	24.1 (comfortable)
Played key role in last 12 months	16 (some hardship)	17.3 (fairly comfortable)	22.8 (comfortable)	24.1 (comfortable)	23.6 (comfortable)

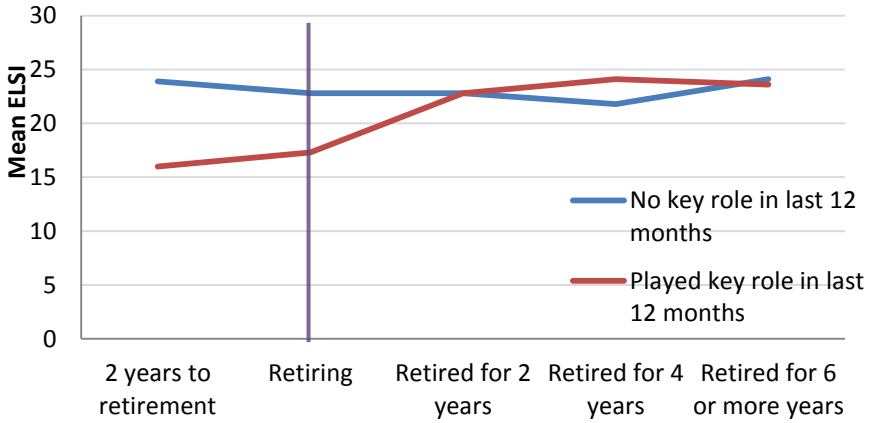

Figure 11. Line graph of Economic Living Standards for Māori descent by key role on Marae.

Net Personal Income

While Table 13 and Figure 12 indicate that Māori playing a key role at their marae were earning more prior to and soon after retirement, this was not significant (X^2=1.435, p=.231), nor did this gap change with time spent retired (X^2=3.065, p=.080).

Table 13. Net personal income for Māori descent by key role on Marae.

Net Personal Income	2 years to retirement	Retiring	Retired for 2 years	Retired for 4 years	Retired for 6 or more years
No key role in last 12 months	$23,616	$20,520	$21,386	$23,458	$21,958
Played key role in last 12 months	$29,535	$29,881	$24,748	16,947	$19,245

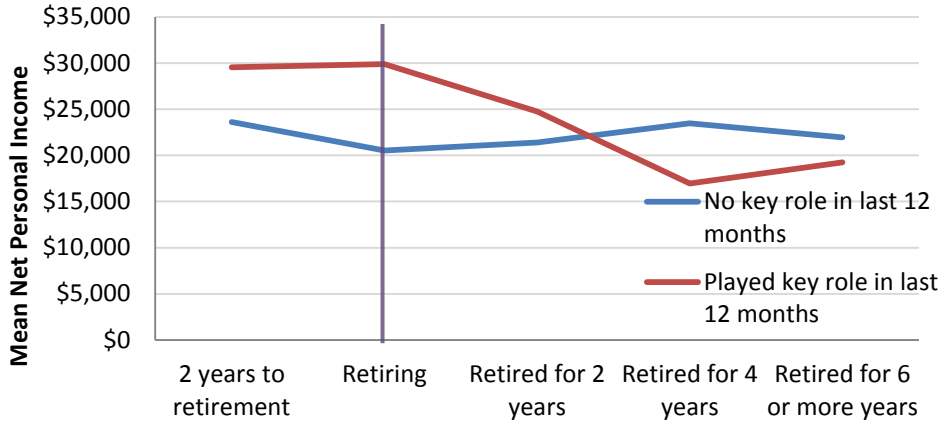

Figure 12. Line graph of net personal income for Māori descent by key role on Marae.

Proportion Living in Urban Areas

As with the difference between Māori and non-Māori, statistical tests on the proportion of Māori living in urban areas showed no significant differences between those who had key roles on their marae and those that had not (p=.809), changes with increasing time spent retired (p=.467), or that the two groups differed in urban distribution over time (p=.141).

Table 14. Percentage urban for Māori descent by key role on Marae.

