TE TAI ŌHANGA
THE TREASURY

Trends in Wellbeing in Aotearoa New Zealand: 2000-2020

Background Paper for the 2022 Wellbeing Report

April 2022

Te Kāwanatanga o Aotearoa
New Zealand Government

BACKGROUND PAPER FOR THE 2022 WELLBEING REPORT	Trends in Wellbeing in Aotearoa New Zealand: 2000-2020
MONTH/YEAR	April 2022
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ACKNOWLEDGEMENTS	Thanks to all the individuals and agencies who have generously provided data and feedback on drafts, particularly Stats NZ, the Social Wellbeing Agency and the Ministries of Education, Health, Justice, Social Development, Environment and Housing and Urban Development.
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Executive summary

This paper is the first in a series of detailed background papers designed to support the Treasury's first Wellbeing Report.

This paper provides a high-level summary of some key trends in the indicators of wellbeing presented in the Living Standards Framework Dashboard. It provides a complementary view to the more-detailed reports published by other agencies that look closely at particular aspects of wellbeing, such as health, and the distinctive features of wellbeing of particular groups in the population, such as children and disabled people. We provide links to these more-detailed reports and data sources throughout.

This paper focuses on three key questions:

- Where are we as a country positioned on average in comparison to other countries across the various domains of wellbeing?
- Has our situation improved, worsened, or stayed stable over time?
- Are there any notable differences in the distribution of wellbeing across various groups in the population?

The answers to these questions present a decidedly mixed picture. We in Aotearoa New Zealand are positioned well in many respects, with very high air quality, high rates of employment and volunteering, and high levels of social connection and life satisfaction, for example.

However, we also face many challenges and opportunities for improvement. In some areas such as the educational achievement of our children we are behind the highest-performing countries and key metrics are trending downwards. In areas such as health obesity levels continue to grow along with conditions such as diabetes, and smoking rates continue to pose a substantial health burden, particularly on Māori and Pacific communities. For those who don't own their own house, there are problems with affordability, habitability and crowding.

There are also many important differences in the distribution of wellbeing across demographic subgroups. Ethnic and gender-related differences can be found throughout this paper. Some of the most striking differences relate to disability, with disabled people having much lower wellbeing than non-disabled people on many indicators.

Age also stands out strongly on many of the metrics we examine. In many OECD countries older age groups do worse on many metrics but, in this country, we have achieved high levels of wellbeing for most of our older people. However, there are many causes for concern when it comes to the wellbeing of children and young people.

For example, we have the highest rate of bullying in the OECD. We also have declining levels of school attendance, especially in lower-decile schools. The proportion of people aged 15-24 with high or very high levels of psychological distress has increased from 5% in 2011/12 to 19% in 2020/21. Loneliness is highest among people aged 15-24 and has increased substantially between 2014 and 2018. Teen suicide rates are among the worst in the OECD. The rate of young people not in employment, education or training is higher than the OECD average and is climbing for young men.

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Introduction

Purpose and scope

This paper is one in a series that the Treasury has commissioned ahead of the first Wellbeing Report, which will be published in November 2022.

The Wellbeing Report is a new stewardship document that the Treasury must produce every four years following passage of the Public Finance (Wellbeing) Amendment Act 2020. The Wellbeing Report will sit alongside the Long-term Fiscal Statement, Investment Statement and Long-term Insights Briefing as part of a suite of regular strategic assessments by the Treasury of Aotearoa New Zealand's economic, fiscal, social and environmental health.

The Wellbeing Report has the broadest scope of the four reports. The relevant section of the Public Finance Act 1989 requires the Treasury, using indicators, to describe:

- the state of wellbeing in New Zealand
- how the state of wellbeing in New Zealand has changed over time
- the sustainability of and any risk to the state of wellbeing in New Zealand.

Rather than attempt to cover this scope comprehensively in a single document, which would be very long, we will be publishing a series of more-detailed papers over the course of this year to meet these requirements. These will be capped by a final report in November 2022, the Wellbeing Report itself, which will be a shorter document drawing together the key conclusions from the more-detailed analytical pieces.

This paper addresses the first two requirements in the Public Finance Act using a conventional, indicator-heavy approach. Subsequent papers over the next six months aim to provide more novel and analytically sophisticated perspectives on the first two requirements and will also address the requirement to analyse sustainability and risk.

Approach and caveats

The requirements in the Public Finance Act for the Wellbeing Report are quite broad and leave a lot of scope for interpretation. Some of the key choices we have made are summarised in this section.

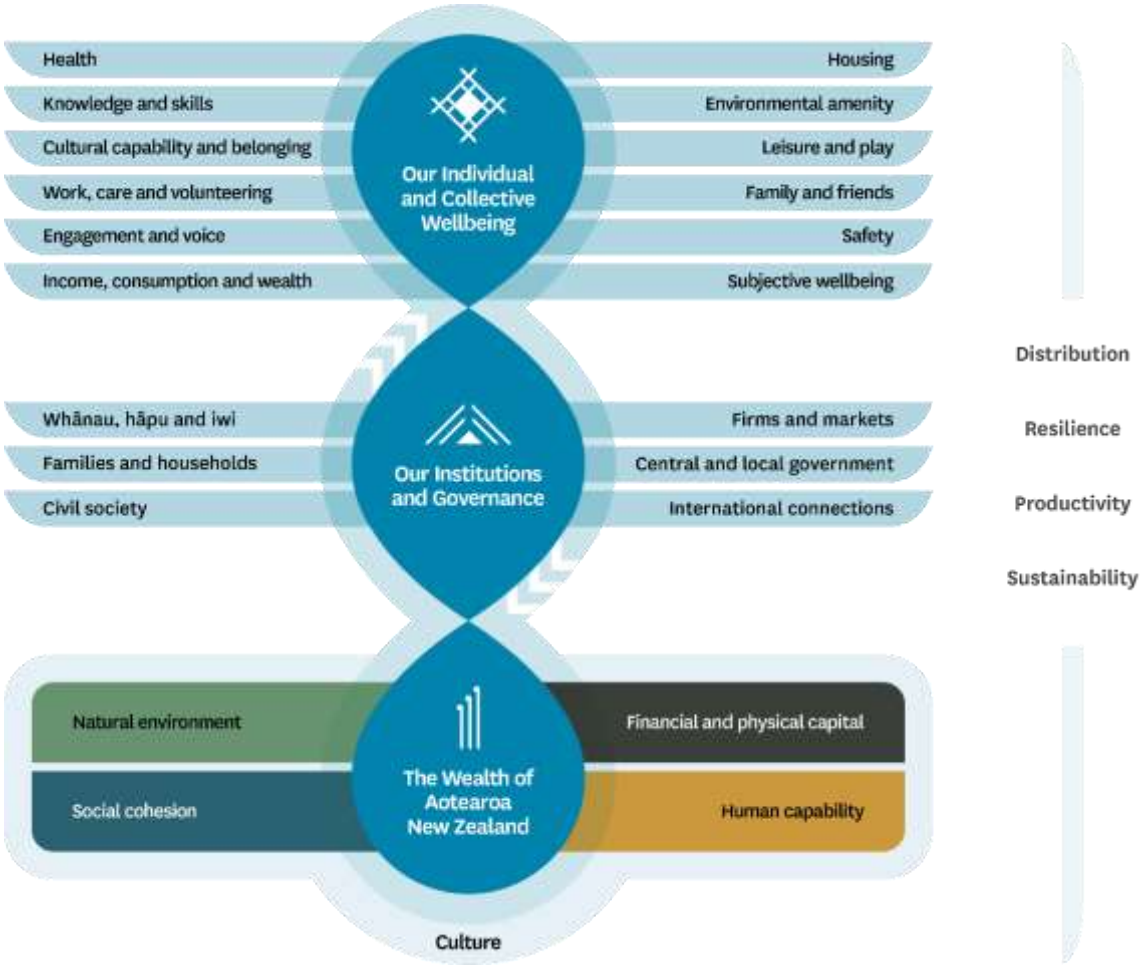
This paper uses the Living Standards Framework to conceptualise wellbeing

There is no one conceptualisation of wellbeing that is universally agreed but, to meet the requirements of the Public Finance Act, we need to adopt a particular perspective. This paper uses the conceptual framing of the Living Standards Framework (LSF),

taking advantage of work in the Treasury over the past decade and more to confront the deep questions of the nature of wellbeing.

This paper makes use of just one of the three levels of the LSF, that of our individual and collective wellbeing. Other papers will make use of the other two levels of the LSF. The structure of this paper follows the division of wellbeing in the LSF into 12 distinct (but overlapping) domains (see Figure 1).

Figure 1: The Living Standards Framework



The definition of each domain of wellbeing is provided in the relevant section of this paper along with a brief discussion of the key overlaps and interconnections between the domains. For more information about the definition of each element of the framework and rationale for defining them in the way we have, refer to the recent Treasury Paper (The Treasury, 2021b).[1]

The LSF sits alongside He Ara Waiora as one of two core frameworks used by the Treasury to conceptualise wellbeing. We aim to publish a paper analysing the wellbeing of people in Aotearoa New Zealand from the perspective of He Ara Waiora later in the year.

1 The Living Standards Framework (LSF) 2021 (treasury.govt.nz)

We use indicators from the LSF Dashboard, supplemented by additional measures and insights

This paper primarily draws on the indicators in the LSF Dashboard, which have benefited from an iterative process of expert input and public feedback. For a full discussion of the principles we have used to select indicators and the consultation process, see the recent paper on the refresh of the Dashboard (The Treasury, 2022).[2]

In that paper, we note that parsimony has been a key design principle for the LSF Dashboard. This paper uses this basic source of information and supplements it with additional indicators and data when this helps contextualise the trends in the Dashboard indicators or otherwise enrich the analysis. Where an indicator is available on the LSF Dashboard, we say so in the title of the graphs throughout this paper. Note that in some cases this paper uses a more detailed cut or breakdown of an LSF dashboard indicator that may not be available on the dashboard itself.

We examine a mix of level, trend and distributional data

To report on the state of wellbeing in Aotearoa New Zealand as required under the Public Finance Act, the Treasury needs to have some basis on which to assess whether an observed state of affairs is good, bad or indifferent. While the LSF Dashboard indicators have generally been constructed such that movement in one direction is unambiguously good (or bad), we usually lack for established benchmarks or targets against which to assess each measure.

Our approach in this paper is to examine a mix of level, trend and distributional data. For the observed average level of an indicator, we compare ourselves where possible with other countries. We generally compare ourselves with other countries in the Organisation for Economic Co-operation and Development (OECD) for consistency and because this is the group of countries for which the most effort has gone into standardisation of measures. While wellbeing is not necessarily a competition between countries, international comparisons do reveal where we are in relation to what has been demonstrated as possible to date – what an economist might call the 'wellbeing possibility frontier'. For example, it might be possible with future technologies to progress life expectancy to 100, but we do not know yet if this can be achieved. We do know, though, that life expectancy can definitely be advanced to 85 because Japan has done so, whereas children born today in Aotearoa New Zealand can only expect to live to 82.

It may not be possible to bring ourselves to the frontier across all dimensions simultaneously, and it may not be desirable to try and do so. But this type of comparison does at least provide a consistent way of assessing our level as impressive, mediocre or disappointing in an international context.

We also provide trend information, which is simpler to interpret. Because the indicators are generally unambiguous in interpretation, a change in time in one direction or another can be straightforwardly interpreted as an improvement or deterioration, at least when viewed in isolation of other trends that may covary.

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2 The Living Standards Framework Dashboard (treasury govt.nz)

Evaluating distributions is a more complex undertaking. While most would agree, in very general terms, that greater equality tends to be better rather than less, most would also agree that perfect equality is generally unrealistic and undesirable. People also differ on the 'optimal' level of equality in society, given perceived trade-offs with other principles such as self-determination and proportionality between risk, effort and reward.

In this paper, rather than attempting to comprehensively address these complexities, we generally limit ourselves to comparisons between major demographic groups. Where there is a difference between gender groups or ethnic groups for example, we interpret this as prima facie inequitable, or at least undesirable, based on the logic of luck egalitarianism. For more on this, see recent discussion on the LSF (Hughes, 2021),[3] but the basic idea is that one's demographic characteristics are a matter of brute luck and so should not as a matter of justice influence one's wellbeing.

We generally focus on the past two decades but go back further in some cases

Many indicators of wellbeing change only modestly over a scale of months or years, even though they can change very significantly over decades. To understand trends in wellbeing, long time horizons are often necessary. However, work on social indicators only really started in earnest in this country about 20 years ago. In some cases, we have information stretching further back into the 1980s and 1990s and include this where possible, but this paper generally focuses on the past two decades. Where data presented does not cover the full period, it is because the available data does not go back even to the year 2000.

In many cases, the data we use only goes up to 2018 or so, before the start of the pandemic. This is partly because of the pandemic, which has disrupted many of the regular data collection mechanisms used to assess wellbeing such as the New Zealand General Social Survey.

There are other data sources that can be used to examine the short-term changes in wellbeing associated with the pandemic such as those used in Cook et al. (2020). The Treasury intends to update this COVID-focused analysis before the Wellbeing Report is published in November, but this will be a separate exercise and is out of scope for this background paper.

We err on the side of saying something rather than nothing, even if some data sources are less than perfect

In many cases, the only data available on a particular subject may be drawn from a survey with a sample size or response rate that is less than ideal or from a non-survey data source that suffers from some other kind of quality concerns – see the text box below. Although we always endeavour to use the best-quality data available, in some cases, we have chosen to include lower-quality data rather than say nothing at all. As such, some of the trends observed in this paper need to be interpreted with caution. For a view of wellbeing based on only the highest-quality data, the Stats NZ wellbeing data portal is the best source, given the high bar set by Stats NZ for inclusion in that

3 Towards a Living Standards Framework for all Aotearoa: Culture, children and wellbeing (DP 21/01) (https://www.treasury.govt.nz/publications/dp/dp-21-01)

platform.[4] Where we have included data from other sources, we footnote a short overview of the source the first time it is used in this paper, noting key limitations such as inconsistency in methodology over time, low response rates and so on.

There are also some aspects to wellbeing that are conceptually important but where no data exists at all. For example, we lack data to understand differences in wellbeing as they relate to the functioning of non-nuclear family and whānau structures. We offer some reflections on important data gaps identified in the development of this paper in the appendix.

Statistical refresher

Most of the data presented in this report comes from surveys. Surveys are based on a sample of the population that is taken to be representative of the population overall, but if this sample is not representative, this can lead to problems with interpretation. Wherever possible, we have added error bars to the graphs throughout this report to reflect what is known as sampling error. Generally speaking, the larger the sample, the smaller the sampling error and the more closely the sample can be expected to resemble the total population. For this reason, the error bars tend to be smaller for estimates across the entire population than for subpopulations, particularly those such as Pacific Peoples that are relatively small in comparison to the total.

Error bars are particularly important when considering trends over time, as this report does. Where margins of error overlap, we cannot be sure an observed change (upwards or downwards) is real, as it may just reflect slight differences in the samples over time. The same applies to comparison between subgroups – generally speaking, overlapping error bars suggest a difference is not statistically significant.

A more difficult issue is non-sampling error, which is not reflected in the error bars. We footnote information that may help assess whether this kind of error may be present. For example, a low response rate (where many people asked to participate in a survey do not do so) may create bias if the kinds of people who respond are different in some way from the people who do not. Another type of non-sampling error is where the type of survey (face-to-face or online for example) produces a particular kind of response such as when people consciously or unconsciously respond in a way they think the interviewer wants to hear. This can cause particular issues when the methodology changes over time or is different between countries for example.

The limitations these issues place on our ability to analyse the state of and trends in wellbeing, as the Public Finance Act requires us to, are discussed briefly in the appendix when we consider options to improve wellbeing data in future. Where there are no error bars on a graph, it may be because we were unable to source them before publication or, more commonly, because the data comes from a source such as the census or administrative data that covers the whole population, not just a sample (at least in theory).

Another thing to note is that the data related to ethnicity generally uses the multiple ethnicity definition so that one person can appear in the figures for more than one ethnicity. This is particularly relevant for younger age groups for whom multiple ethnicities are more common. Exceptions to this general rule are footnoted.

4 https://statisticsnz.shinyapps.io/wellbeingindicators/

We build on the general approach of the Social Report and OECD How's Life series but only selectively present data and insights

In preparing this paper, we have benefited enormously from the groundwork laid by the Ministry of Social Development (MSD) Social Report in Aotearoa New Zealand and the OECD's international work to measure and monitor wellbeing across countries. We have relied heavily on the data collection systems instituted by these series as well as their general approach to reporting on trends.

However, we have also departed from each of these predecessors in an important way. Compared to the Social Report, our presentation of graphs and data is more selective. This reflects the widespread availability of dashboards in 2021 compared to the early 2000s (when the Social Report was first published). For readers interested in inspecting every single indicator according to every possible demographic cut available, that functionality is available on the LSF Dashboard, Ngā Tūtohu Aotearoa on the Stats NZ website, OECD.stat and various other databases and portals.

This paper is focused more on sense-making rather than a comprehensive examination of the issues from every angle. The graphs that have made it into this paper have been chosen on the basis that they highlight a particularly notable phenomenon or because they help contextualise other key results. This has helped to manage length and, we hope, to improve readability.

Compared to the OECD's report, we offer less commentary on the trends we report on and very little speculation on what might be causing key trends. This again is partly to manage length and improve readability, but it also reflects our epistemic humility, particularly in the cause of our very first Wellbeing Report.

Further general reading and links:

OECD How's Life

LSF Dashboard

MSD Social Report 2016

Ngā Tūtohu Aotearoa

Summary of key trends

This section provides a high-level summary of overall trends in wellbeing. It also draws out the key differences in wellbeing between major demographic groups across the various domains of wellbeing.

Key overall trends

Table 1 summarises at a very high level some of the most notable features of the data presented in this paper. This table illustrates that, although Aotearoa New Zealand has many strengths when it comes to our wellbeing relative to other countries, we also lag behind what other countries have achieved in a number of areas. Considering trends over time provides a similarly mixed picture. Some of our areas of weakness appear to be improving, even as some areas of strength show signs of deterioration.

Table 1: Notable features of our wellbeing relative to other OECD countries

	Strength	Mediocrity or weakness
Improving	- High employment, low unemployment. - Good air quality in most places.	- Middling or lower safety than other countries in terms of crime, perceived safety, bullying and road deaths, but generally improving. - Lower average household incomes than other countries, although improving. - High *E. coli* levels in many rivers, especially in urban areas, although improving in many places.* - Long hours of work for many, particularly men, and lower satisfaction with work-life balance among those working long hours.
Steady	- High adult skills and qualifications. - High engagement and voice, although less so for young people. - High social support, although slightly less for Asian populations.	- Low housing affordability for renters, particularly low-income renters and aspiring home owners. - Middling rates of young people not in education, employment or training. - Overall suicide rates near the OECD median, teen suicides among the worst in the OECD.
Worsening	- High but slightly declining life satisfaction among most people. - High but declining self-reported health. - Low but increasing loneliness, particularly among the young.	- High and worsening psychological distress, particularly among young people and women.* - Middling but declining achievement among school students. - Declining school attendance, particularly among lower-decile schools.*

* Assessments of the levels for these indicators as a strength or weakness are based on our judgement rather than comparison to international data.

Key trends for major demographic groups

Although in this paper we do not systematically consider the wellbeing of each demographic subgroup using bespoke frameworks and indicators, there are still many notable trends and differences between population groups apparent from the more generic indicators we explore. These show that whether life in Aotearoa New Zealand is improving or getting worse depends very much on who you are.

The following are some general points about major subgroups overall, but in all cases, it is important to remember that there is significant variation in experiences within broad categories such as 'young people' – within-group variation tends to be much larger than between-group variation.

Age

Some age-related differences reflect lifecycle patterns (eg, in income and wealth), but comparison to other countries shows that many age-related differences in wellbeing reflect different social and economic structures and choices. While in many countries older people do less well on many wellbeing metrics, Aotearoa New Zealand by comparison is generally a good place to be old, particularly if you are partnered and own your own home.

Compared to under-65s, over-65s are more satisfied with life, have a higher sense of belonging, are less lonely, have more social support, experience fewer negative emotions, are more politically engaged, volunteer more, have more leisure time and are less likely to live in a mouldy house (regardless of tenure).

While it is good that older New Zealanders tend to be so well, unfortunately our young people are not doing so well on many metrics. On a purely material basis, the housing boom has exacerbated pre-existing differences in wealth to the advantage of older groups. Increases in household wealth since 2001 have accrued primarily to older age groups.

And while child poverty is declining, on a range of other metrics the wellbeing of children and younger adults is either poor, worsening, or both. This is concerning both for the wellbeing of these people now, and for the potential long-term impacts on their wellbeing over the rest of their lives.

The proportion of people aged 15-24 with high or very high levels of psychological distress has increased from 5% in 2011/12 to 19% in 2020/21. Loneliness is highest among people aged 15-24 and has increased between 2014 and 2018. Teen suicide rates are among the worst in the OECD. Cognitive skills at age 15 are also in decline. Levels of school attendance are declining and are particularly low among those in more-deprived areas. We also have the highest rate of bullying in the OECD. The rate of young people not in employment, education or training is similar to the OECD average and is climbing for young men.

People aged under 25 are least likely to report a high sense of belonging to Aotearoa New Zealand, are least likely to report that life is worthwhile and are less likely to vote than young people in other OECD countries.

Ethnicity[5]

Although on many measures Māori and Pacific Peoples are doing less well on many measures, it is important to note that much of this relates to the younger age structure of these populations and the trends in wellbeing for younger people discussed in the previous section.

Among the four major ethnic groups in Aotearoa New Zealand, Pākehā are the oldest with a median age at the 2018 Census of 41.4 years, followed by Asian New Zealanders (31.3 years), Māori (25.4 years), and Pacific Peoples (23.4 years).

These large differences in the age structure of the major ethnic groups also mean that the analysis of wellbeing by age above applies to ethnicity to a significant extent. Having said that, there are also important differences between ethnic groups that are not explained by age alone. Some of the most notable ethnic differences are presented in Table 2.[6] This table looks to focus on, to quote Māori wellbeing expert Atawhai Tibble, "what's strong, not just what's wrong" with each ethnic group. It is also important to note that, in many cases, differences between ethnic groups may reflect issues such as discrimination or the performance of social services rather than any characteristics of the population in question.

Table 2: Notable features of wellbeing by ethnic group

Ethnic group	Better positioned relative to other groups	Less well positioned relative to other groups
Pākehā	Relatively strong in all wellbeing domains.	
Asian	- Highest self-reported health. - High cognitive skills. - Lowest rate of young people not in education, employment or training (NEET). - Lower levels of crime victimisation. - Highest levels of multilingualism.	- Lowest free time of all groups. - Lowest social support, highest loneliness. - Lowest proportion finding it easy or very easy to express identity.
Māori	- High sense of belonging to New Zealand. - Te reo Māori prevalence stabilising.	- Low income more common. - Highest NEET rate. - Lower education achievement. - Lower self-reported health. - Higher levels of victimisation.
Pacific Peoples	- High sense of belonging to New Zealand. - Lowest rates of loneliness.	- Lowest wealth of all ethnic groups. - Highest household crowding. - Lower education achievement. - Low income more common.