% Urban	2 years to retirment	Retiring	Retired for 2 years	Retired for 4 years	Retired for 6 or more years
No key role in last 12 months	75%	73%	63%	65%	88%
Played key role in last 12 months	100%	89%	57%	57%	75%

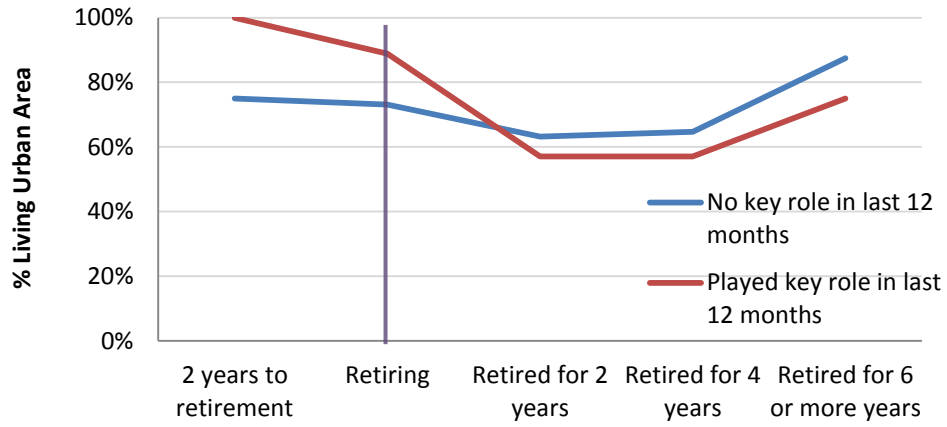

Figure 13. Line graph of percentage urban for Māori descent by key role on Marae.

Homeownership

While there were no significant differences in how homeownership changed over time, or in homeownership rates between participants performing key roles on marae and those not performing these roles there was a significant interaction between the two groups and change over time (X^2=8.881, p=.003). While both groups started with high rates of homeownership (between 88% and 90%), those who played a key role on their marae dropped from 88% prior to retirement to 67% after five years of retirement. Those participants who had not played a role on their marae showed little change (a reduction in homeownership of 4% over the same period). The uptick in homeownership after six years of retirement may reflect a cohort effect (e.g. a 'survivor effect' or a group who owned a house nearer their marae).

Table 15. Percentage owning home for Māori descent by key role on Marae.

% Owning Home	2 or 3 years before retiring	Retiring	Retired for 2 to 3 years	Retired for 4 to 5 years	Retired for 6 or more years
No key role in last 12 months	90%	93%	87%	86%	83%
Played key role in last 12 months	88%	92%	75%	67%	89%

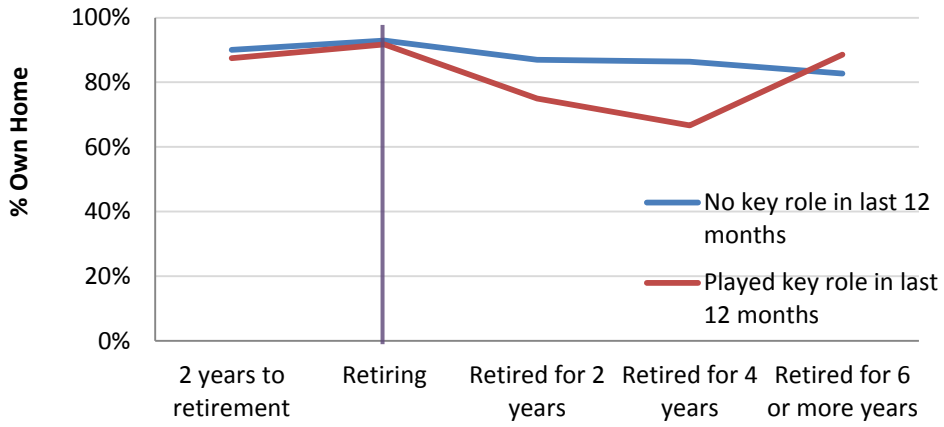

Figure 14. Line graph of percentage owning home for Māori descent by key role on Marae.