5 Sample sizes are generally not sufficient to assess the overall wellbeing of ethnic groups other than the four major categories, such as people in the Middle Eastern, Latin American and African group.

6 For those who prefer to view the data using the 'radial dial' or 'wellbeing wheel', this functionality is available on the LSF Dashboard.

Disability

Data on disabled people is not as well developed as for other subpopulations such as ethnic groups, but the data that exists reveals many large differences in the wellbeing of disabled and non-disabled people. Compared to non-disabled people, disabled people report finding it harder to express their identity, report greater loneliness, and have lower incomes, lower rates of home ownership, more difficulty getting adequate sleep, more difficultly accessing parks and green space, lower life satisfaction and a lower sense that life is worthwhile. These findings are all the more striking because disabled people are older on average than non-disabled people and older people do well on most dimensions of wellbeing in general.

In future iterations of the Treasury's Wellbeing Report, greater detail will be available on the lives of disabled people in our communities thanks to a new disability survey that Stats NZ has planned for 2023 and thanks to the efforts of the new Ministry for Disabled People to work directly with disabled communities to understand their aspirations and challenges faced in meeting those aspirations.

Gender, family type and sexuality

The data sources we rely on in this paper do not generally include information about rainbow identities, limiting our ability to analyse the wellbeing of rainbow New Zealanders.[7] This situation will be improved in future with Stats NZ working to incorporate this information into its surveys. In the meantime, the Health Promotion Agency (2019) has found that rainbow people report lower levels of life satisfaction and higher levels of mental distress and are more likely to report being excluded from social situations, suggesting a need to understand these phenomena in more detail.

We do, however, have excellent data on simple male-female differences. Taken as a whole, the differences between men and women are reasonably small. The main things that stand out are that:

- men have lower life expectancy, higher rates of very long work hours and a higher rate of occupational accidents
- women have lower perceived safety, higher rates of psychological distress and higher rates of 'negative' emotions such as sadness and worry.

Considering paid and unpaid work together, women do more unpaid work than men but the total amount of work is about the same. This is unusual by OECD standards. In most OECD countries, women work more than men after considering paid and unpaid work together.

While there may not be many differences between the average woman and the average man, people living alone and especially sole parents are doing less well on many metrics, and these groups are disproportionately female. More than half of people living alone are women, and over 80% of sole parents are women. Compared to other family types, sole parents have very low net worth, higher rates of loneliness and low levels of life satisfaction.

7 We use the term rainbow, as per the rainbowtick.nz definition, to refer to people who identify as lesbian, gay, bisexual, transgender, takatāpui or intersex.

Health

Overview

Being in good mental and physical health and exhibiting health-related behaviours and lifestyles that reduce morbidity and mortality such as eating well and keeping active.

Health might be the most fundamental of all the wellbeing domains. Health provides the basis for our capability to do almost everything we might wish to. Health is strongly associated with other aspects of our wellbeing, and when asked, people tend to rate health as at least as important for their wellbeing as any other aspect of their lives (Stats NZ, 2019).

It is good then that, like in most countries, our health has steadily improved for many years. A baby born today can expect to live longer and for more years in good health than a baby born at any earlier time in our history. We also have very high self-reported health.

However, on most measures of health we are only in the middle of the OECD, suggesting there is room for further improvement. Increases in life expectancy and healthy life expectancy also seem to be flattening out even as they continue to increase in comparable countries.

While smoking rates continue to decline, they still continue to contribute to more death and disability than any other modifiable risk factor, particularly among Māori and Pacific Peoples. Second to smoking in the list of risk factors is obesity, which is increasing. This may be why the health impacts of diabetes are also increasing significantly, with particular impact on Pacific Peoples and Indian people, particularly older members of those groups.

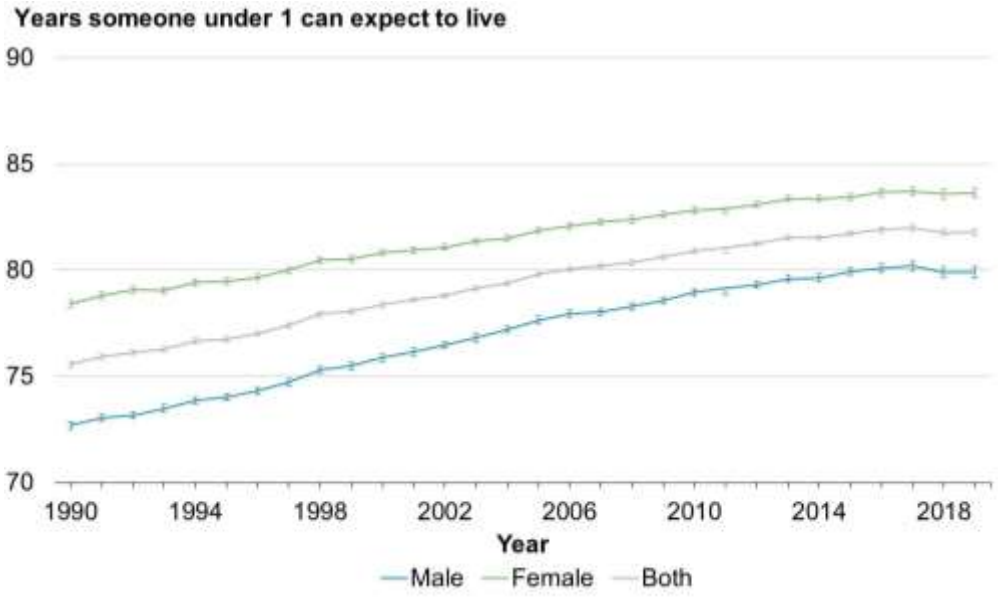
There has also been a substantial increase in reported psychological distress, particularly among younger people and women. Nearly 12% of women and 20% of people aged 15-24 report experiencing high or very high levels of psychological distress, up from rates closer to 5% for both groups 10 years ago.

This section is in three parts. We start with objective measures of health such as life expectancy, then move on to self-reported health, including mental health. The third part looks at the types of health conditions and risk factors that are shaping our overall health.

Objective health indicators

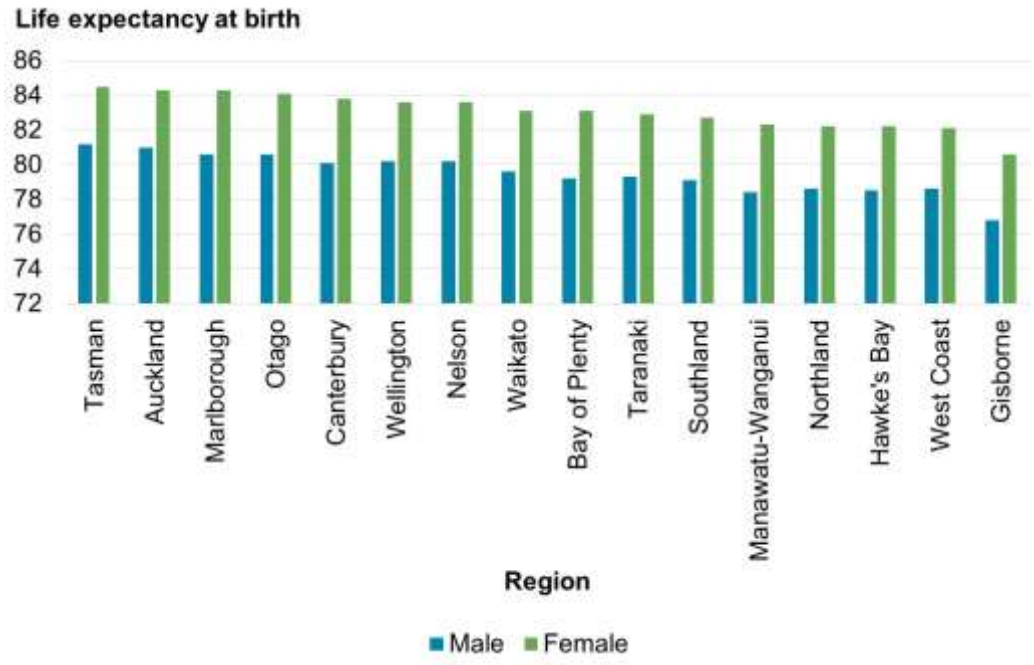
Perhaps the most holistic measure of overall population health is life expectancy at birth. After climbing for many years, the numbers of years an infant under 1 can expect to live has flattened out recently for both boys and girls, with girls having a life expectancy about four years longer than that of boys. There are wide disparities in life expectancy by region, ethnicity and gender.

Figure 2: Life expectancy by gender over time (LSF Dashboard indicator)



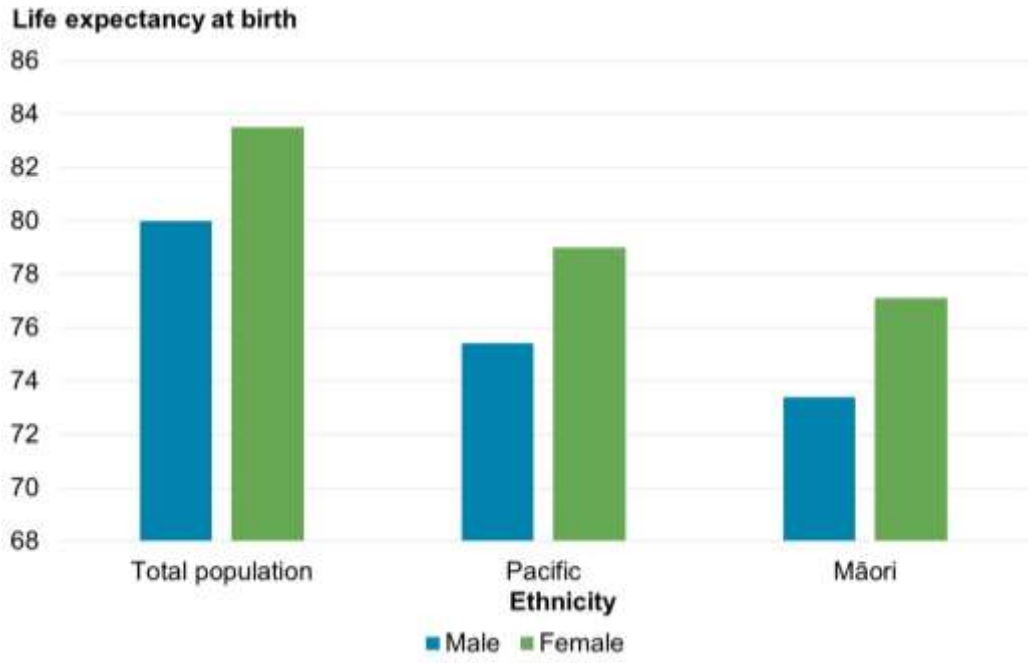
Source: Institute for Health Metrics and Evaluation

Figure 3: Life expectancy by region and gender, 2018 (LSF Dashboard indicator)



Source: Stats NZ

Figure 4: Life expectancy by ethnicity[8] and gender, 2018 (LSF Dashboard indicator)



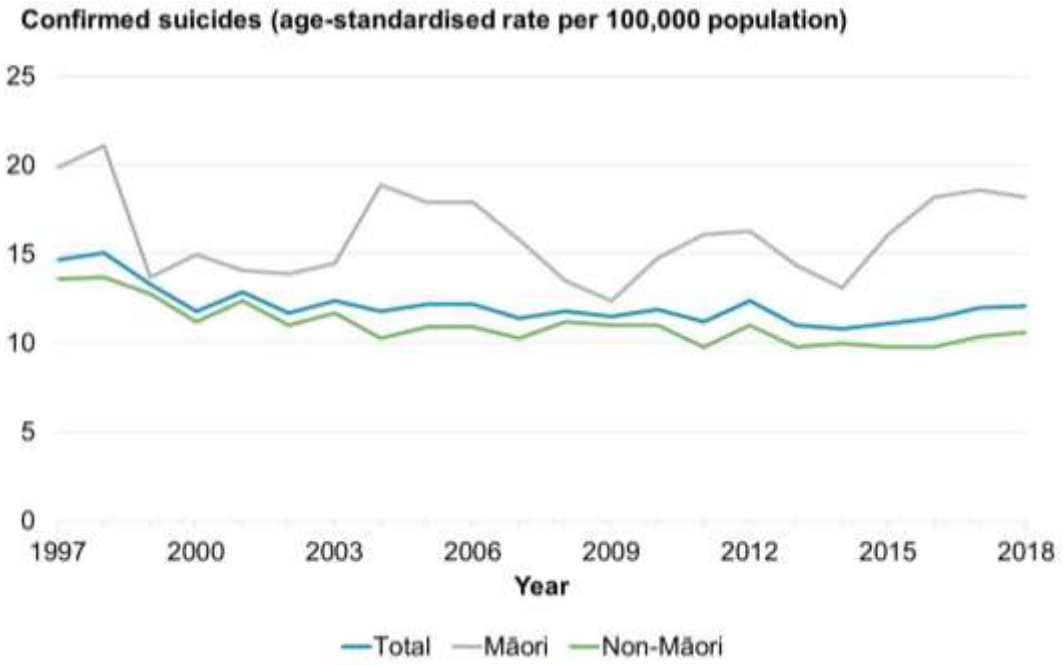
Source: Stats NZ

Lives can be cut short for many reasons. One key indicator we focus on in the LSF Dashboard is suicide rates, as they are evidence of particularly acute ill-being.

Overall suicide rates declined somewhat in the late 1990s but have been reasonably flat since. There is a lot of volatility in the suicide rates for Māori given their smaller population. However they are consistently higher than the rates for non-Māori.

8 Life expectancy for other ethnic groups such as Asian and Middle Eastern, Latin American or African is not reported by Stats NZ.

Figure 5: Suicide rates by Māori/non-Māori over time (LSF Dashboard indicator)[9]



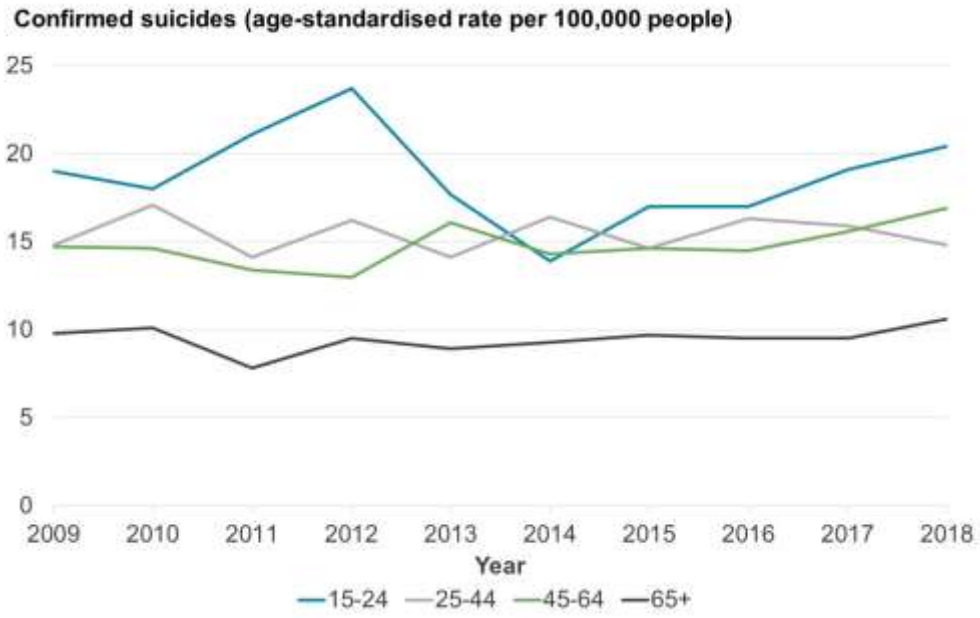
Source: Ministry of Health (New Zealand Mortality Collection)

Our overall suicide rate has been close to that of the median OECD country for many years. However, our rate is still about three to four times higher than Greece and Turkey, the OECD countries that do best on this measure.[10] Our rates of youth suicide are among the highest in the OECD. Our precise rank varies from year to year, but on the most recent (2015) comparison, our youth suicide rate was the highest of any OECD country (OECD, 2017). More-detailed data, not shown in the figures, shows that our youth suicide rate in 1972 was *lower* than any other age group (Ministry of Social Development, 2016). This changed over the following 20 years so that, by 1992, suicide rates for people aged 15-24 were *higher* than for any other age group. The precise rate goes up and down each year, but the overall trend in youth suicide rates since 1992 has been broadly flat.

9 An ethnic breakdown is not available for other ethnic groups. Age standardisation adjusts the raw figures to control for differences in the age profile of each population group, which is important in this case because suicide rates are higher among younger people.

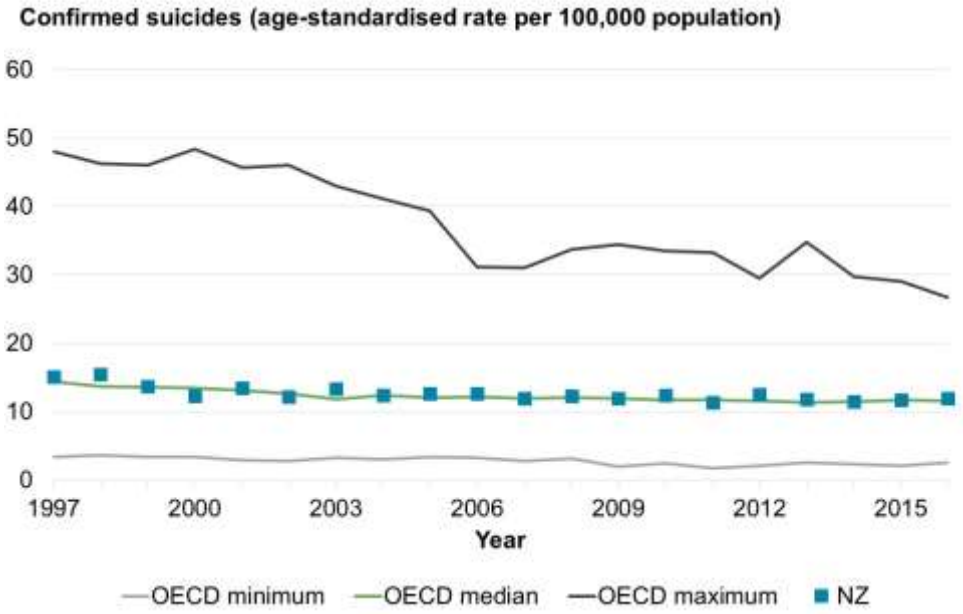
10 Turkey's rate is slightly better than Greece's on the face of it, but Turkey uses a different methodology to calculate its rate so its ranking should be treated with caution.

Figure 6: Suicide rates by age over time (LSF Dashboard indicator)



Source: Ministry of Health (New Zealand Mortality Collection)

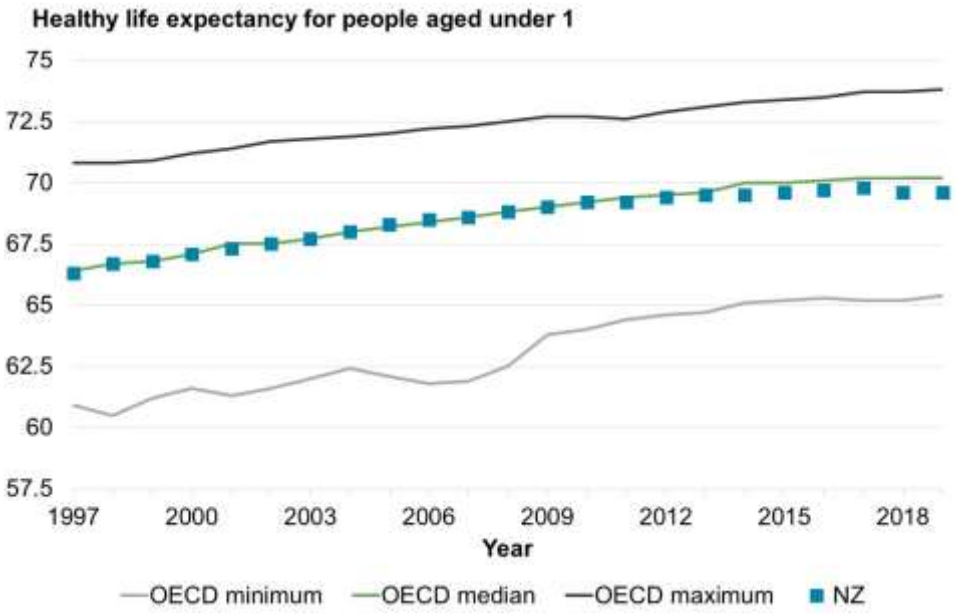
Figure 7: Suicide rates across the OECD over time (LSF Dashboard indicator)



Source: OECD

A complementary measure to life expectancy is healthy life expectancy. This measure is sensitive both to length of life and to morbidity that can reduce the quality of life. Along with overall life expectancy, the number of years a baby can expect to live in good health has also flattened out, and we have now fallen slightly below the OECD median for this measure.

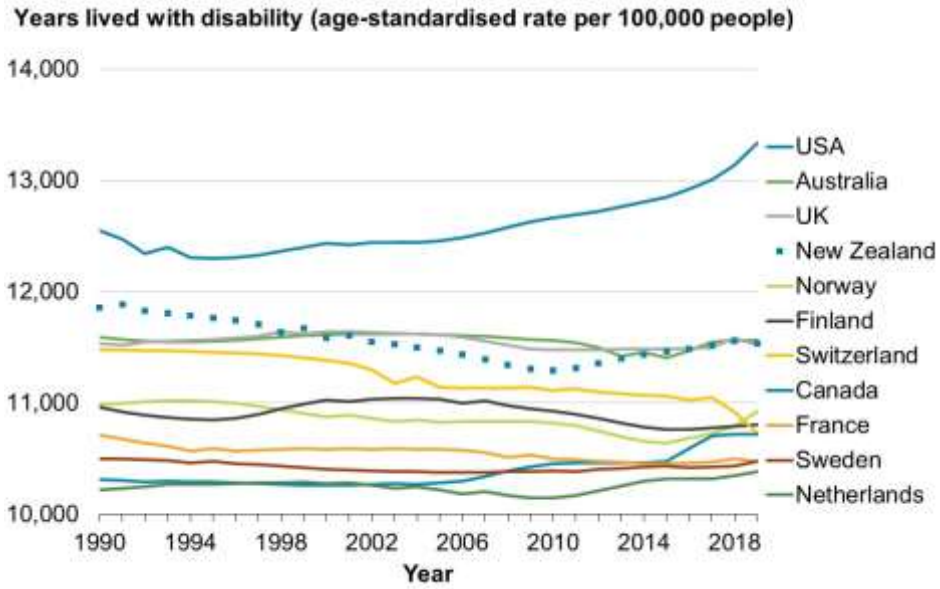
Figure 8: Healthy life expectancy across the OECD over time (OECD Dashboard indicator)



Source: Institute for Health Metrics and Evaluation

This is because, after adjusting for our age structure, the numbers of years we live in poor health has increased since 2010, reversing an improving trend prior to this. New Zealanders spend more years of their life in poor health on average than people in most highly developed countries (although we are doing a lot better than the USA on this metric, and Australia and the UK have rates very similar to ours).

Figure 9: Years lived with disability[11] over time, selected highly developed countries



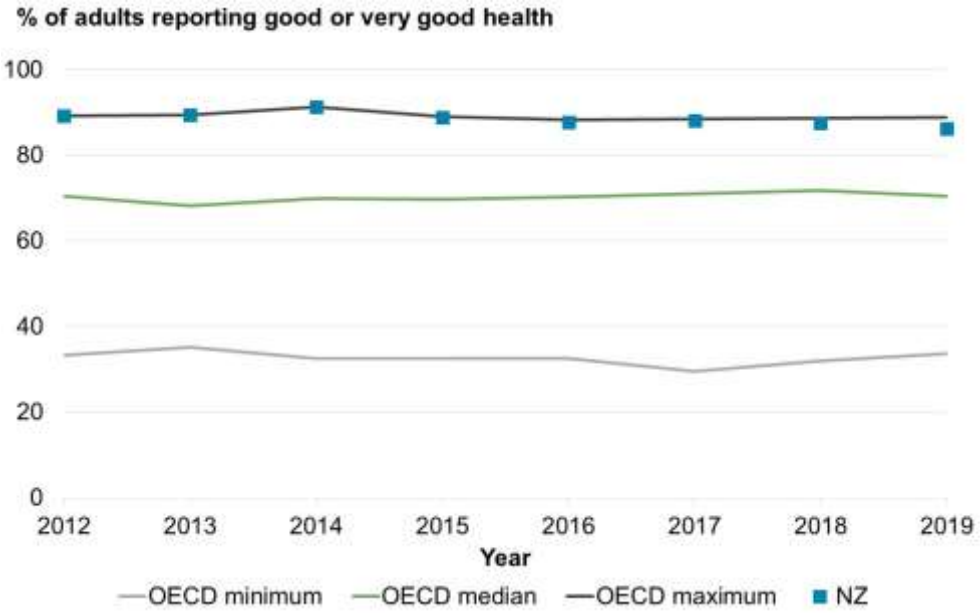
Source: Institute for Health Metrics and Evaluation

11 Years lived with disability is a measure reflecting the impact an illness has on quality of life before it resolves or leads to death.

Self-reported health

When asked by researchers from the New Zealand Health Survey, most of us in Aotearoa New Zealand say we feel healthy. We appear to do quite well on this measure in comparison to other OECD countries, but not every country uses the same reporting scale and the OECD (2020) suggests that our results may be biased upwards as a result.

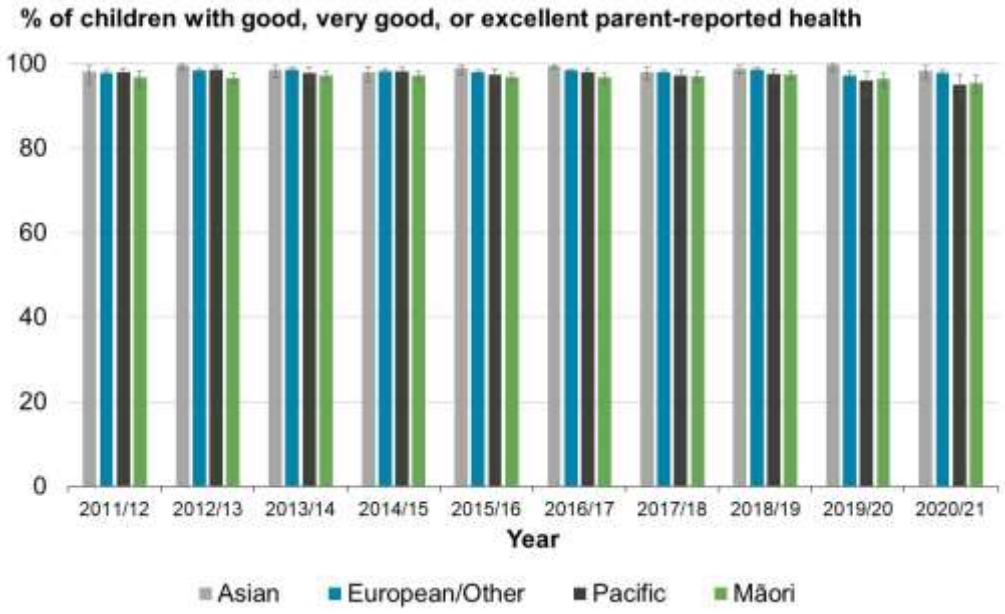
Figure 10: Self-reported health across the OECD over time (LSF Dashboard indicator)



Source: OECD

New Zealand Health Survey researchers also ask respondents to report on the state of their children's health. Parents generally report their children to be healthy, particularly parents of Asian children.

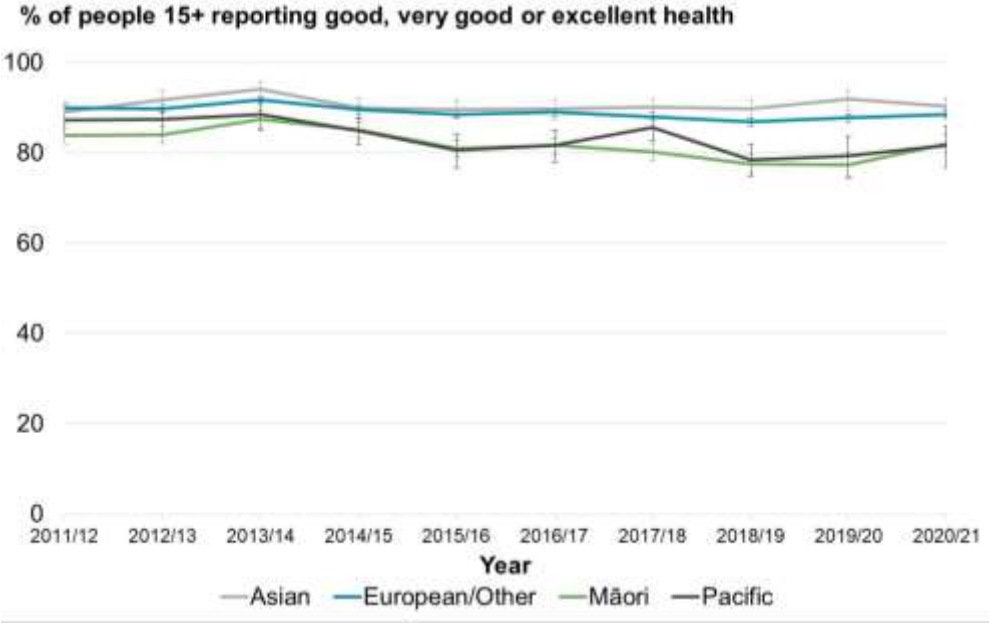
Figure 11: Parent-reported health of children by ethnicity over time (LSF Dashboard indicator)



Source: Ministry of Health (New Zealand Health Survey)

The self-reported health of adults appears to have fallen slightly over time, particularly among Māori and Pacific Peoples. However, for most comparisons between years, the difference is not statistically significant.

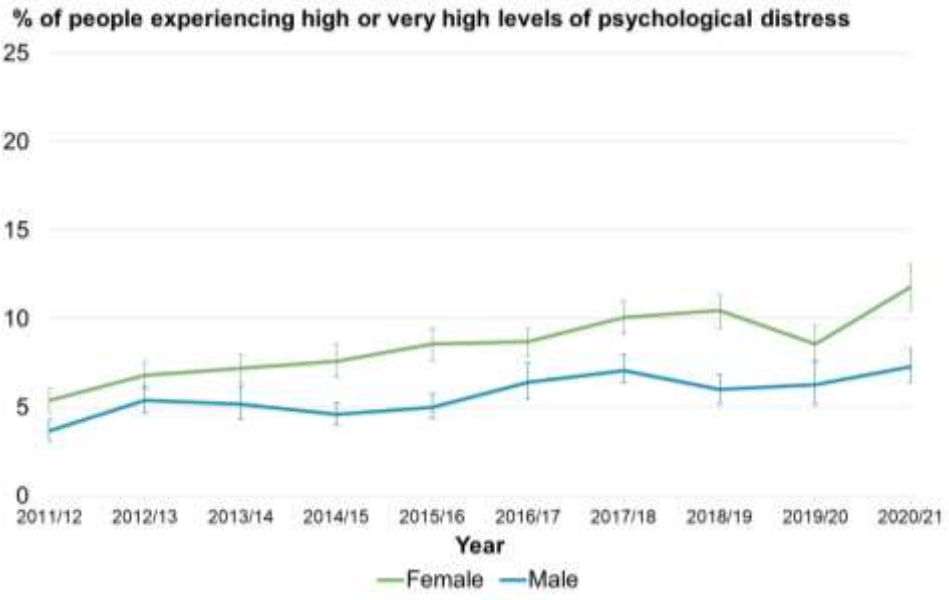
Figure 12: Self-reported adult health by ethnicity over time (LSF Dashboard indicator)



Source: Ministry of Health (New Zealand Health Survey)

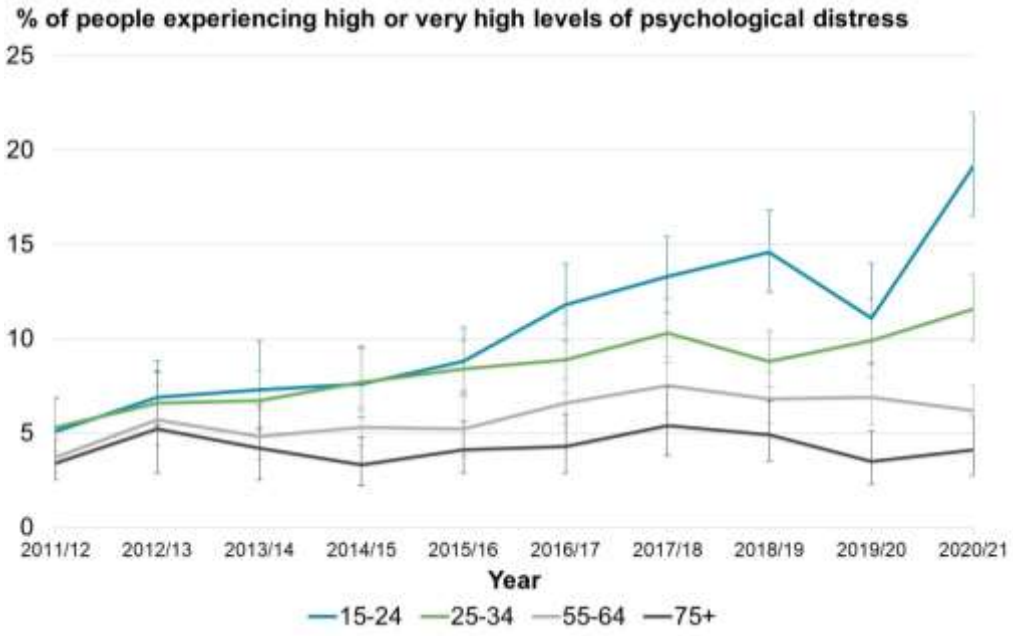
The New Zealand Health Survey also includes questions from the Kessler Psychological Distress Scale, a screening tool for potential anxiety and depression conditions. These questions show a large increase in levels of psychological distress in recent years according to this measure, particularly among women and young people.

Figure 13: Psychological distress by gender over time (LSF Dashboard indicator)



Source: Ministry of Health (New Zealand Health Survey)

Figure 14: Psychological distress by selected age groups over time (LSF Dashboard indicator)

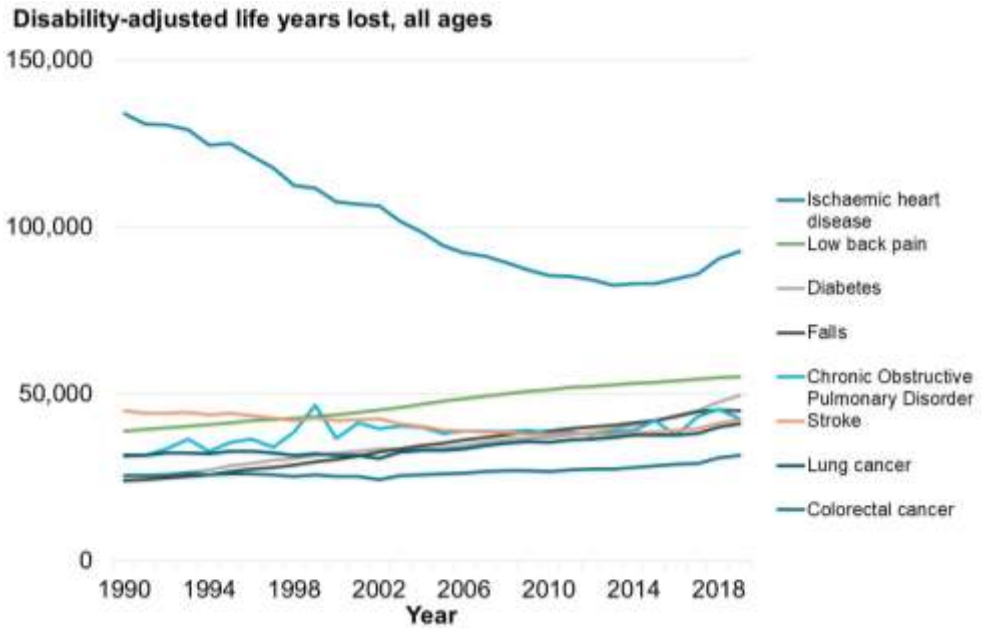


Source: Ministry of Health (New Zealand Health Survey)

Causes of health loss

The pattern of health loss has shifted significantly over time. Although heart disease still causes substantial death and disability, it has declined in importance over time while other conditions such as musculoskeletal disorders have placed a steadily larger health burden on the population. One of the fastest-growing causes of health loss is diabetes. The number of disability-adjusted life years lost due to this disease has doubled over the past 30 years, a much higher rate of growth than for any other leading condition. Detailed data, not shown in the figures, reveals that rates of diabetes are particularly high among Pacific Peoples and Indian people and particularly older people in these ethnic groups (Ministry of Health, 2020).

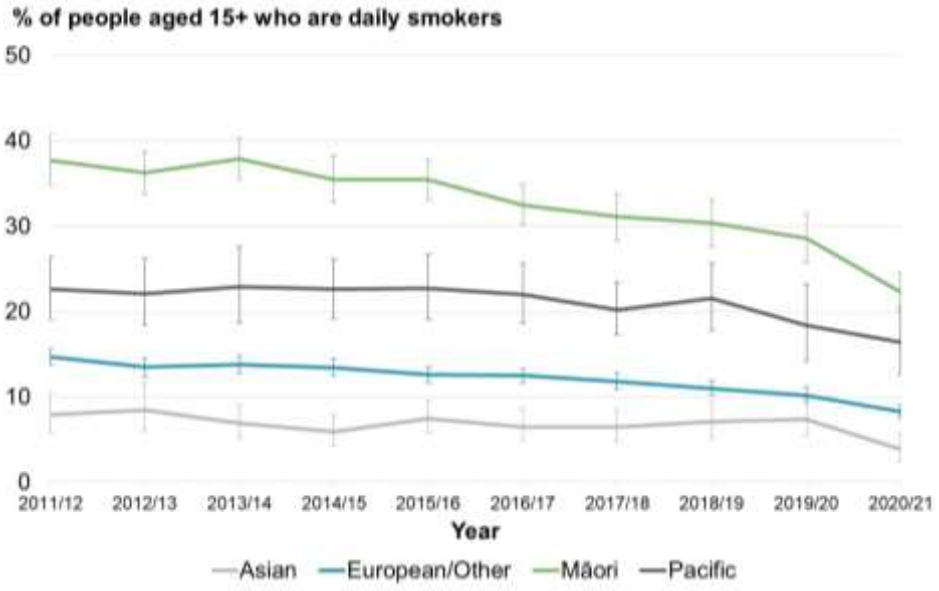
Figure 15: Leading causes of health loss over time[12]



Source: Institute for Health Metrics and Evaluation

Many top causes of death and disability can be prevented to some extent through lifestyle factors. Smoking remains the risk factor associated with the greatest health loss in Aotearoa New Zealand (Global Burden of Disease Study, 2020). This is even though rates of smoking have steadily declined over time across all ethnic groups. The gap between ethnicities has closed somewhat, but Māori and to a lesser extent Pacific Peoples still have much higher smoking rates than other ethnic groups.

Figure 16: Smoking rate by ethnicity over time

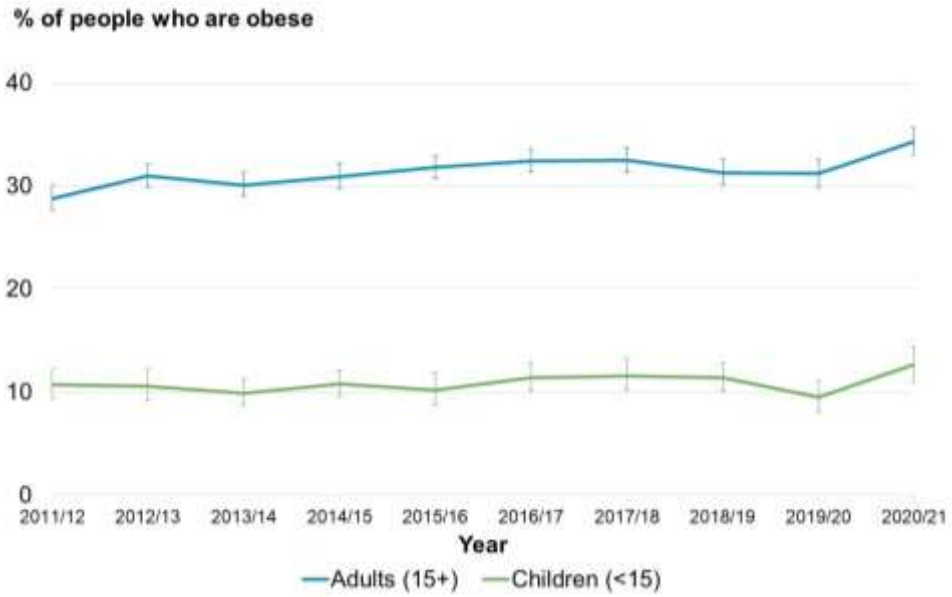


Source: Ministry of Health (New Zealand Health Survey)

12 The disability-adjusted life year (DALY) is a time-based measure that combines years of life lost due to premature mortality (YLLs) and years of life lost due to time lived in states of less than full health or years of healthy life lost due to disability (YLDs). One DALY represents the loss of the equivalent of one year of full health.

The second-highest risk factor is a high body mass index. Obesity rates of adults have climbed over time, with over a third of people over 15 now obese. Obesity rates of children are lower but also appear to have increased slightly, although the change is not statistically significant.

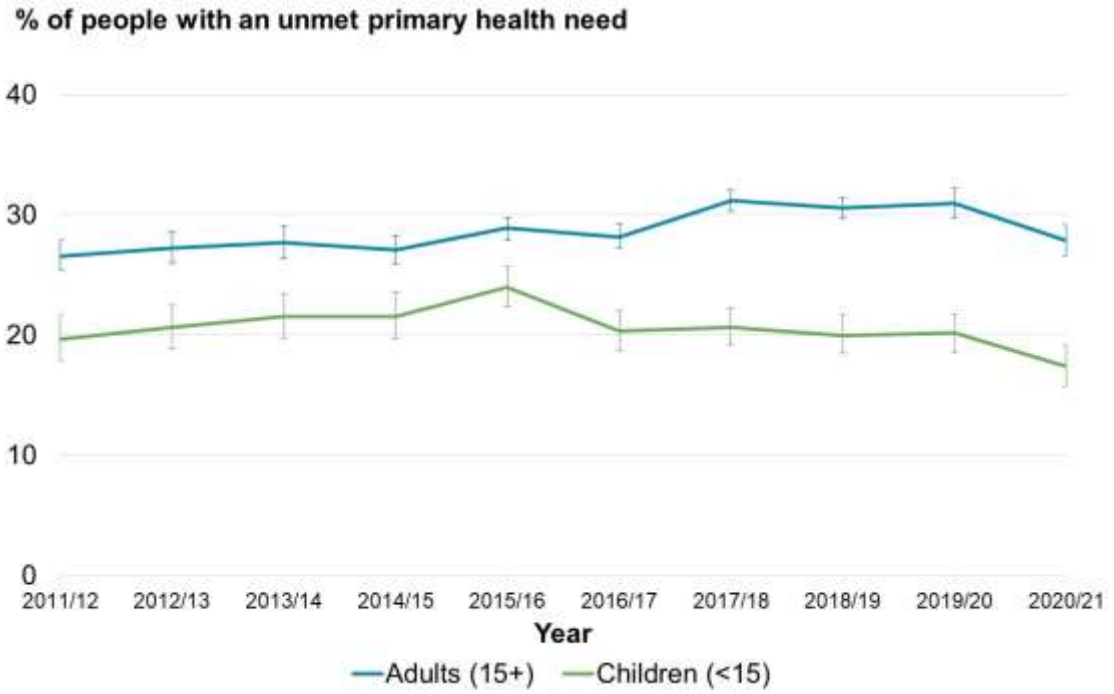
Figure 17: Obesity rates of adults and children over time



Source: Ministry of Health (New Zealand Health Survey)

Another risk factor for poor health is a lack of access to primary healthcare. The Ministry of Health collates data from the New Zealand Health Survey on the number of children and adults who have not visited a GP or after-hours centre because of cost, lack of transport or a lack of available appointments. These rates have declined in recent years for children but are reasonably flat for adults, more than one in four of whom has an identified unmet primary healthcare need.

Figure 18: Unmet primary care needs of adults and children over time (LSF Dashboard indicator)



Source: Ministry of Health (New Zealand Health Survey)

Further reading and links:

Health and Independence Reports | Ministry of Health

New Zealand Health Survey Data Explorer

Knowledge and skills

Overview

Having knowledge and skills appropriate to one's life stage and continuing to learn through formal and informal channels.

Knowledge and skills are foundational to our capability to live lives we value. They are of obvious importance when it comes to our participation in the labour market and are also associated with other aspects of our wellbeing such as health (Scott, 2021) and willingness to trust and cooperate with each other (Satherley, 2021).

The general state of our knowledge and skills is best described as modest in comparison to other countries, with concerning trends and longstanding variation and inequities in achievement.

A precise statement of our average level relative to other countries is difficult to make in general because the picture is different depending on the comparison countries, the age group in question, the type of skill and whether we look at assessed skills or formal qualification.

The picture is best for adult literacy and proficiency at problem-solving with computers in comparison to OECD countries. Our adult numeracy and adult qualification rates are more modest in comparison to other OECD countries.

Our rates of childhood skills are middling overall, although the international assessments at age 15 are slightly rosier than those for year 5 and year 9 students. We do slightly better on comparisons of reading ability than we do for maths ability. However, the variation in outcomes between individuals is higher than normal for OECD countries. Our childhood achievement levels are less impressive when we expand the group of comparison countries to include high-performing non-OECD countries like Singapore.