Self-Rated Health

Self-rated health (SRH) increased marginally with time spent in retirement (X^2=6.079, p=.014), although there were indications that SRH decreased after six years or more of retirement.

Table 16. Self-rated health for Māori descent by key role on Marae.

SRH	2 years to retirment	Retiring	Retired for 2 years	Retired for 4 years	Retired for 6 or more years
No key role in last 12 months	3.3	3.3	2.9	3.3	3.2
Played key role in last 12 months	3	3.2	3.4	3.9	3.3

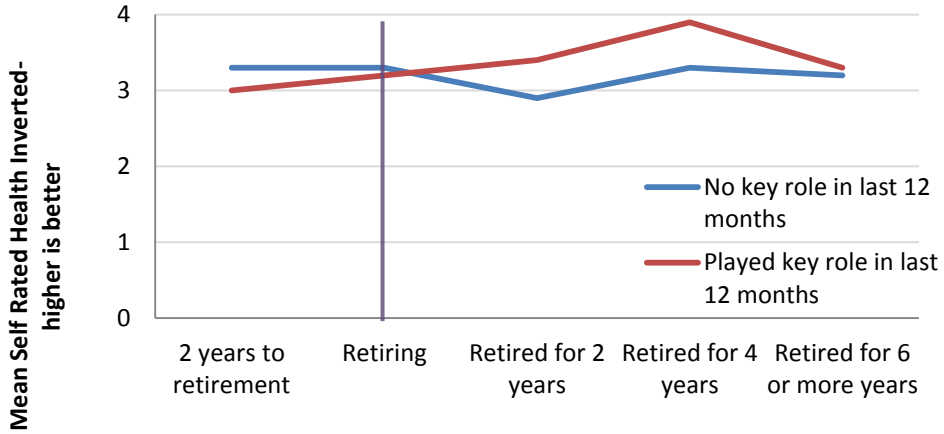

Figure 15. Line graph of self-rated health for Māori descent by key role on Marae.

Physical Health

Overall, there was a significant difference in physical health (using the SF12) between those performing key roles on their marae and those not (X^2=7.013, p=.008), however, there was no significant difference for time spent in retirement and no significant difference in change in physical health over time for these two groups. After examining Figure 16 however, a separate analysis was run excluding the working prior to retirement category, which found that physical health for those performing key roles improved a small but significant amount after retirement compared those not filling key roles on their marae (X^2=5.552, p=.018). As would be expected, this improvement was not sustained after six or more years of retirement, but the gap remained.

Table 17. Physical health for Māori descent by key role on Marae.

Physical Health	2 years to retirment	Retiring	Retired for 2 years	Retired for 4 years	Retired for 6 or more years
No key role in last 12 months	49.8	46.1	44.2	46.1	44.1
Played key role in last 12 months	49.2	46.3	46.8	49.7	46.8

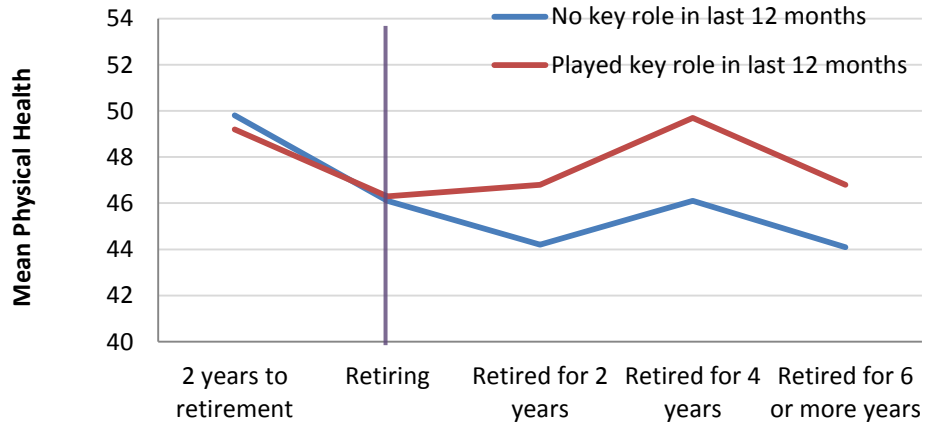

Figure 16. Line graph of physical health for Māori descent by key role on Marae.