What is of most concern, however, is that the skills of our children appear to be declining over time. There is a declining trend across all ethnicities, with the gap between ethnicities closing marginally at best and through a process of levelling down rather than levelling up. It is also concerning that school attendance also appears to be falling and is particularly low for schools in more-deprived areas.

This section is in two parts: schooling and adult skills.

Schooling

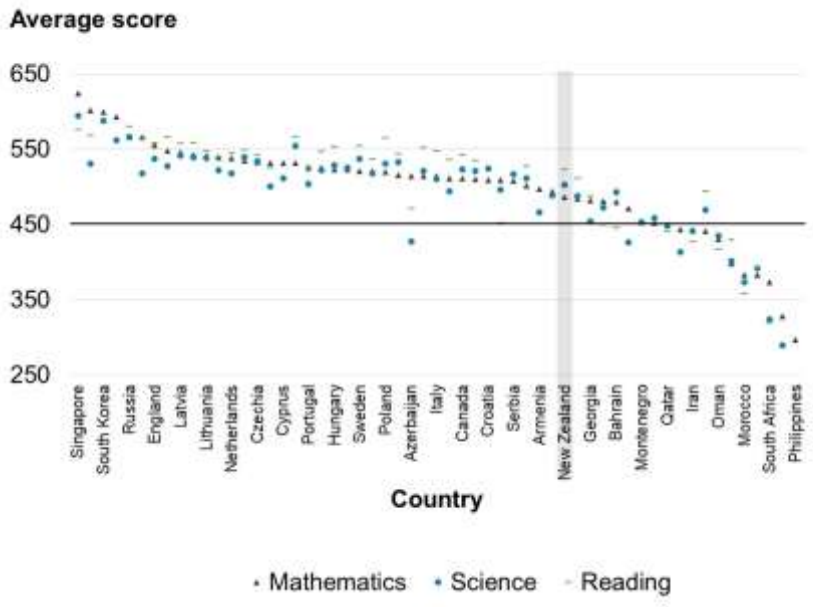
There are two main sources of data to see how our students in Aotearoa New Zealand are achieving in comparison to their peers in other countries.

One source is the PIRLS and TIMSS studies overseen by the International Association for the Evaluation of Educational Achievement (IEA). The Progress in International Reading Literacy Study (PIRLS) assesses the reading literacy of children in middle-primary, in this country meaning year 5. The Trends in International Mathematics and Science Study (TIMSS) assesses mathematics and science achievement in year 5 and year 9.

The other main data source is the Programme for International Student Assessment (PISA) overseen by the OECD. PISA measures the reading, mathematics and science skills of 15-year-olds. Both studies include OECD and non-OECD countries, but PISA covers more countries and has more-comprehensive coverage of the OECD.

Starting with the youngest students, the data for year 5 students shows we are far from the head of the pack for reading, science and mathematics. The PIRLS/TIMSS methodology compares countries against a benchmark figure of 500, which was calculated as the mean level of achievement across students in all participating countries in 1995 (maths and science) or 2001 (reading). Our country is quite close to this benchmark figure in all three areas of achievement, whereas some other rich countries achieve results well above this benchmark and those that fall below it tend to be middle-income countries. Like most countries, our achievement levels for the three subjects are similar, although our reading is slightly better and our mathematics is slightly worse.

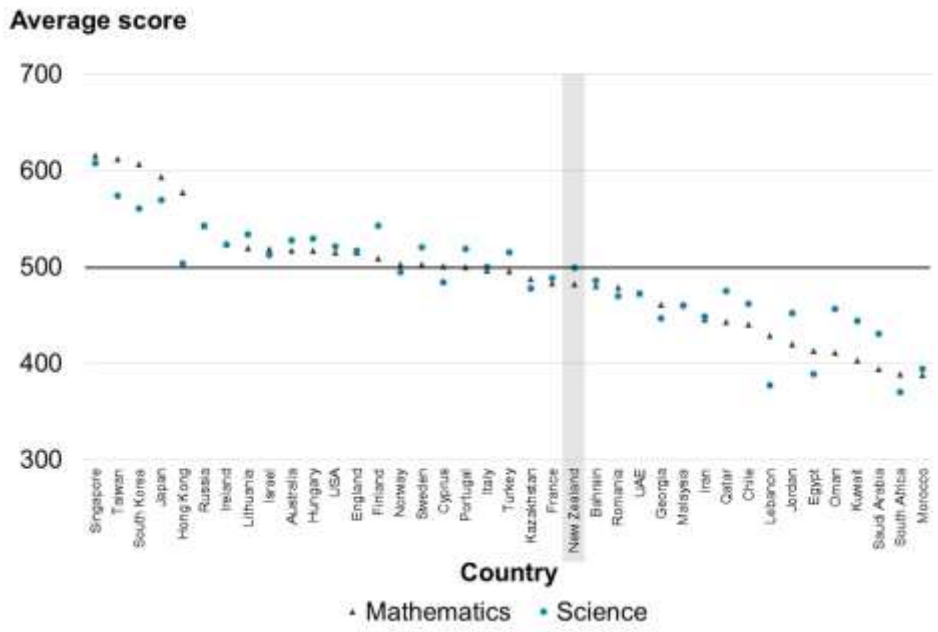
Figure 19: Average year 5 achievement scores, PIRLS 2016 and TIMSS 2019, ordered by mathematics score



Source: International Association for the Evaluation of Educational Achievement

The situation is similar for year 9 students, who on average are slightly below the benchmark score of 500 for both mathematics and science. However, Aotearoa New Zealand is one of many countries bunched close together near the benchmark. It is only the four East Asian tigers and Japan that really stand out from the crowd, with results a full standard deviation or so above the benchmark score of 500.[13]

Figure 20: Average year 9 achievement scores, TIMSS 2019, ordered by mathematics score



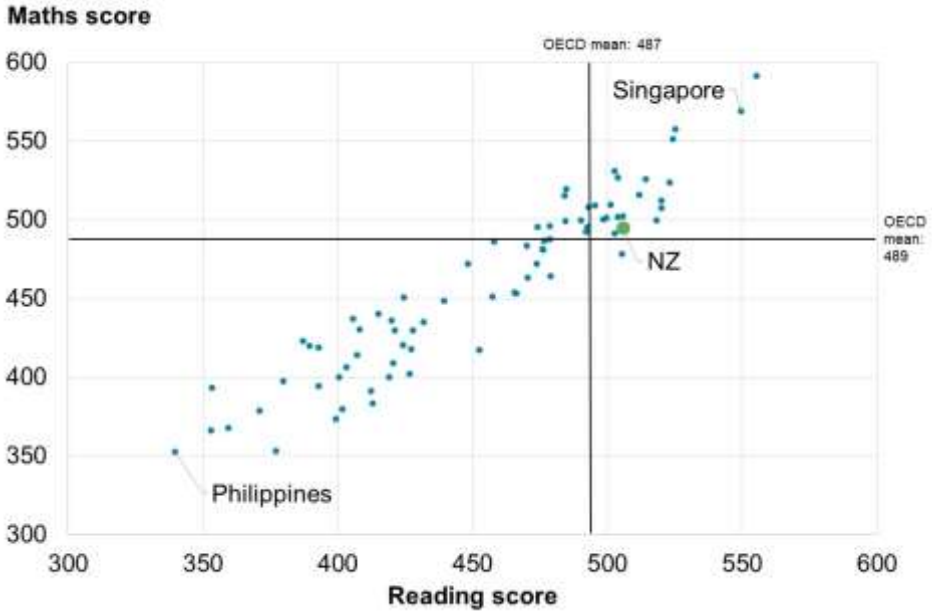
Source: International Association for the Evaluation of Educational Achievement

This bunching can also be seen in the PISA assessments at age 15. We include our PISA results in the LSF Dashboard as a headline indicator of knowledge and skills, given the wider country coverage in comparison to PIRLS and TIMSS and given that, by age 15, the full impacts of schooling can be better observed.

The latest PISA results are from 2018 and cover 77 OECD and non-OECD countries in total. Among the full group of countries, we are among several that are bunched together near or slightly above the OECD mean for both reading and maths. Although commentators often focus on our maths scores, our reading and maths scores are quite similar. However, because several countries have maths scores slightly above ours and reading scores slightly below, our ranking for reading is much more impressive than our ranking for maths. Our position relative to other countries is also a little better for the age 15 results than for the results for earlier years.

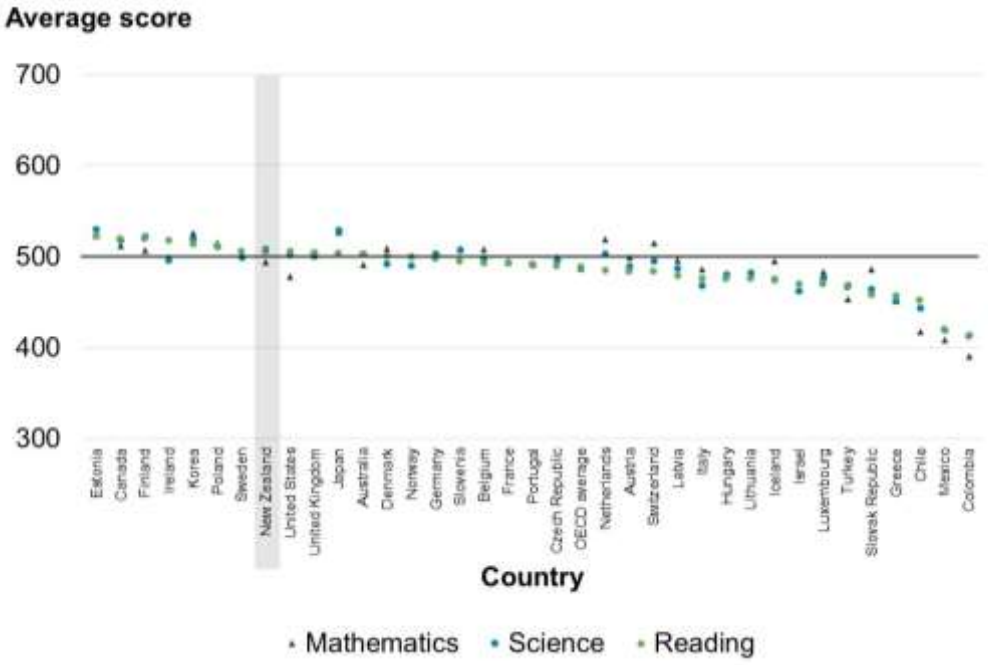
13 The scoring scale has been set such that a standard deviation away from the mean of 500 is 100 scale points.

Figure 21: Age 15 maths and reading scores, all PISA countries, 2018



Source: OECD

Figure 22: Age 15 PISA scores, OECD countries only, 2018, ordered by reading score (LSF Dashboard indicator)

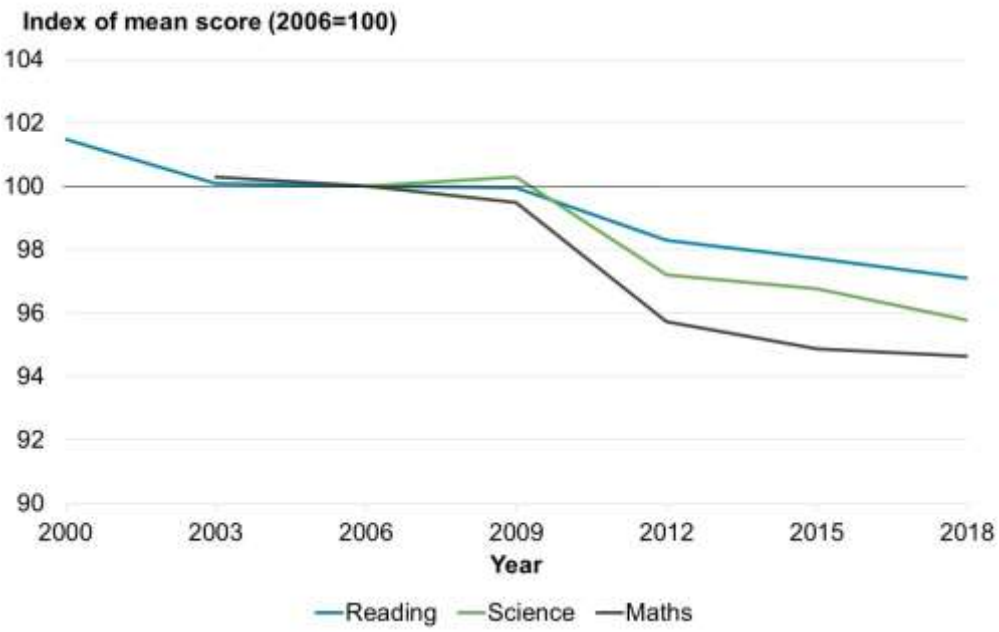


Source: OECD

Our position looks somewhat better if we restrict our attention only to OECD countries. This is because many of the highest-performing countries such as Singapore, Russia, and Taiwan are not members of the OECD and also because the OECD includes several middle-income countries such as Colombia, Mexico and Chile with scores much more modest than ours.

But although our relative position can be described as good, fair or average depending on the comparison, the trend over time is unambiguously poor. Figure 23 illustrates the trend for average PISA scores. It shows a downwards trajectory for all three subjects, with the fastest decline being for mathematics achievement. The PIRLS and TIMSS data, not shown, also show a general decline over time (Mullis et al., 2016, 2019).

Figure 23: Trends in average PISA scores for New Zealand over time (LSF Dashboard indicator)[14]

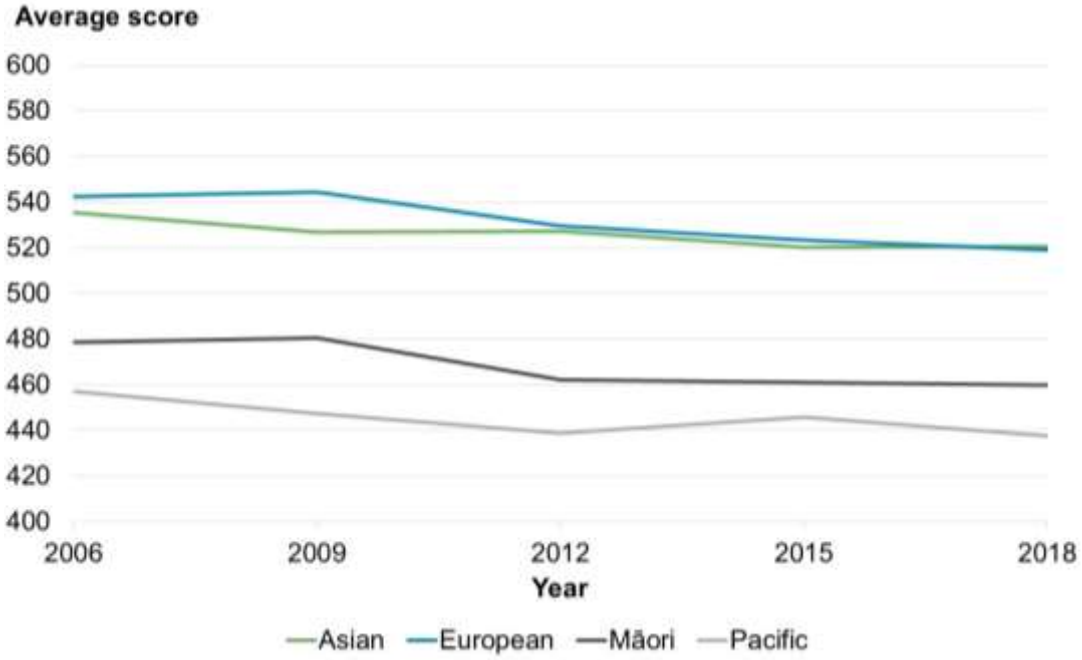


Source: OECD

This downwards trend can be seen among all major ethnic groups as well as across all subject areas. The longstanding gap in achievement levels between ethnic groups is narrowing very slightly, if at all, and through a process of levelling down rather than levelling up.

14 The scores have been indexed such that the score for each subject is set to 100 for 2006. This allows the relative change to be compared precisely, showing that the mathematics score in 2018 was a little under 95% of the 2006 score, a larger relative drop than for the other two subjects.

Figure 24: Trends in NZ PISA scores by ethnicity over time (LSF Dashboard indicator)

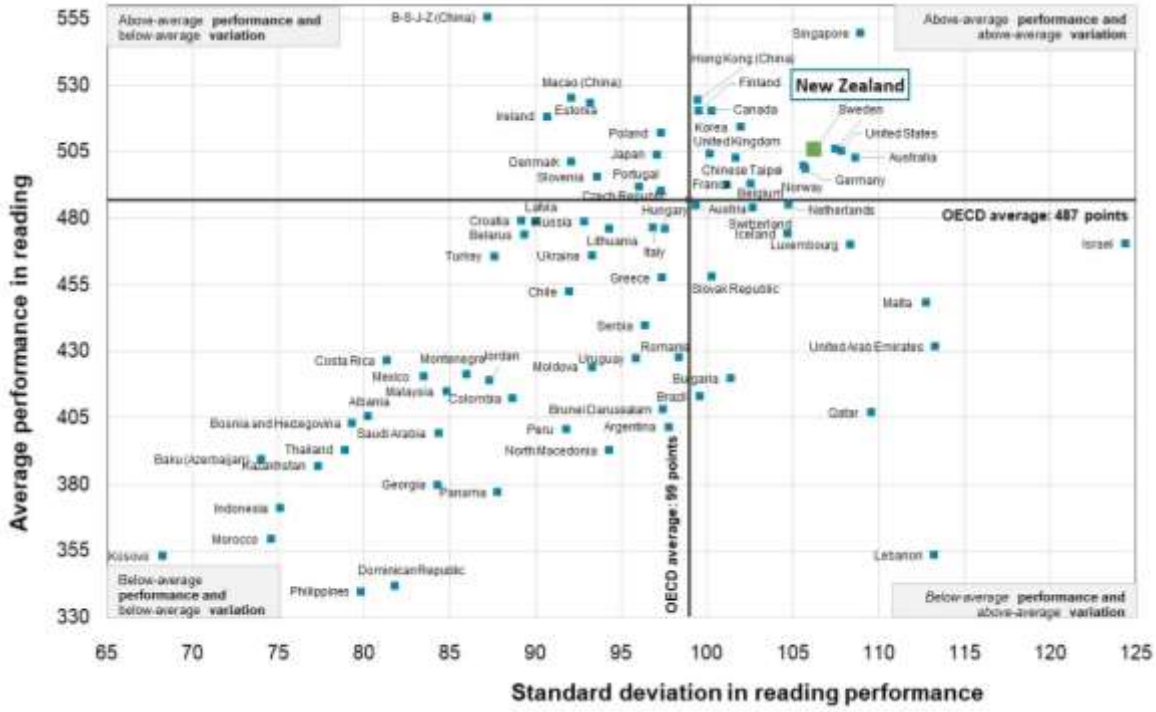


Source: OECD

Another thing that is unambiguously poor is the variability of achievement. The gap between the highest-achieving and lowest-achieving students is wide by OECD standards. One important type of variation is between ethnic groups, as shown above. Another is between individual students of all kinds, as shown in Figure 25 for reading. Aotearoa New Zealand is in the group of countries that has a higher than average level of achievement but also higher than average level of variation in achievement in reading.

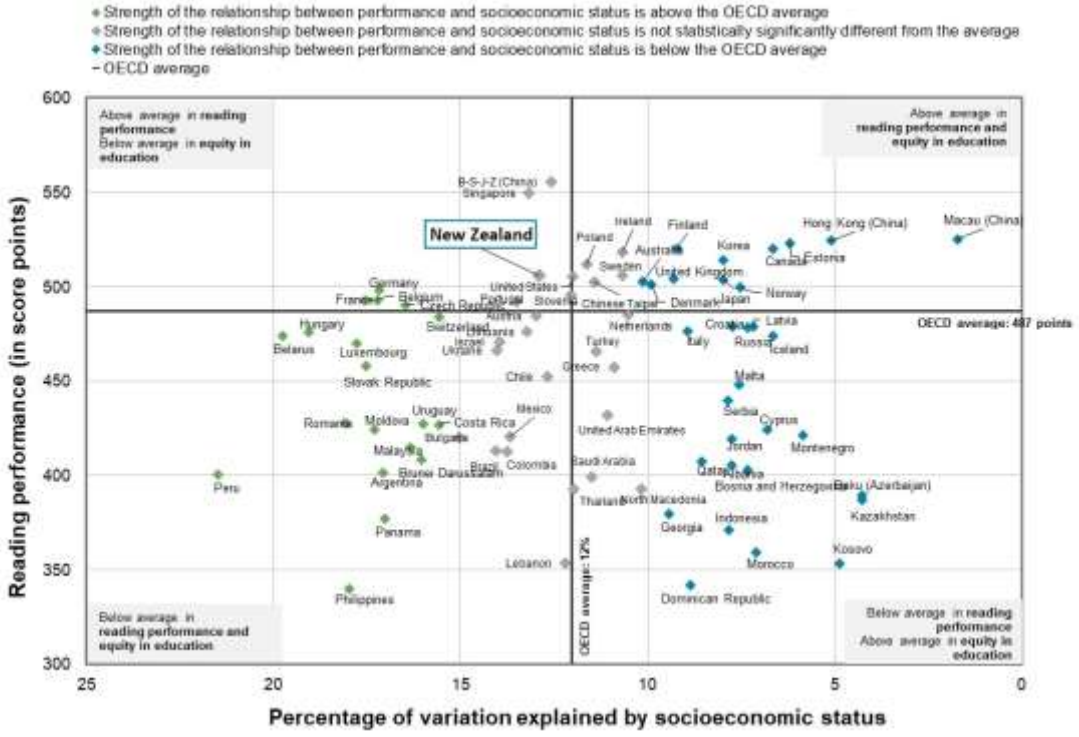
This variation is associated with variation in socioeconomic status. In regression analysis, socioeconomic status explains about as much of the variation in achievement as it does for the average OECD country.

Figure 25: Variation in PISA scores across countries, 2018



Source: OECD

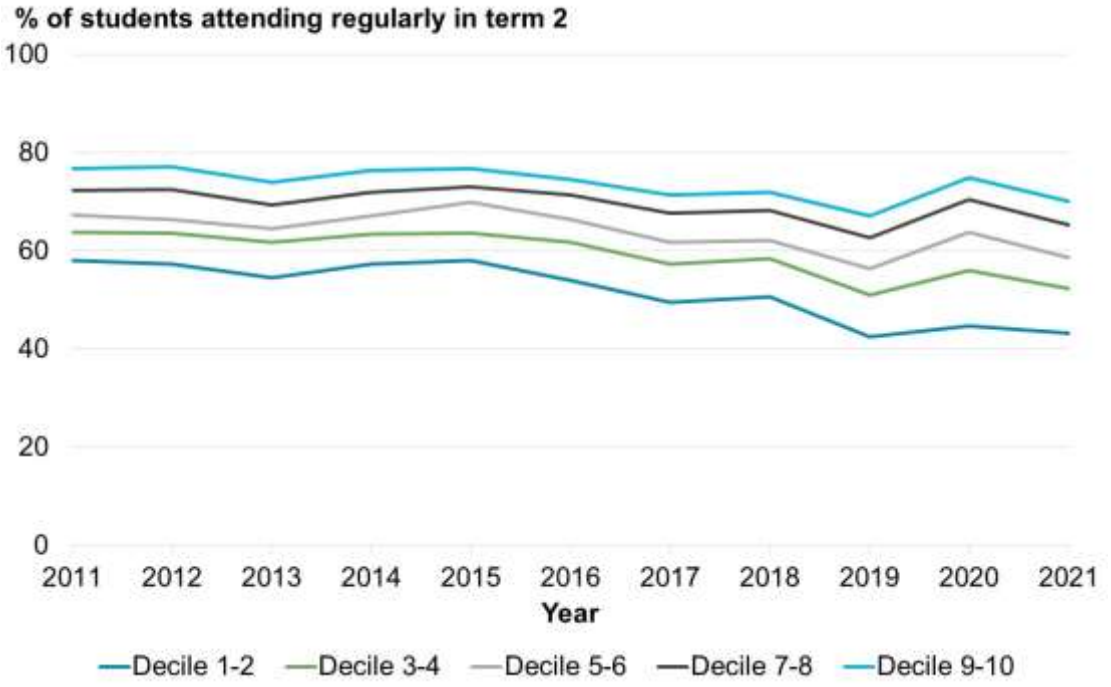
Figure 26: Relationship between socioeconomic status and variation in PISA scores, 2018



Source: OECD

This variation in outcomes across socioeconomic groups is associated with variation in attendance, with regular attendance being much lower in schools in more-deprived communities. There is a general trend towards lower attendance across all deciles. While attendance increased in 2020 amid the interruptions of COVID-19, in 2021, attendance has resumed its general downwards trend.

Figure 27: Regular attendance rates across state and integrated schools by school decile over time (LSF Dashboard indicator)



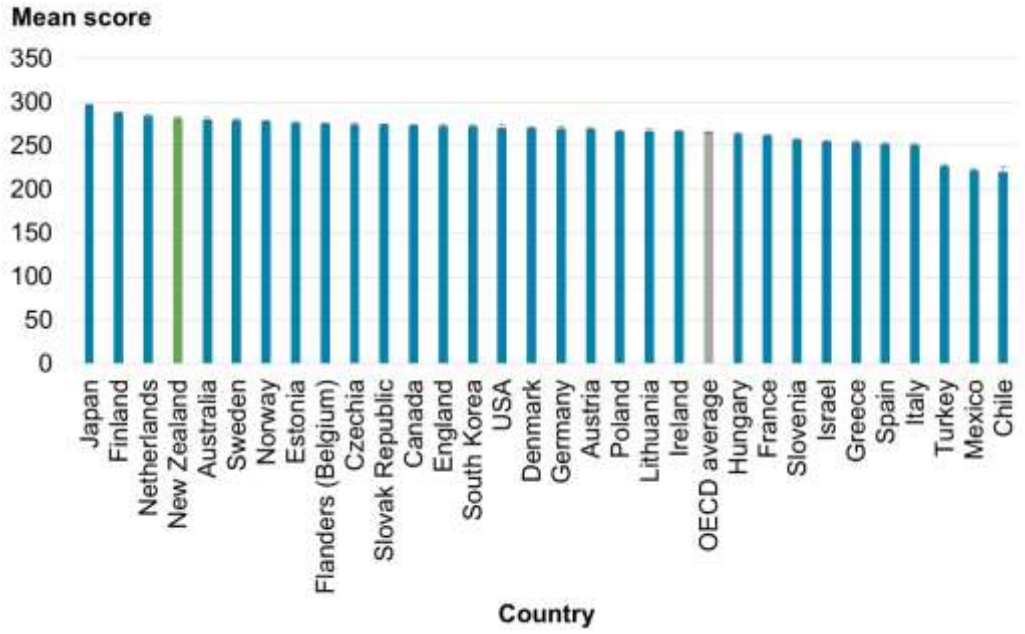
Source: Ministry of Education

Adult skills

Skill levels of school-aged children are a good leading indicator of the future skill base of the working-age population. But with high rates of inward and outward migration and the potential for further learning after age 15, the adult population can have a different skill mix to children. And when it comes to adult skills, the story is somewhat better for Aotearoa New Zealand than for children.

Data from the OECD Survey of Adult Skills and its forerunners suggest that adult literacy levels in Aotearoa New Zealand are among the highest in the OECD. While methodological differences between surveys over time mean it is difficult to assess trends, the data (not shown) suggests that we may have improved on this measure in recent years (Ministry of Education & Ministry of Business, Innovation and Employment, 2016a).

Figure 28: Average scores for adult literacy across the OECD, 2018



Source: OECD

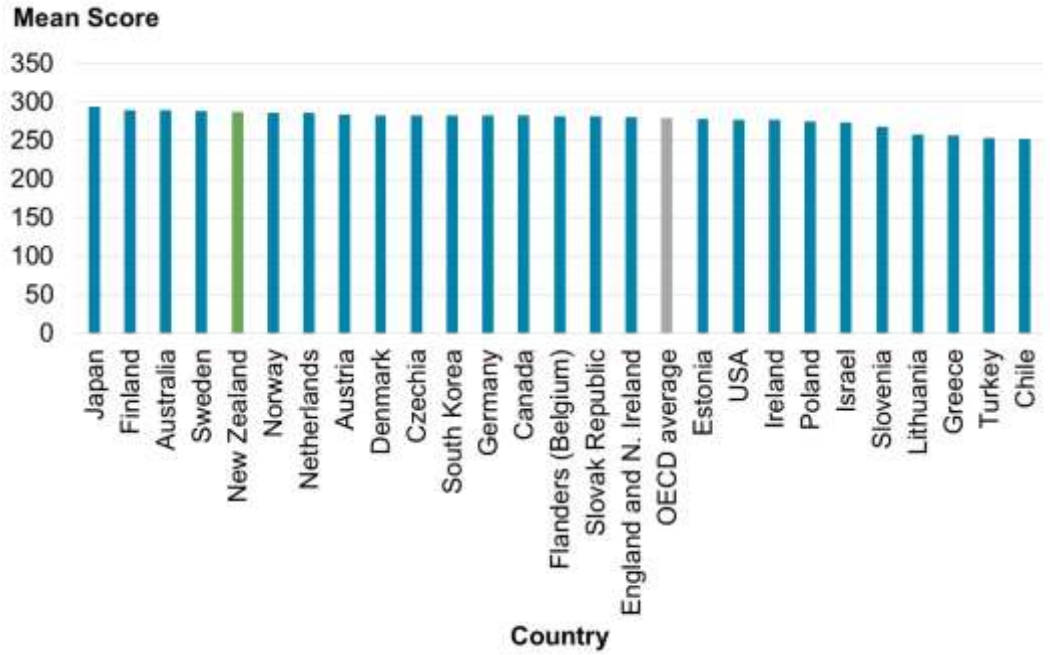
The same OECD study also assesses the ability of people to solve problems in technology-rich environments. In practical terms, this is the ability to use computers to acquire and evaluate information, communicate with others and perform practical tasks. All tasks are completed on a computer that simulates real-world tasks with standard applications. Some skills required are:

- completing tasks using different everyday computer applications
- finding specific information in everyday computer applications, and
- using common functions to complete tasks in everyday computer applications.

On this measure, the average problem-solving skills in Aotearoa New Zealand are also among the highest in the OECD.

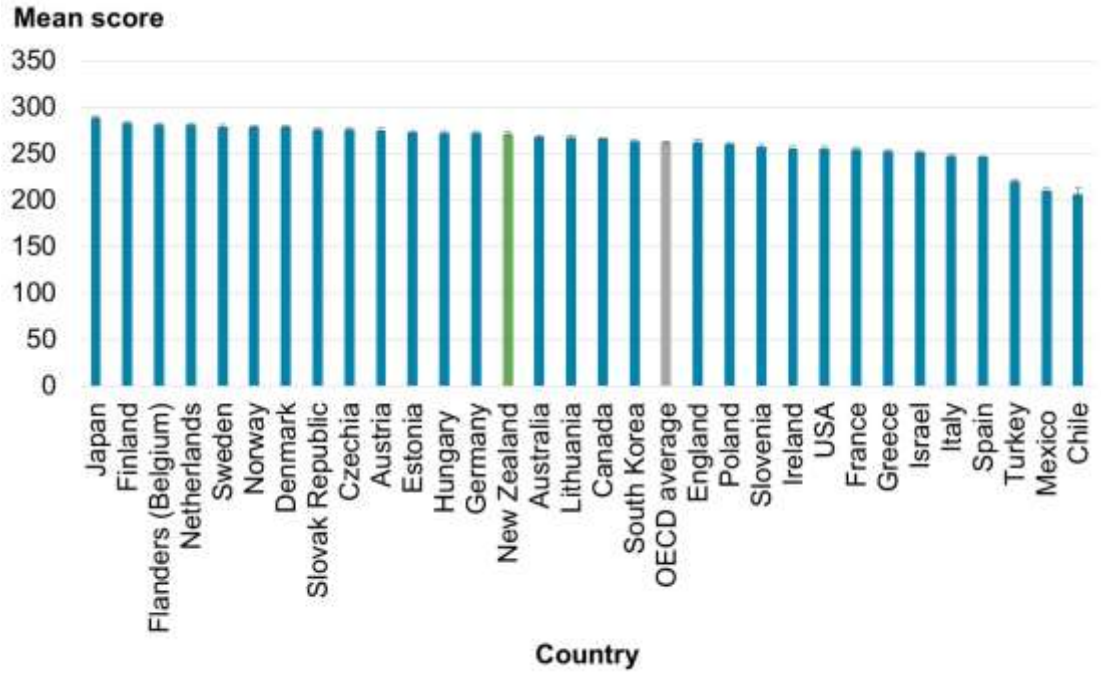
However, consistent with the results for children, our adult numeracy scores are less impressive, even if they are still above the OECD average. This could be important for wellbeing as our economy continues to evolve, as numeracy is particularly important for digitally intensive industries (Grundke et al., 2018) and is also associated with a lower probability of unemployment (OECD, 2019c).

Figure 29: Average scores for problem-solving in technology-rich environments across the OECD, 2018



Source: OECD

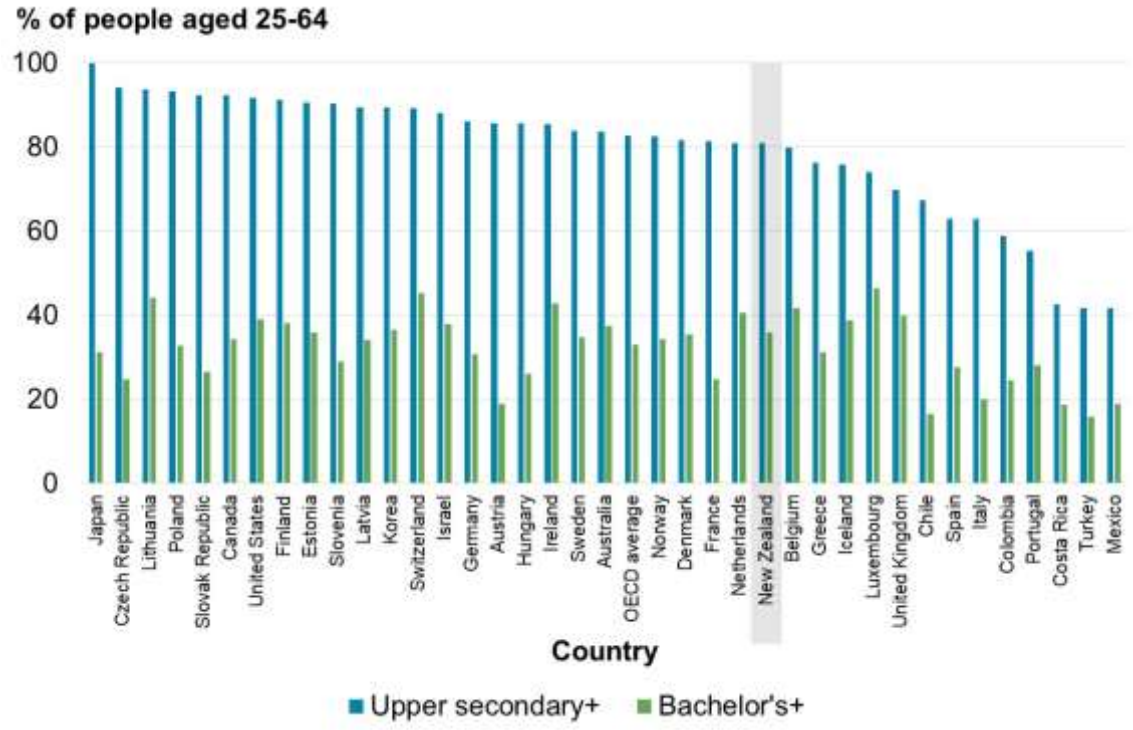
Figure 30: Average scores for adult numeracy across the OECD, 2018



Source: OECD

However, despite the assessed skills of our adult population being generally impressive, we have relatively modest rates of formal qualification, even if both Level 2+ and Level 7+ rates have improved steadily over time. Compared to a rate of 68% in 2004, a little over 80% of people aged 25-64 now have at least NCEA Level 2 or equivalent, but this is still slightly below the OECD average. Compared to a rate of 24% in 2004, about 36% of people aged 25-64 now have at least a bachelor's degree (or equivalent), which is a little above the OECD average.

Figure 31: Qualification levels across the OECD, 2018, ordered by rates of upper secondary qualification (LSF Dashboard indicator)



Source: OECD

Further reading and links:

PISA 2018 reports

PIRLS 2016: New Zealand's Achievement

Education at a Glance (OECD)

Skills in New Zealand and Around the World

Cultural capability and belonging

Overview

Having the language, knowledge, connection and sense of belonging necessary to participate fully in one's culture or cultures and helping others grow their cultural capability and feel a sense of belonging.

Cultural capability and belonging speaks to our ability to connect with others who share in a culture with us, including our cultural ancestors such as Porourangi, Confucius and Adam Smith. To some extent, all knowledge is cultural, so this domain overlaps substantially with the previous domain. In this domain, we focus on a subset of knowledge and skills such as language that are necessary for participation in a culture as a living, dynamic thing. We also recognise the relational aspect of culture and the sense of belonging that is created through regular interaction. This aspect overlaps with the work, care and volunteering, family and friends, and leisure and play domains.

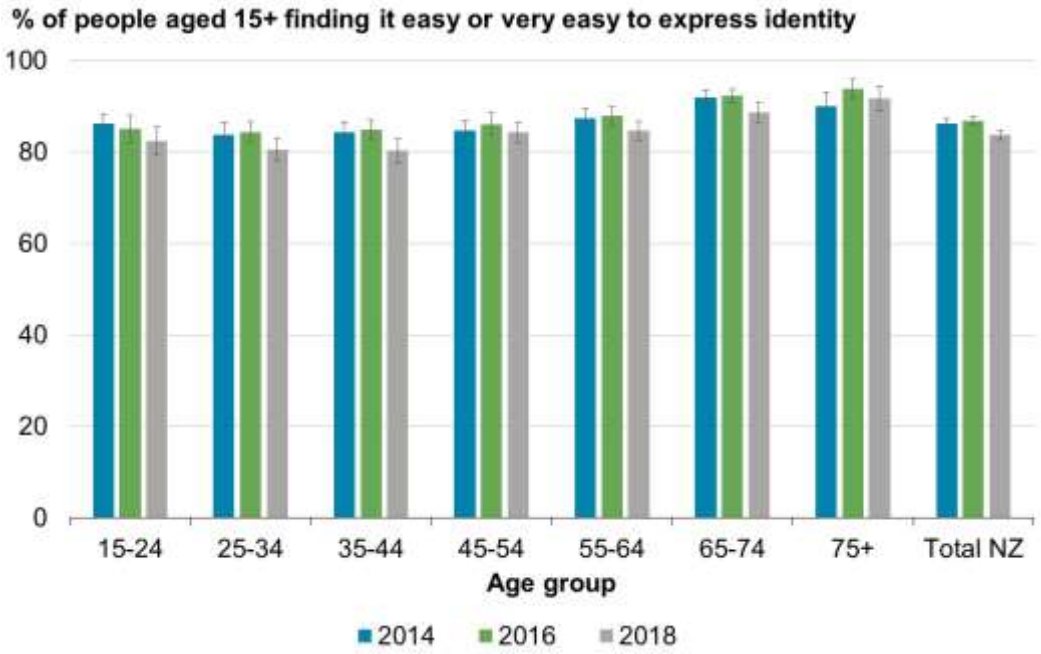
Cultural capability and belonging is a wellbeing domain that is conceptually very important but for which we unfortunately have only relatively patchy information and nothing in the way of international comparisons. The information we do have paints a generally positive picture, with high rates of self-reported belonging and ability to express identity, especially among older people. Language information shows that the long decline in the number of te reo Māori speakers has levelled off, although only about 20% of tangata whenua now say they can have a conversation about everyday things in te reo Māori. In general, tangata whenua have a fairly low level of multilingualism, second only to Pākehā who can speak only 1.1 languages on average. People of Asian ethnicity are the most polyglot, although the average number of languages spoken by each ethnic group, including Asians, has fallen over the past three censuses.

This section is in three parts. The first considers the topic of belonging, and the second uses language as a proxy for wider capabilities. The final part considers participation in activities that sustain a culture as well as enhancing skills and belonging.

Belonging

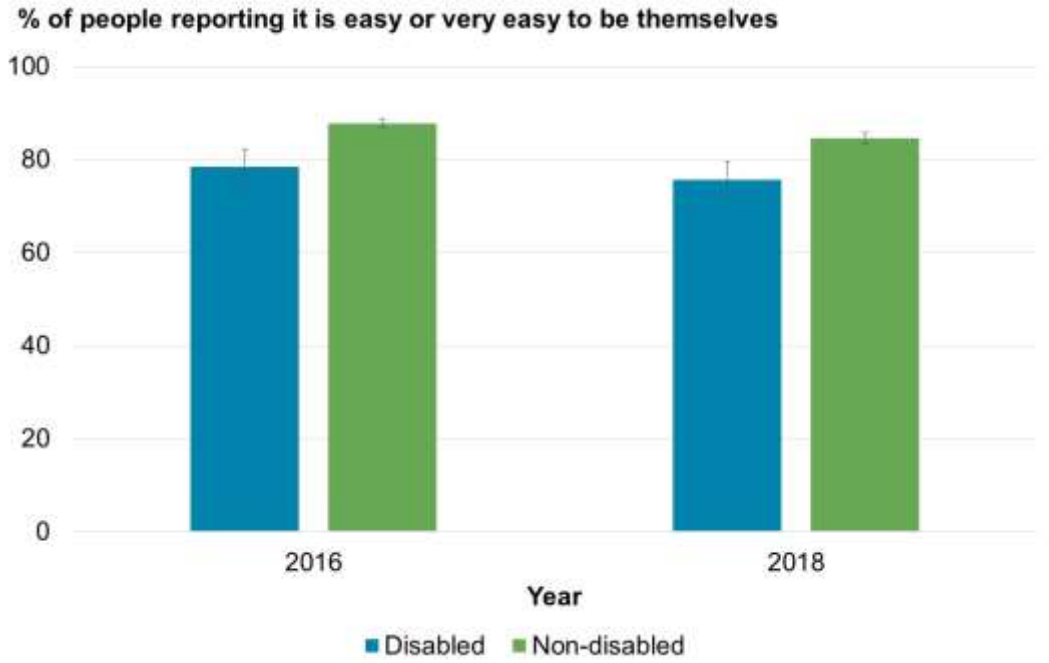
Data from the General Social Survey shows that most people find it easy or very easy to express their identity in Aotearoa New Zealand, but rates are lower among younger age groups. There has also been a slight decline in the overall proportion of people finding it easy or very easy between 2016 and 2018. Rates are lower for disabled people than for non-disabled people.

Figure 32: Ease of expressing identity by age group over time (LSF Dashboard indicator)



Source: Stats NZ (General Social Survey)

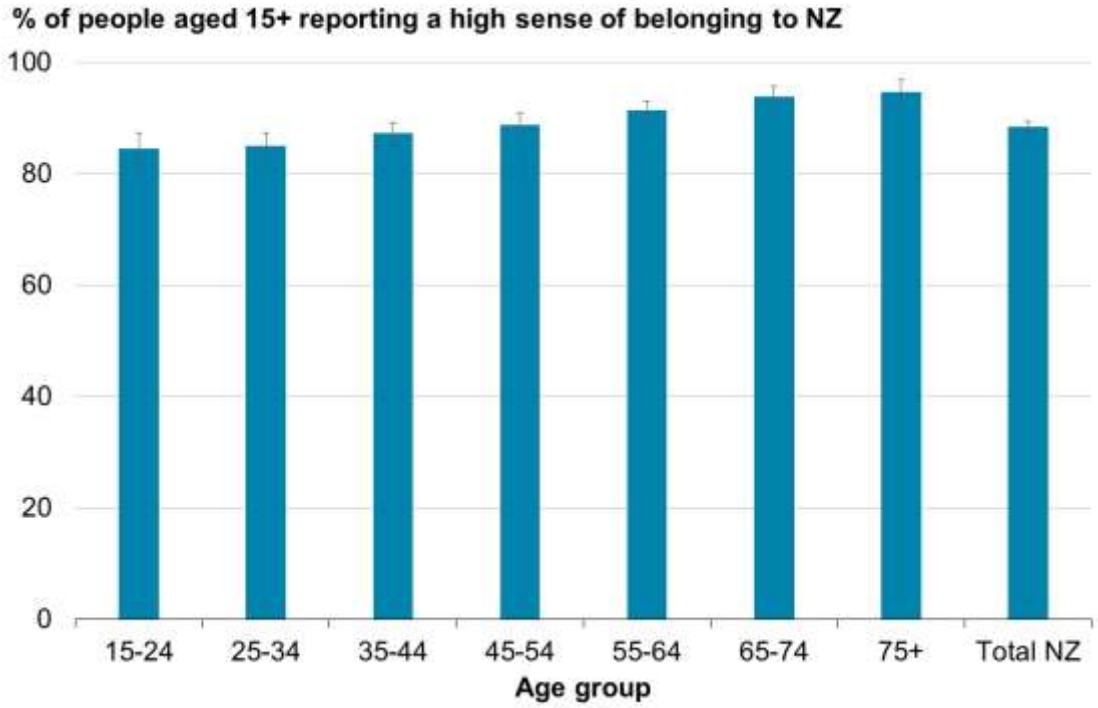
Figure 33: Ease of expressing identity by disability status over time (LSF Dashboard indicator)



Source: Stats NZ (General Social Survey)

Most people also feel a high sense of belonging to Aotearoa New Zealand, with the highest rates to be found among the oldest age groups.