Mental Health

As with the difference between Māori and non-Māori, while this graph appears unusually symmetrical, further analysis of the SF12 raw scores and subscales, weighted and unweighted, show a similar pattern, with the same symmetry appearing in the Mental Health Scale before standardisation. The ‘bump’ for marae active participants and the ‘dip’ for participants’ not filling key roles on the marae may reflect the differing anticipation of what retirement will mean to the two groups, followed by a more general trend for mental health change.

Statistical analyses showed that mental health increased marginally over time for both groups (X^2=11.804, p=.001) but that the mental health of Māori participants filling key roles on marae improved significantly more from a score of 46 prior to retirement to a score of 51 after six years or more of retirement (X^2=4.206, p=.040). In contrast, excepting the 'dip' immediately after retirement, the mental health of Māori who had not filled key roles on their marae remained about the same.

Table 18. Mental health for Māori descent by key role on Marae.

Mental Health	2 years to retirement	Retiring	Retired for 2 years	Retired for 4 years	Retired for 6 or more years
No key role in last 12 months	48.8	49.3	46.4	49	49
Played key role in last 12 months	46.4	46.8	51.6	50.5	51.1

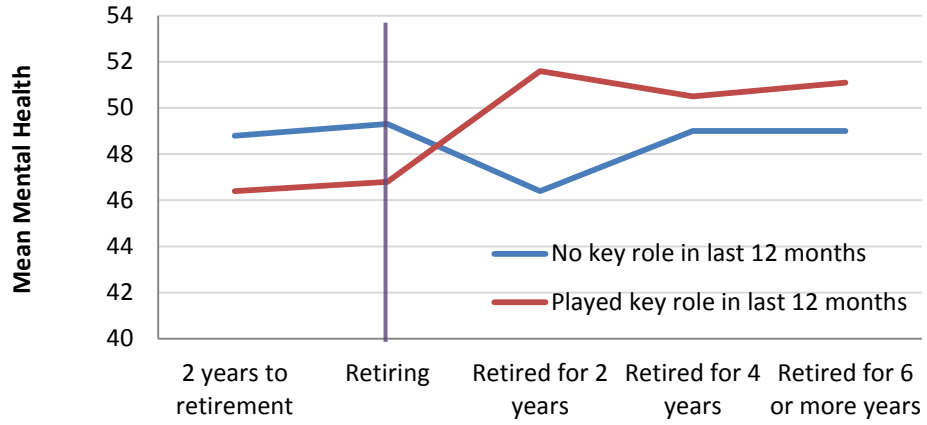

Figure 17. Line graph of mental health for Māori descent by key role on Marae.

Quality of Life

In a similar pattern to mental health, self-rated health, economic living standards, and quality of life (QoL) those filling key roles at their marae had a lower quality of life prior to retirement than those who had not filled a role ($\bar{x}$=29 and $\bar{x}$=33 respectively), after four to five years of retirement however this was reversed with marae active participants having a higher QoL ($\bar{x}$=34) compared to non-active Māori participants ($\bar{x}$=32, X^2=7.958, p=.005). QoL began dropping for both groups after six years of retirement, although marae active Māori participants still had a marginally higher QoL.

Table 19. Quality of life for Māori descent by key role on Marae.