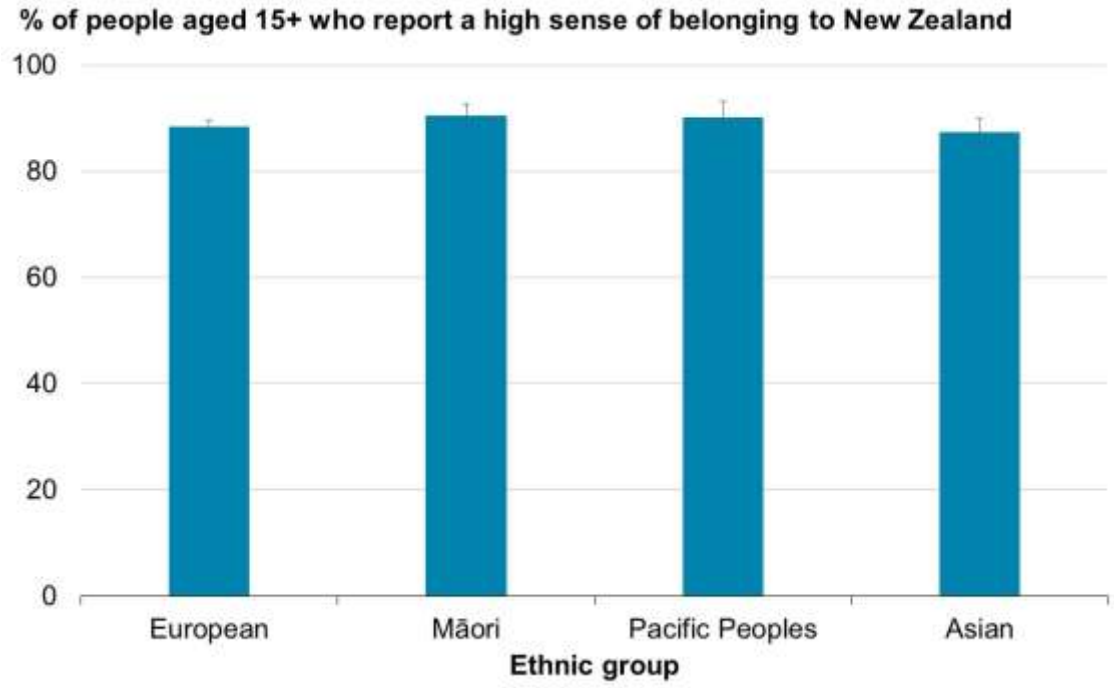
Figure 34: Sense of belonging by age group, 2016 (LSF Dashboard indicator)



Source: Stats NZ (General Social Survey)

Self-reported belonging is similar among different ethnic groups. The slightly higher rates among Māori and Pacific Peoples are not statistically significantly different from the rates for Pākehā and Asian people.

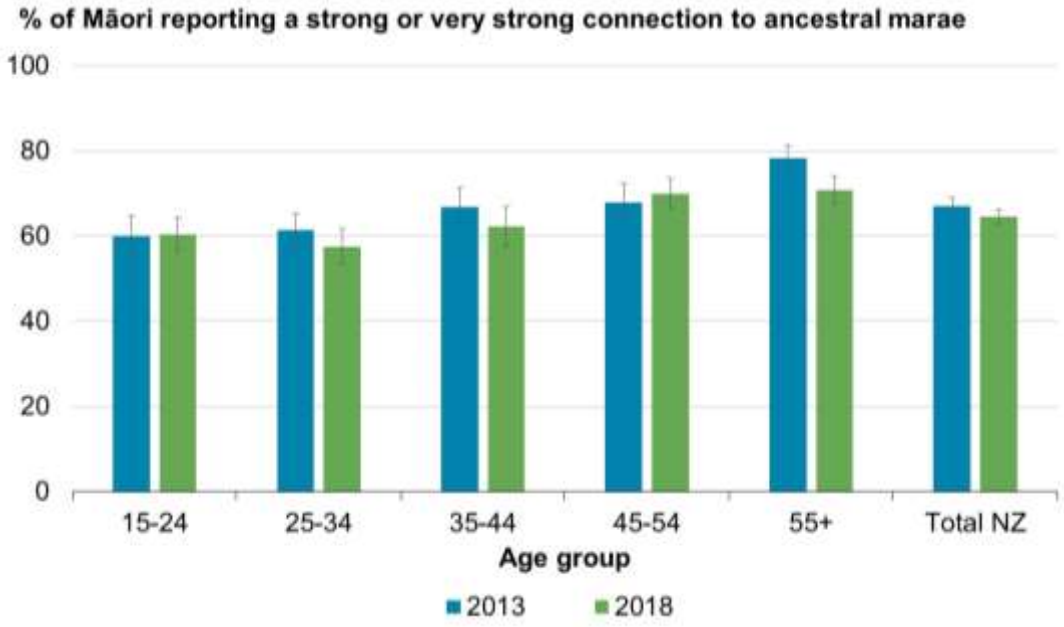
Figure 35: Sense of belonging to NZ by ethnic group, 2016 (LSF Dashboard indicator)



Source: Stats NZ (General Social Survey)

Most Māori feel strongly connected to their ancestral marae, although rates are higher among older Māori. Rates appear to be declining slightly among several age groups, but the change is only statistically significant for the 55+ age group.

Figure 36: Strength of Māori[15] connection to marae by age group over time (LSF Dashboard indicator)



Source: Stats NZ (Te Kupenga)

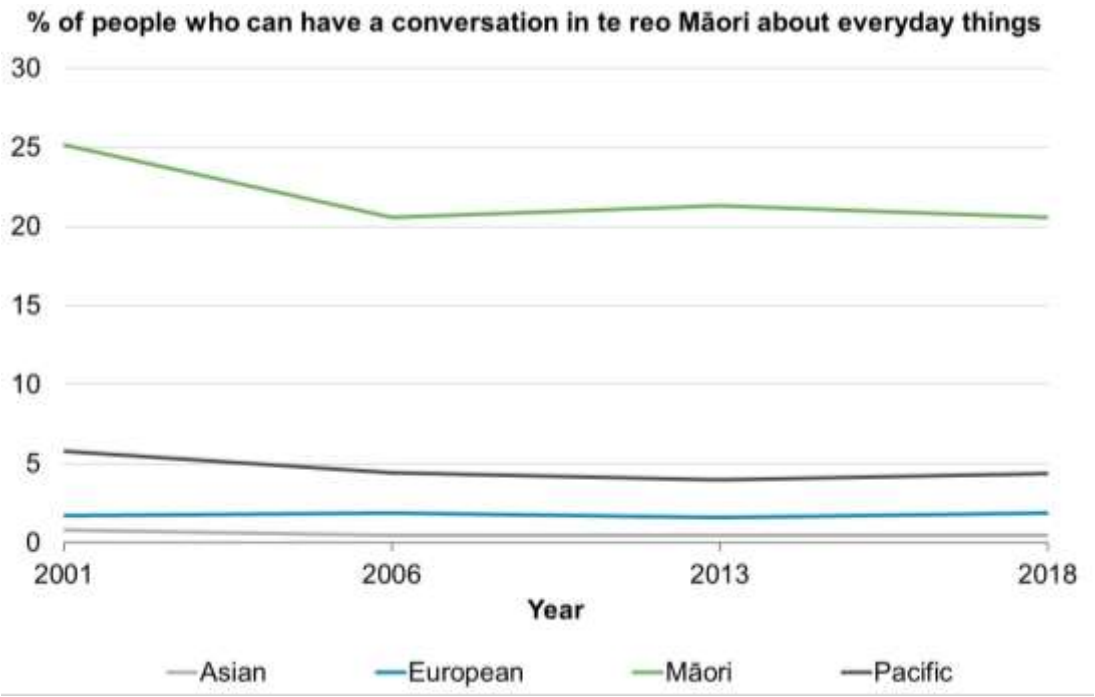
Language

Data on cultural capability in the round is lacking, but we can use language as a basic proxy given how foundational language is to all types of cultural competence. Speaking a language is not only the gateway to a comprehensive understanding of the culture embedded in that language, it is also an act that helps sustain and evolve that language for the benefit of future members of that culture.

As the language of tangata whenua, the survival of te reo Māori is particularly important. The proportion of Māori who can speak te reo Māori fluently fell over the course of the 20th century as older speakers passed away and fewer young people took up the language. Following efforts to protect the language, rates of te reo Māori capability have stabilised, but at the most recent census, only about 20% of Māori said they could converse about a lot of everyday things in te reo Māori.

15 This data comes from Te Kupenga, which uses a combination of both self-identified ethnicity and Māori ancestry to define the Māori population, in contrast to most of the other data sources in this paper, which use only self-identified ethnicity.

Figure 37: Te reo Māori speakers by ethnicity over time (LSF Dashboard indicator)

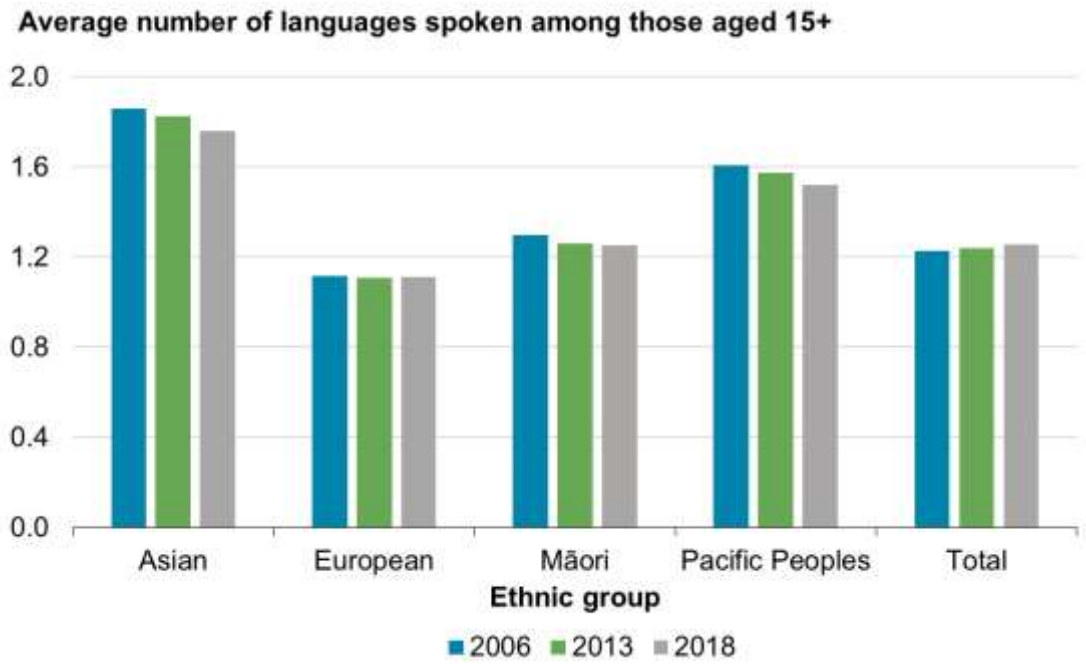


Source: Stats NZ (Census)

Considering all languages, most people in this country are monolingual, especially Pākehā, who speak only 1.1 languages on average. Asian people are the most polyglot on average, followed by Pacific Peoples. These groups are thus the most capable of directly accessing multiple cultural heritages without the need for translation.

Within each ethnic group, the average number of languages spoken has trended down over the past three censuses. Interestingly, the reverse pattern holds for the whole population. This is an example of a statistical phenomenon known as Simpson's paradox – that overall levels of multilingualism are increasing is a result of the changing composition of the population with mostly monolingual groups, such as Pākehā, declining as a proportion of the population and more polyglot groups, such as Asians, growing as a proportion of the population.

Figure 38: Multilingualism by ethnic group over time (LSF Dashboard indicator)



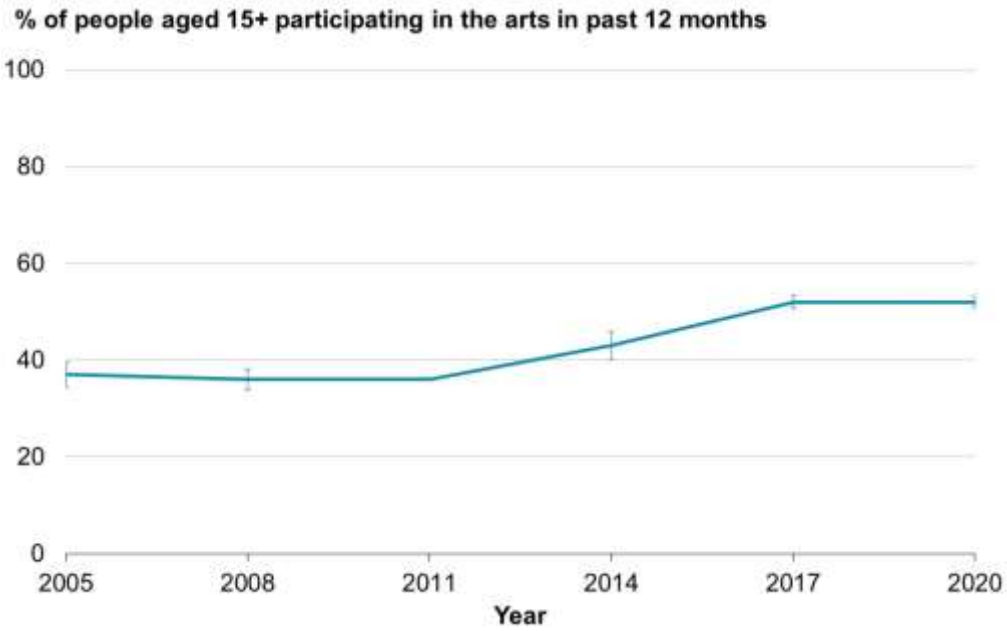
Source: Stats NZ (Census)

Participation

In the same way that speaking a language helps sustain it, participating in the arts and other cultural activities helps to sustain and enhance culture. There are benefits to the participant, to performers and to wider society from participation in arts and culture. It is good then that participation rates in the arts have increased over time according to data from the New Zealanders and the Arts Survey.[16]

16 The survey is run by Colmar Brunton on behalf of Creative New Zealand. An online panel of 120,000 New Zealanders who participate in surveys in return for Flybuys points is sampled with a response rate in the most recent wave of about 35%. The sample is weighted to be demographically representative of New Zealand. The margin of error was not reported for 2011. The margin of error for 2017 and 2020 is smaller than for previous waves of the survey, reflecting an expanded sample size in these years.

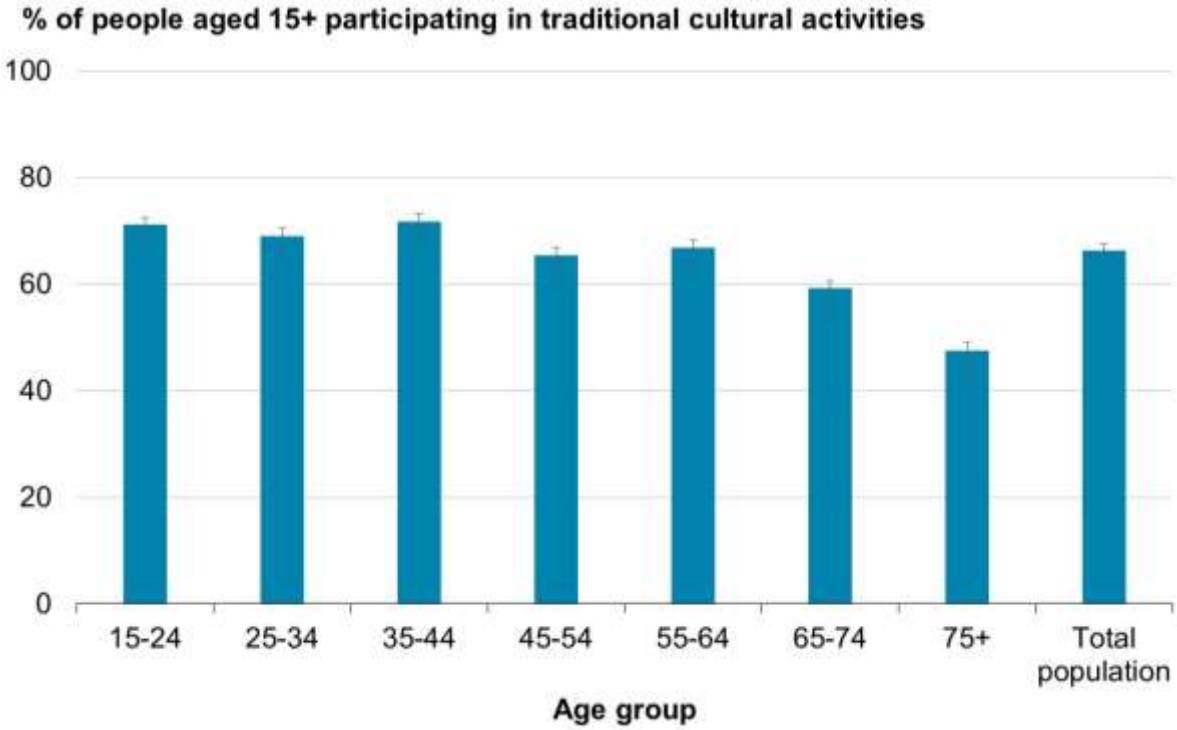
Figure 39: Arts participation rate over time (LSF Dashboard indicator)



Source: Creative New Zealand (New Zealanders and the Arts Survey)

For a similar reason, it is also good that participation in traditional cultural activities is generally high, particularly among younger people, because ongoing participation helps keep these practices alive.

Figure 40: Traditional cultural participation rates by age group, 2016[17]



Source: Stats NZ (General Social Survey)

17 This indicator is derived from the General Social Survey. Participation includes one or more of the following activities: using te reo Māori phrases or words; watching a Māori television programme such

Further reading and links:

He Ara Poutama mō te reo Māori: Forecasting te reo Māori speakers in Aotearoa, New Zealand

Pacific Aotearoa Status Report

New Zealanders and the Arts Survey

as *Te Karere*; participating in kapa haka; singing a Māori song; performing a haka; giving a mihi or speech; taking part in Māori performing arts or crafts; attending a marae.

Work, care and volunteering

Overview

Directly or indirectly producing goods and services for the benefit of others, with or without compensation.

Work, care and volunteering are three of the major ways in which people use their capabilities to contribute to society. From the self-regarding perspective of individual wellbeing, each type of contribution can bring meaning and satisfaction to one's life and, in the case of paid work, can generate income too. From the other-regarding perspective of collective wellbeing, our paid and unpaid labour brings benefits to others.

It is well then that there is such a positive picture in the data. We have high employment, high job satisfaction, low unemployment and the highest rate of volunteering in the OECD.

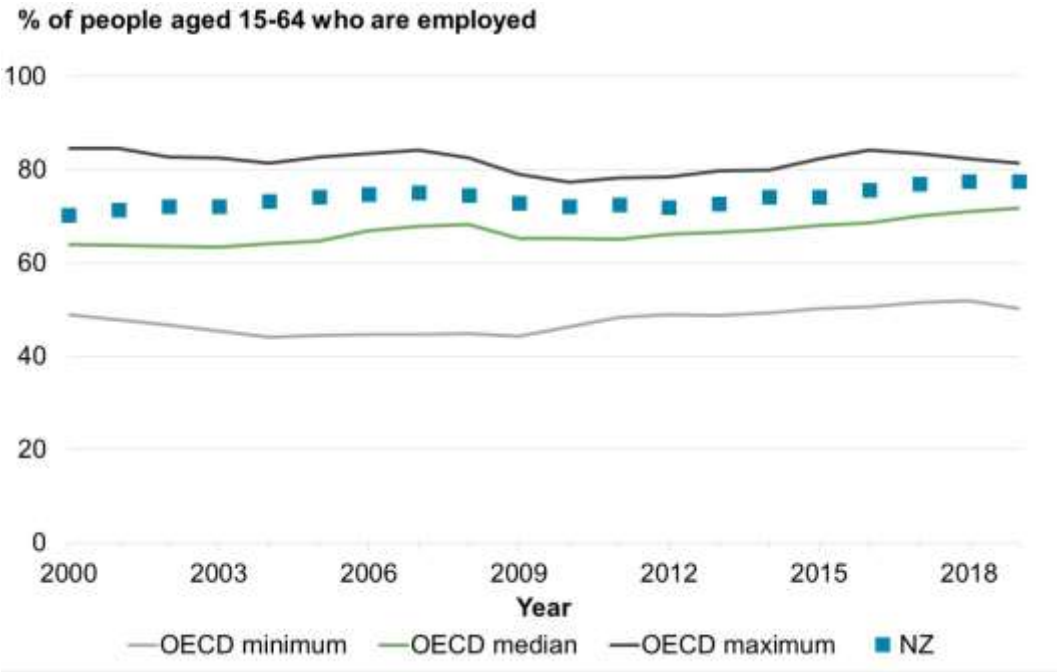
The main exception to this generally positive picture is the high rates we have for young people not in employment, education or training (NEET). Our NEET rates for under-25s are not so impressive by international standards. NEET rates are climbing for young men but are flat overall because of a countervailing decline in NEET rates for young women. NEET rates continue to be higher among Māori and Pacific Peoples.

This section is in two parts: paid work and unpaid work.

Paid work

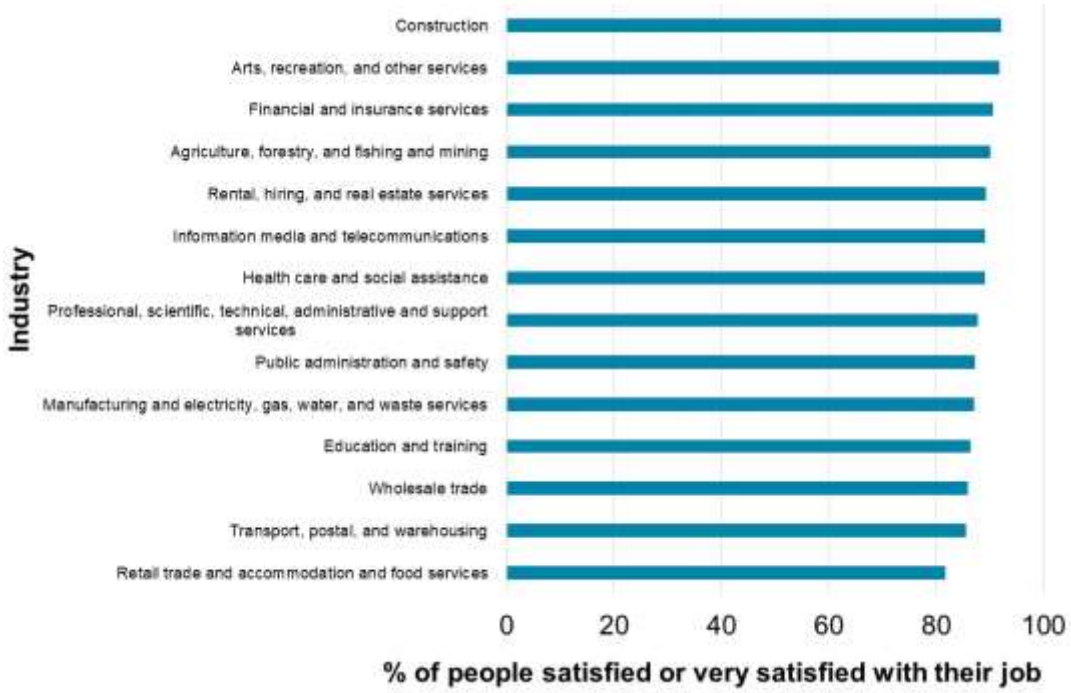
Among people aged 15-64, Aotearoa New Zealand has one of the highest employment rates in the OECD, high levels of job satisfaction in most industries and one of the lowest rates of unemployment in the OECD.

Figure 41: Employment rate across the OECD over time (LSF Dashboard indicator)



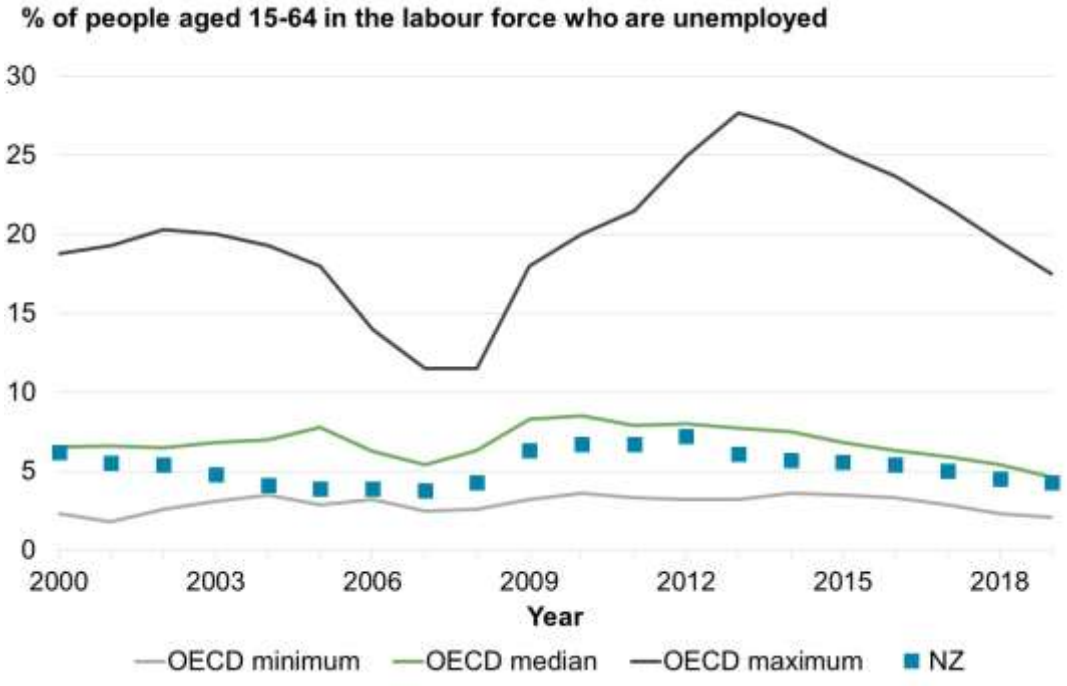
Source: OECD

Figure 42: Job satisfaction rates by industry, 2018



Source: Stats NZ (Survey of Working Life)

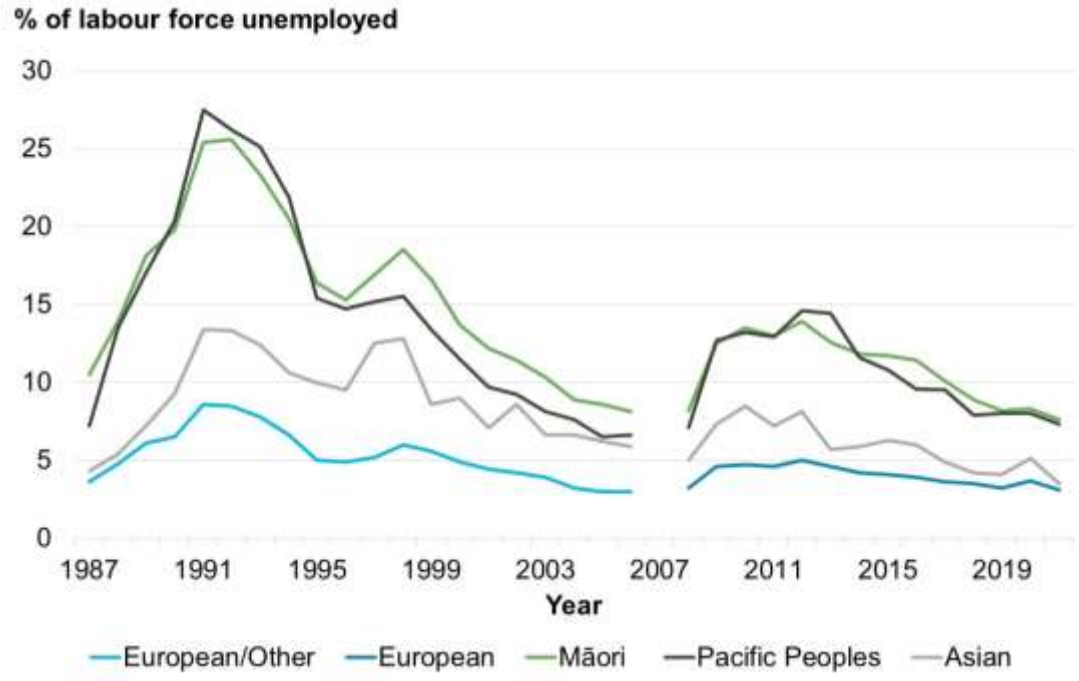
Figure 43: Unemployment rates across the OECD over time (LSF Dashboard indicator)



Source: OECD

However, there is a persistent ethnicity gap in unemployment rates, with the gap widening during economic downturns, as they tend to have a disproportionate impact on Māori and Pacific Peoples. The unusual circumstances of the COVID-19 lockdowns provided an exception to this general rule, as they disproportionately affected Asian people. However, compared to earlier widespread downturns in the 1990s and post-GFC, the pandemic has caused only minimal disruption to employment.

Figure 44: Unemployment rate by ethnicity over time (LSF Dashboard indicator)[18]

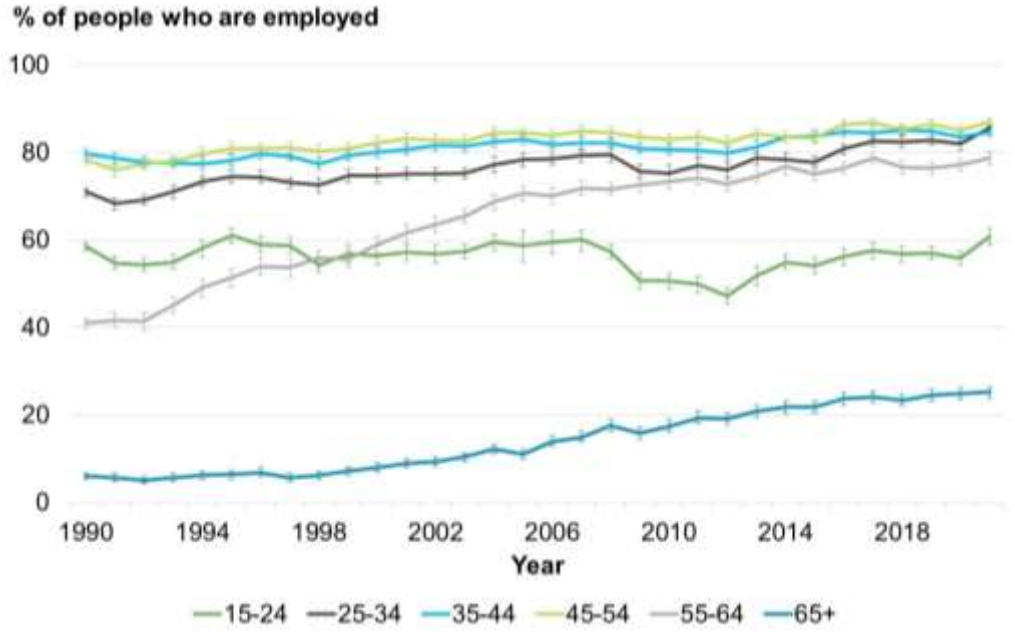


Source: Stats NZ (Household Labour Force Survey) and MSD (Social Report)

Rates of employment among over-65s have increased significantly over the last 25 years. This is somewhat ambiguous from the perspective of the wellbeing of the over-65s depending on whether they are working by choice or necessity. It does, however, help counteract some of the macroeconomic and fiscal implications of an ageing population that were discussed at length in the recent Long-term Fiscal Statement (The Treasury, 2021a).

18 Note that there was a change in the way ethnicity was recorded in 2007. After this date, a single person with multiple ethnicities appears in all relevant series. Prior to this date, ethnicity was assigned using a priority order, with Māori trumping all other ethnicities, followed by Pacific, Asian, other and finally European. Rates are reported as at December in each year.

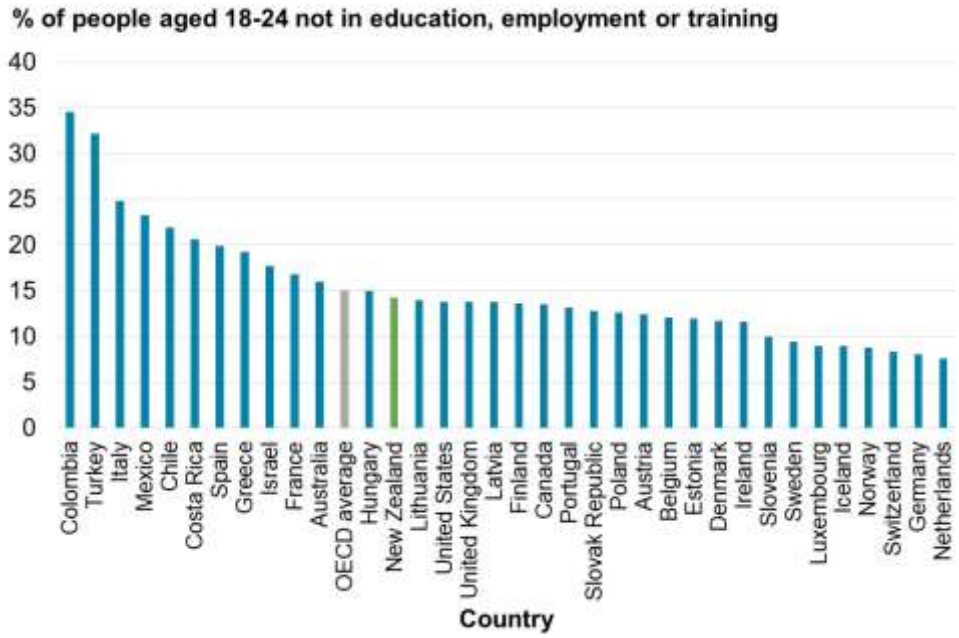
Figure 45: Employment rate by age over time (LSF Dashboard indicator)



Source: Stats NZ (Household Labour Force Survey)

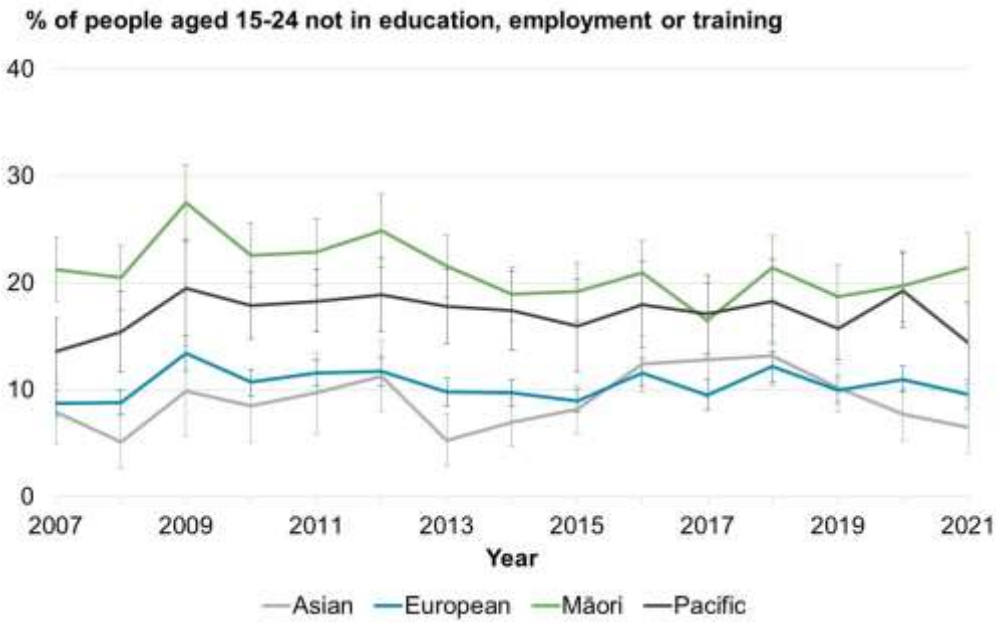
However, participation rates are not as impressive among the youngest age groups. Our NEET rate is close to the average for OECD countries. NEET rates are higher among Māori and Pacific Peoples.

Figure 46: NEET rates across the OECD, 2020 or most recent year (LSF Dashboard indicator)



Source: OECD

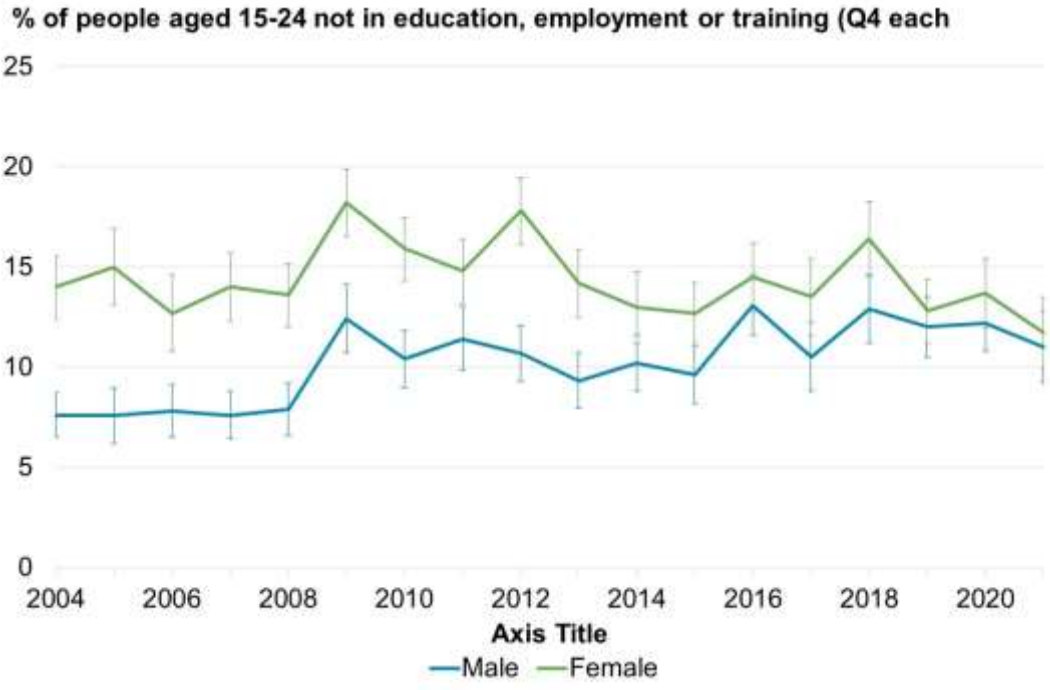
Figure 47: NEET rates by ethnicity over time (LSF Dashboard indicator)



Source: Stats NZ (Household Labour Force Survey)

The gender gap in NEET rates has narrowed over time as female rates have fallen and male rates have risen. More-detailed data (not shown in the figures) suggests that the declining NEET rate for women is associated with a decline in the number of young women with caregiving responsibilities.[19]

Figure 48: NEET rate by gender over time (LSF Dashboard indicator)



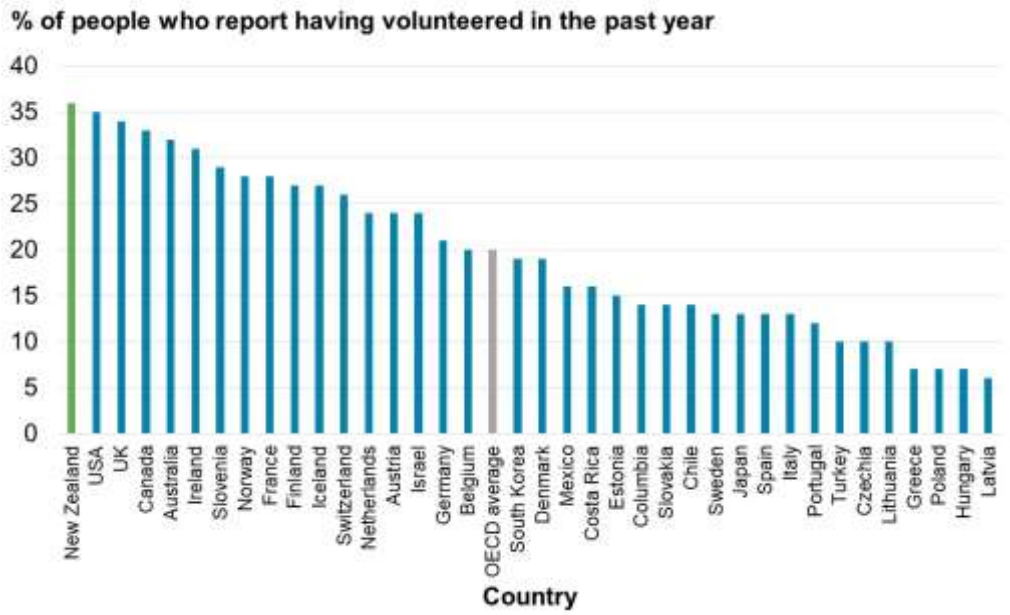
Source: Stats NZ (Household Labour Force Survey)

19 https://www.stats.govt.nz/news/rates-of-young-men-and-women-not-earning-or-learning-converge

Unpaid work

Although New Zealanders spend plenty of time in paid work, we also find the time for lots of unpaid work. Aotearoa New Zealand has the highest rate of voluntary work in the OECD.

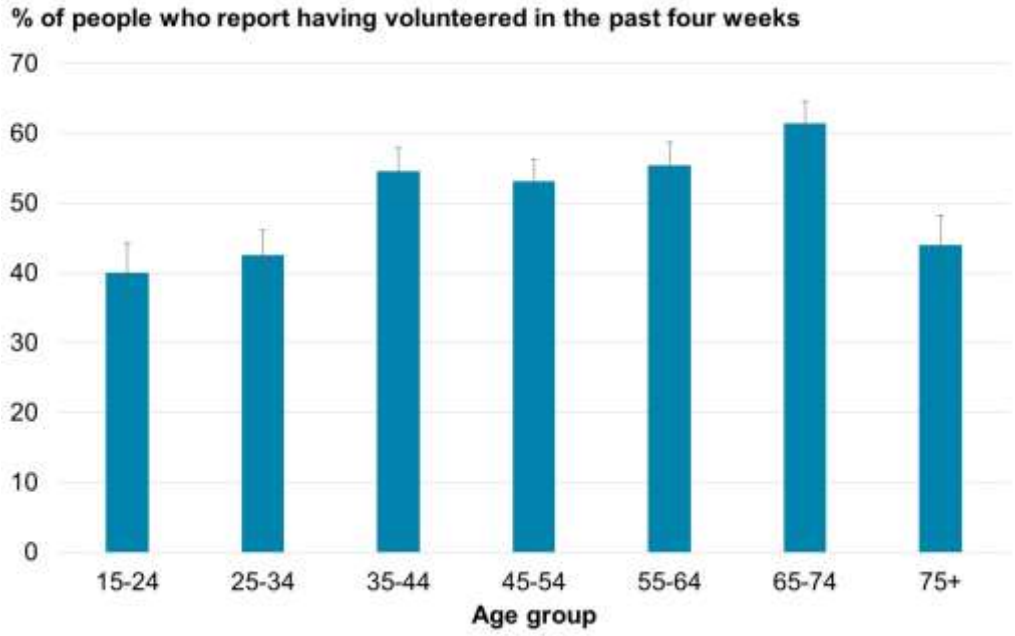
Figure 49: Volunteering rates across the OECD, 2019 (LSF Dashboard indicator)



Source: OECD

Volunteering appears more common among people aged 35-74 and includes both direct volunteering and volunteering for an organisation.

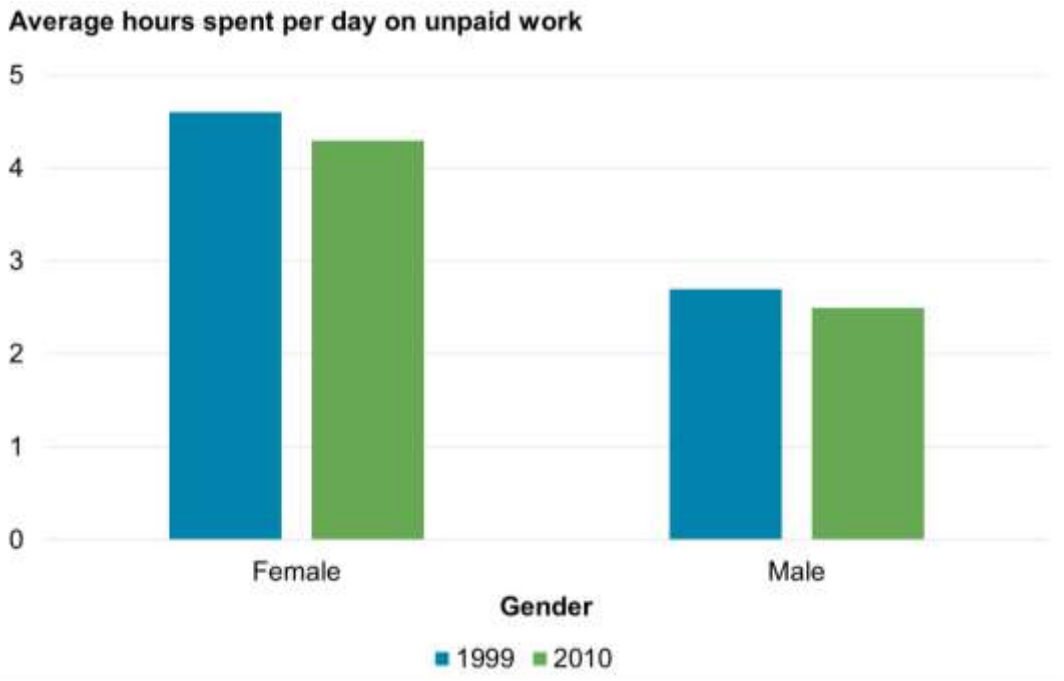
Figure 50: Volunteering rates by age, 2016 (LSF Dashboard indicator)



Source: Stats NZ (General Social Survey)

Including other types of unpaid work such as childcare, there is a noticeable gap between men and women, with women undertaking more unpaid work than men.