Quality of Life	2 years to retirement	Retiring	Retired for 2 years	Retired for 4 years	Retired for 6 or more years
No key role in last 12 months	33.2	31.3	30.4	31.9	31.7
Played key role in last 12 months	28.8	32.1	33	34.3	32.8

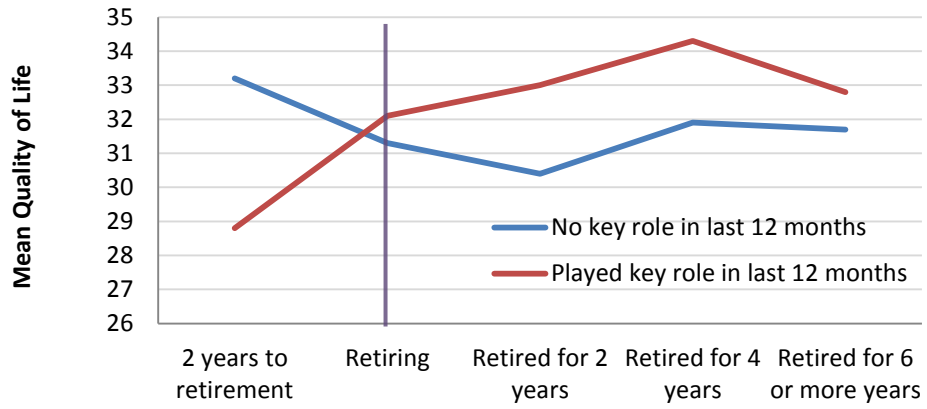

Figure 18. Line graph of quality of life for Māori descent by key role on Marae.

Whānau Involvement

Those filling a role on their marae in 2012 were significantly more involved with their whānau (X^2=24.168, p<.001), reporting whānau played a large or very large part in their lives 100% of the time, dropping to 79% for those retired for six or more years. Those not filling key roles on their marae were less involved with their whānau (50% reported whānau played a large or very large part in their lives) and this involvement reduced over time spent in retirement with only 24% of those retired for six or more years saying that whānau played a large or very large part in their lives. Further analyses will be performed in the future looking at how much of this difference is due to distance from whānau and how much is due to other factors.

Table 20. Whānau involvement for Māori descent by key role on Marae.

Whanau	2 years to retirment	Retiring	Retired for 2 years	Retired for 4 years	Retired for 6 or more years
No key role in last 12 months	50%	39.1%	38.9%	33.4%	23.8%
Played key role in last 12 months	100%	100%	100%	100%	78.8%

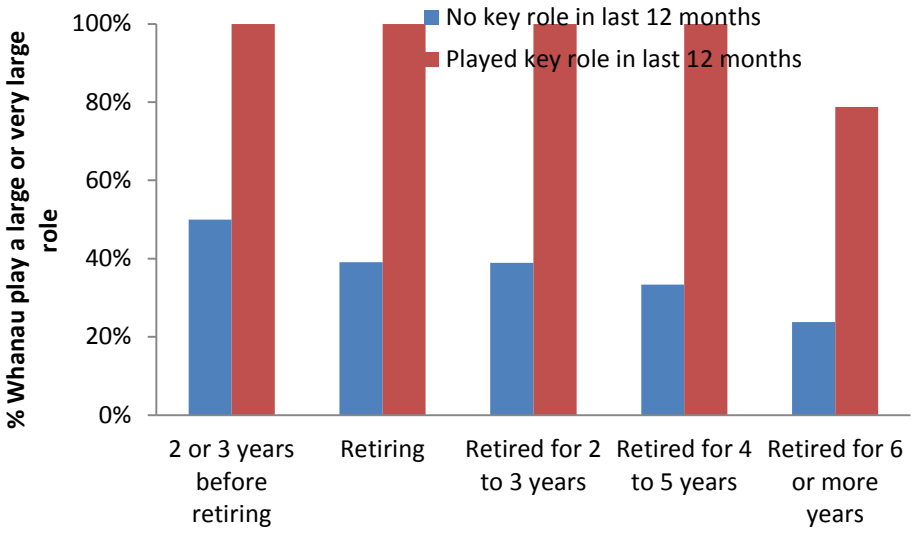

Figure 19. Bar graph of Whānau involvement for Māori descent by key role on Marae.

Marae Visits

Understandably, there is a substantial difference in marae attendance between these two groups and over time (X^2=-.263, p=.023). For those participants who have filled a key role on their marae (Figure 20) all of them (100%) had gone a few or more times in the last 12 months. Of these, prior to retirement, 14% had been more than once a month, this proportion climbed steadily and by the time the participants had been retired for four to five years 83% were on their marae more than once a month. The proportion dropped dramatically after this to 21% reflecting the significant health challenges many Māori face with advancing age, although their involvement with their Marae was still high overall (100% had visited a few or more times).

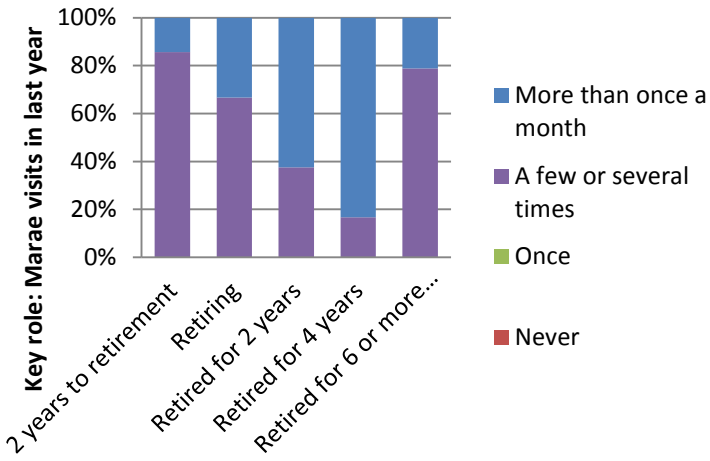

Figure 20. Stacked bar graph of Marae Visits for those of Māori descent who had a key role on Marae.

The situation for those Māori who had not had role on their Marae in 2012 was very different (Figure 21). There are indications of a group who have relatively strong links to their marae; 60% had been to their marae a few or more times before they had retired. With retirement however, the proportion who visited their marae more than once a year dropped over time with a low of 24% after four to five years. The proportion went up to 38% for those retired for six or more years, again reflecting the differing circumstances and increasing age of the participants.

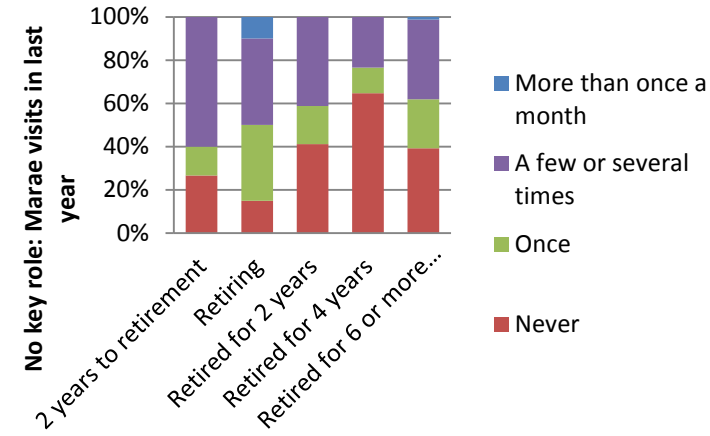

Figure 21. Stacked bar graph of Marae visits by those of Māori descent who had no key role on Marae.

Summary and Concluding Comments

Comparisons between Māori and non-Māori show a persistent gap in economic living standards and income. Health differences present a complex picture, physical health showed no significant differences between Māori and non-Māori with both declining with retirement (and of course age); mental health for Māori was significantly worse just prior to retirement but improved relative to non-Māori until they were at similar levels. While quality of life was rated slightly worse by Māori, it reduced significantly more slowly than for non-Māori. Homeownership, while at similar rates for Māori and non-Maori before retirement, reduced for Māori with increasing time in retirement.

For participants of Māori descent, the role of whānau and visits to their marae were at relatively high levels (65% and 74% respectively) before retirement, and both reduced with increasing time spent in retirement. While marae visits were high (between 56% and 74%) only a quarter (26%) had filled a key role in 2012. This figure will underestimate the true number filling key roles on marae as it was not asked in 2010 (participants may have had a key role in 2010, but did not indicate or were unable to fill a key role on marae in 2012).

Marae are a key Māori institution and it is by the efforts of its people they are kept alive. Additionally older Māori bring a great deal of experience to marae with many taking on kaumātua roles. The measure of key roles on participants' marae will also correlate highly with a number of other Māori cultural measures (e.g. reo Māori, contacts with Māori socially, knowledge of whakapapa & whenua), but without presupposing high levels in any of them.

Marae function solely due to the unpaid and voluntary actions of its people. In a Marae's older generation lays both a tremendous resource (knowledge & expertise) and leadership roles. The role of kaumātua for Māori comes with age; Te Pumanawa Hauora in the Oranga Kaumātua report (Te Pumanawa Hauora, 1997) define kaumātua as being aged 60 years or over and that the roles of kaumātua include "resolving disputes and conflicts between families and between iwi, carrying the culture, recognising and encouraging the potential of younger members, cultural guidance and advice, maintenance of protocol, reception and care of visitors, protection and nurturing of younger adults and children, performance of ceremonial duties, spiritual leadership and attendance at tangihanga" (pp. 11-12). There is the potential for kaumātua roles to bring "reduced privacy, less time with family, longer working hours and a relative loss of independence" (p. 11).

There were indications of a group who have relatively strong links to their marae despite not filling a formal role: 60% of this group had been to their marae a few or more times before they had retired. With retirement however, the proportion who visited their marae more than once a year dropped over time with a low of 24% after four to five years. There will also be a number who are active in other Māori contexts (e.g. urban marae, cultural groups overseas) but who were unable to fill a role on their Marae in 2012, and which will require further research to understand.

Those filling a role on their marae in 2012 were understandably more involved with their marae; all had visited a few times or more in the last 12 months and also reported that whānau played a large or very large part in their lives 100% of the time, dropping to 79% for those retired for six or more years. Those not filling key roles on their marae were less involved with their whānau (half reported whānau played a large or very large part in their

lives) and this involvement reduced over time spent in retirement with only a quarter of those retired for six or more years saying that whānau played a large or very large part in their lives.

There was some evidence that participants who had filled a key role on their marae in 2012 were worse off economically: while they were experiencing some economic hardship before retirement compared to participants who had not filled a marae role, this difference disappeared after retirement. In contrast, while homeownership was at similar rates before retirement, the proportion of those owning homes dropped faster after retirement for those filling a role on marae. Part of the answer may lie in those who have sold their homes to move closer to their marae and ancestral lands, some of whom may have moved into kaumātua flats or to be part of a papakāinga housing project.

Self-rated health (SRH) increased marginally for all Māori after retirement and decreased for those retired six or more years (reflecting the much broader and older age range in this group). SRH for Māori filling roles on their marae was marginally lower than other Māori before retiring, but reversed after retiring. There was no difference in physical health prior to retirement, however those filling key roles on their marae experienced a small improvement in physical health compared to those who had not filled a role (who's physical health tended to decrease) up until they had been retired for six or more years where physical health dropped for all Māori (again reflecting the age of those in this group). The mental health of those who had filled a role also increased significantly with retirement compared to those who had not filled a role; for whom a marginal increase was also evident. In a similar pattern to mental health, self-rated health, and economic living standards, those filling key roles at their marae had a lower Quality of Life (QoL) prior to retirement than those who had not filled a role, after four to five years of retirement however this was reversed with marae active participants having a higher QoL compared to Māori participants who had not filled a role on marae. Quality of life began dropping for both groups after six years of retirement, although marae active Māori participants still had a marginally higher QoL.

The analysis was hampered somewhat by the lack of discrimination at the top end of the time spent in retirement variable; by 2012 the 'retired for six years or more' category contained over half of the participants and included ages from around 72 years of age and older. Further work will need to be carried out to extend the upper end of the variable, which will be assisted by further sampling waves in 2013, 2014 and beyond. The inclusion of mortality data for all participants is due to be incorporated in 2014, enhancing the explanatory power of the study. Future analyses will also include the 2006 and 2008 waves of data from the Health, Work, and Retirement cohort of the NZLSA sample, allowing the analysis of data 2 to 3, and 4 to 5 years prior to retirement, and trend data across four data points (rather than the two available in the NZLSA cohort).

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