Figure 51: Unpaid work by gender over time (LSF Dashboard indicator)



Source: Stats NZ (Time Use Survey)

Further reading and links:

Labour Market Dashboard

Quarterly Labour Market Report

State of Volunteering Report 2020

Caring for Children: Findings from the 2009/10 Time Use Survey | Stats NZ

Engagement and voice

Overview

Participating in democratic debate and governance at a national, regional or local level such as through membership of a charitable society, political party or school board.

Participation in democratic self-governance can be seen as a particular type of unpaid work. As such, it overlaps substantially with the previous wellbeing domain. Like paid and unpaid work generally, participation can provide a sense of meaning and purpose to one's life and also benefits others.

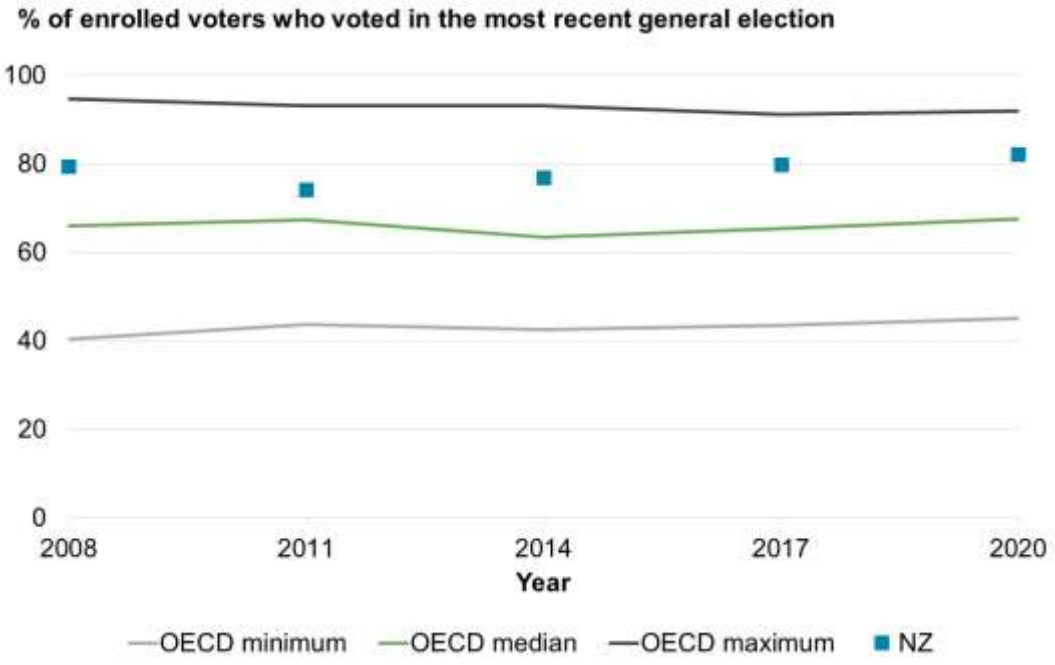
Engagement in the processes of democratic self-government is generally good in Aotearoa New Zealand. However, local democracy is less healthy, at least as measured by voter turnout, which is low and declining. Youth voting is also quite low and echoed by greater pessimism as to whether participation is likely to make a difference. Wider types of participation such as petitioning are generally healthy.

This section is in two parts: voting and broader participation.

Voting

Voter turnout in national elections is quite high by OECD standards and is either flat or increasing over time.

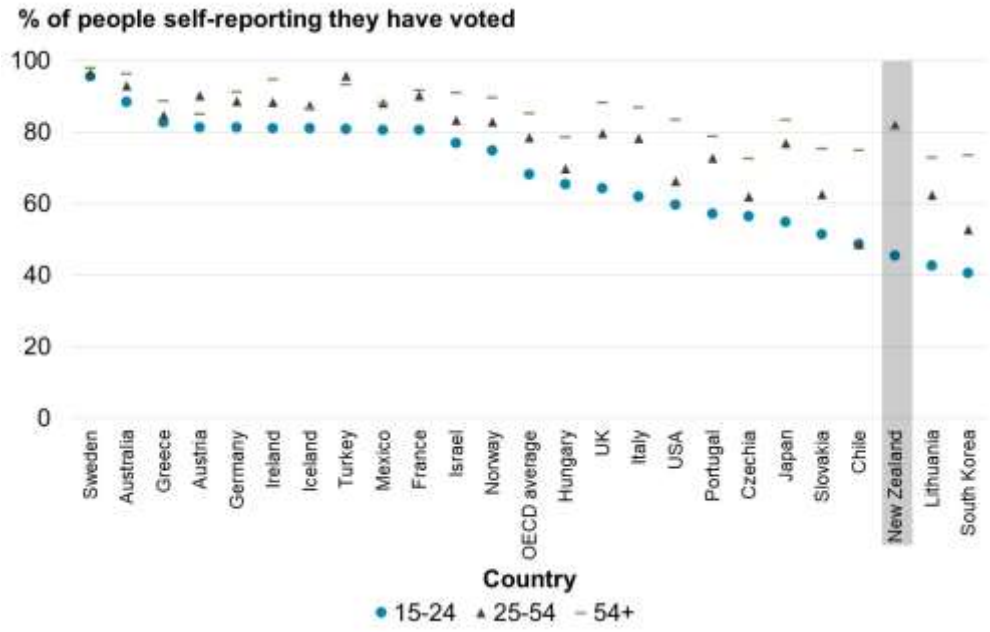
Figure 52: Voter turnout across the OECD over time (LSF Dashboard indicator)



Source: OECD

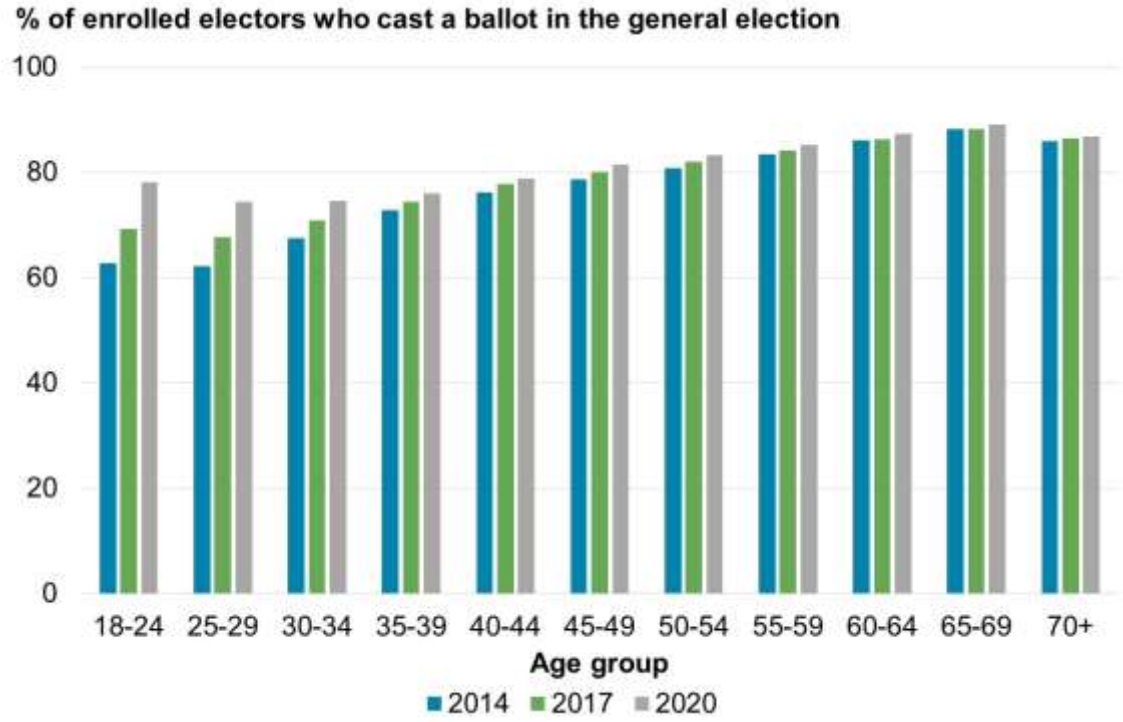
However, turnout among people aged under 25 is quite low (although it increased in the most recent election). The gap between youth turnout and older adult turnout is large in comparison to other OECD countries.

Figure 53: Voter turnout by age across the OECD, ordered by youth turnout, 2018 or most recent year (LSF Dashboard indicator)



Source: OECD

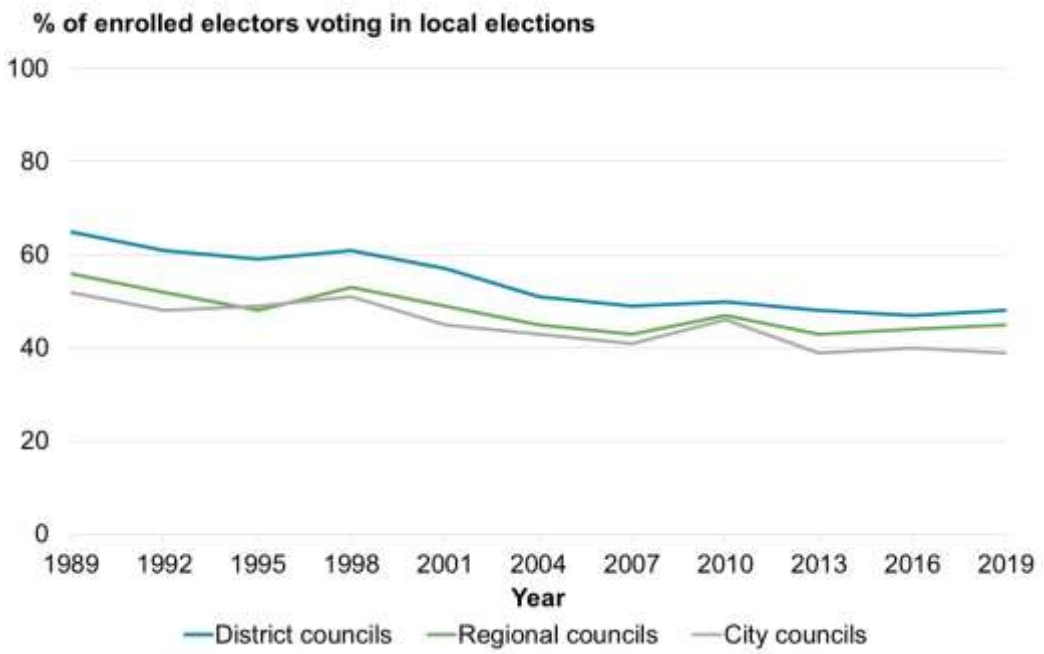
Figure 54: General election turnout by age over time (LSF Dashboard indicator)



Source: Electoral Commission

Turnout in local body elections is far less healthy, particularly in city council elections.

Figure 55: Local election turnout over time (LSF Dashboard indicator)

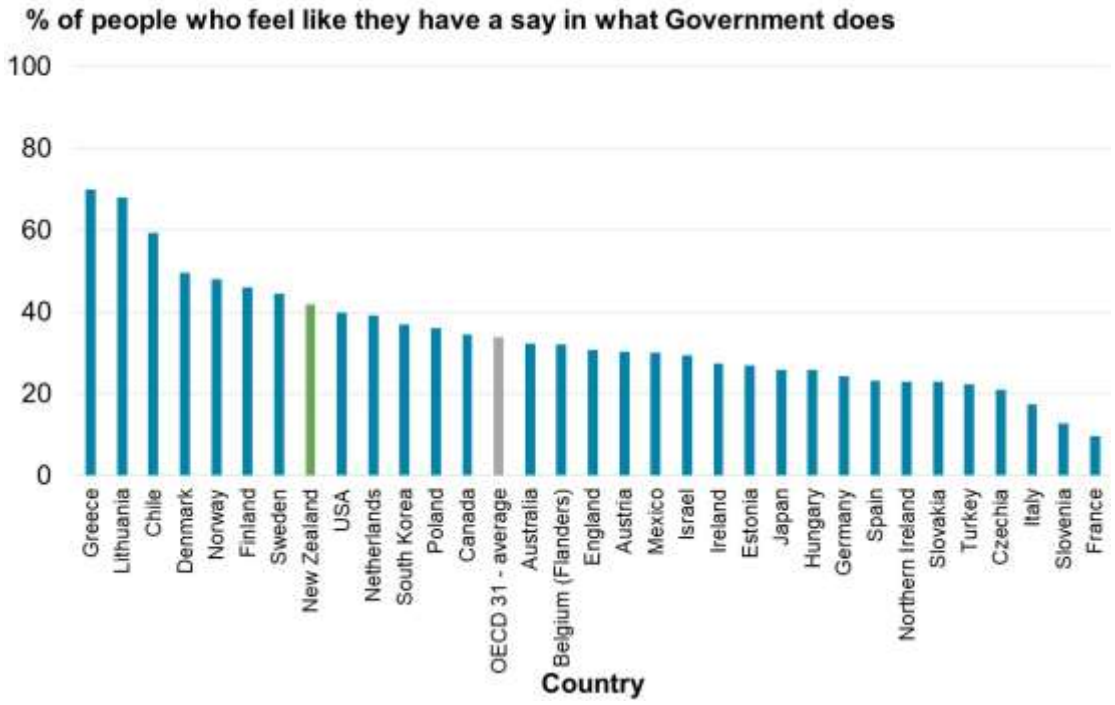


Source: Electoral Commission

Broader participation

New Zealanders feel they have a say in what the Government does to a greater extent than people in most OECD countries, although the figure is still less than 50%.

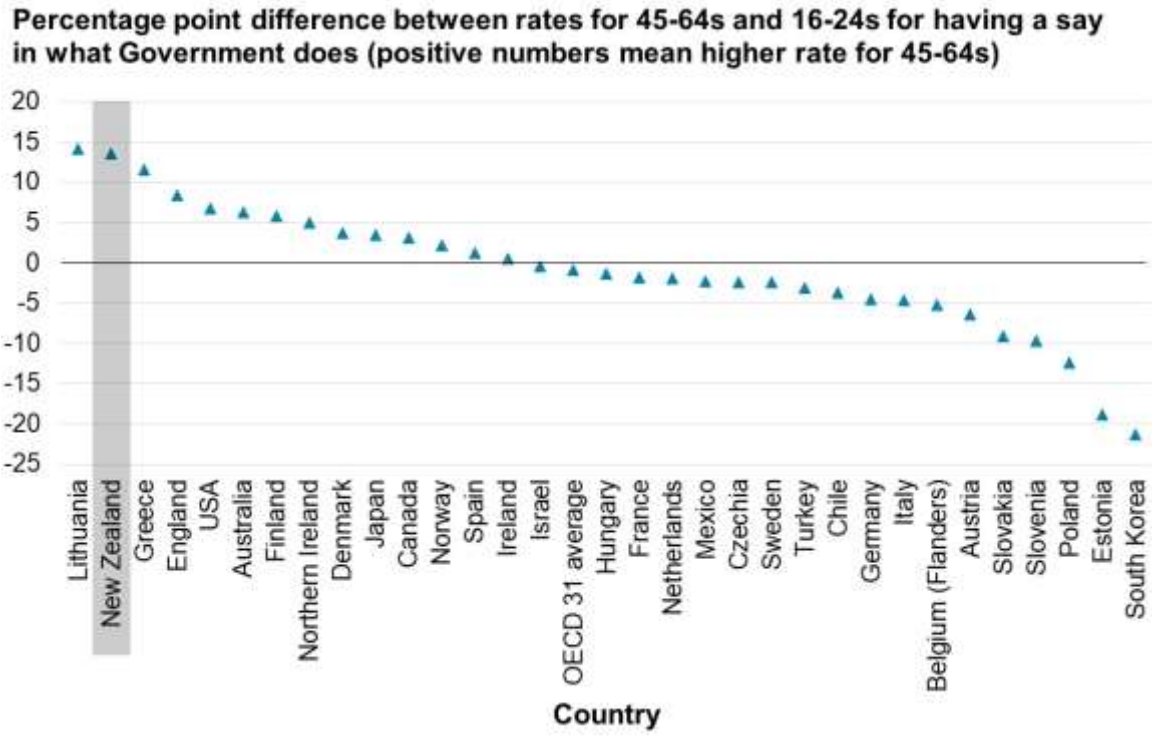
Figure 56: Perceived influence on Government across the OECD, 2012 (LSF Dashboard indicator)



Source: OECD

However, older New Zealanders have a greater feeling that they have a say than people aged under 25, whereas in many other OECD countries the opposite pattern can be observed.

Figure 57: Perceived influence by age across the OECD, 2012 (LSF Dashboard indicator)



Source: OECD

There are healthy levels of political engagement by many other measures. Data from the New Zealand Election Study[20] finds engagement higher among Māori on the Māori electoral roll for several types of engagement such as protests and petitioning.

20 The New Zealand Election Study is a longstanding survey-based study of New Zealand voting behaviour in each general election between 1990 and 2020. It is based on a random sample of the electoral roll. Response rates were initially as high as 65%, but like with other surveys, response rates have steadily declined over time to a low of 31% in the 2017 edition (Greaves et al., 2021).

Table 3: Frequency of political engagement by Māori/non-Māori by type, 2017

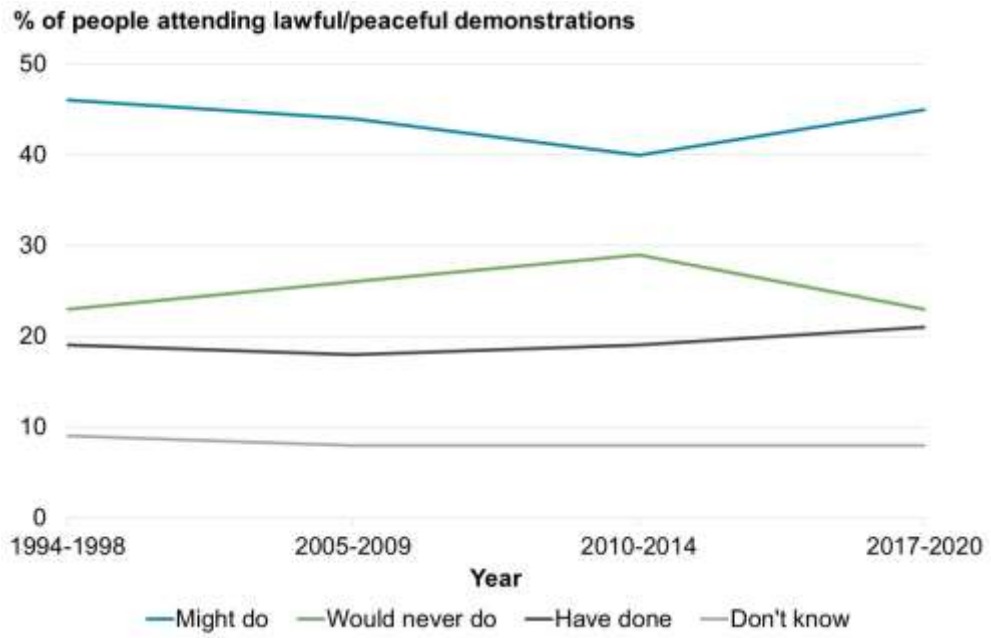
	Māori on Māori roll % (number)	Māori on general roll % (number)	Non-Māori % (number)
This election			
Contributed money	4.2 (9)	3.3 (7)	4.7 (129)
Put up sign/poster	4.8 (10)	0 (0)	1.5 (40)
Watched an election debate	70.2 (165)	61.8 (141)	63.7 (1,838)
Attended a political meeting	9.5 (20)	1.9 (4)	5.0 (134)
Talked to someone about how they should vote	77.8 (182)	86.0 (191)	71.5 (2,045)
Last five years			
Signed petition	40.8 (98)	40.7 (92)	35.6 (1,007)
Select or Royal Committee submission	4.5 (11)	3.9 (9)	3.8 (113)
Consultation with government	10.1 (24)	9.3 (29)	9.3 (261)
Written to a newspaper	5.5 (13)	5.7 (13)	5.4 (153)
Protest/march/hīkoi	20.3 (48)	13.7 (31)	8.3 (232)
Phoned talkback	4.7 (11)	5.2 (12)	3.4 (94)
Boycotted product	20.2 (48)	26.5 (60)	28.2 (795)
Promoted issue on social media	26.1 (62)	27.4 (62)	22.8 (639)
Contacted politician/official	18.4 (44)	21.1 (48)	18.4 (516)

Source: New Zealand Election Study

Data from the World Values Survey[21] also shows healthy and stable levels of political engagement, particularly among those with higher levels of education.

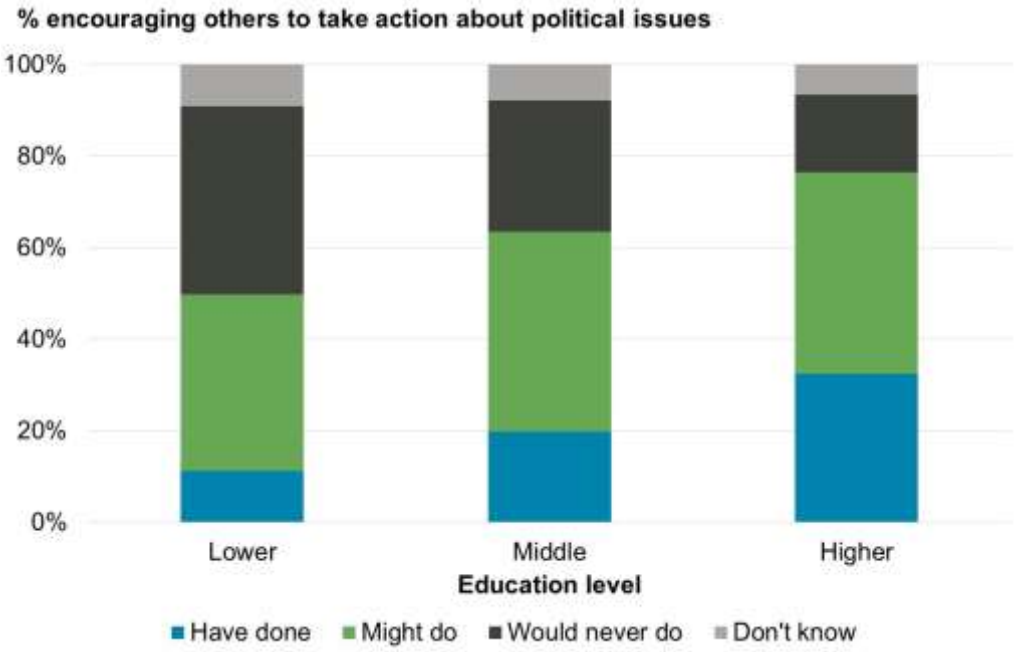
21 The World Values Survey is a longstanding survey that has the advantage of standardised questions across many countries and relatively long time series going back 40 years over seven waves of data collection. It is based on a random sample of the electoral roll, but it has a relatively low response rate – 28% in the most recent wave (Perry & Yeung, 2021). It also has a fairly small sample size of about 1,000 for most waves. Data presented is unweighted.

Figure 58: Participation in protests over time



Source: World Values Survey

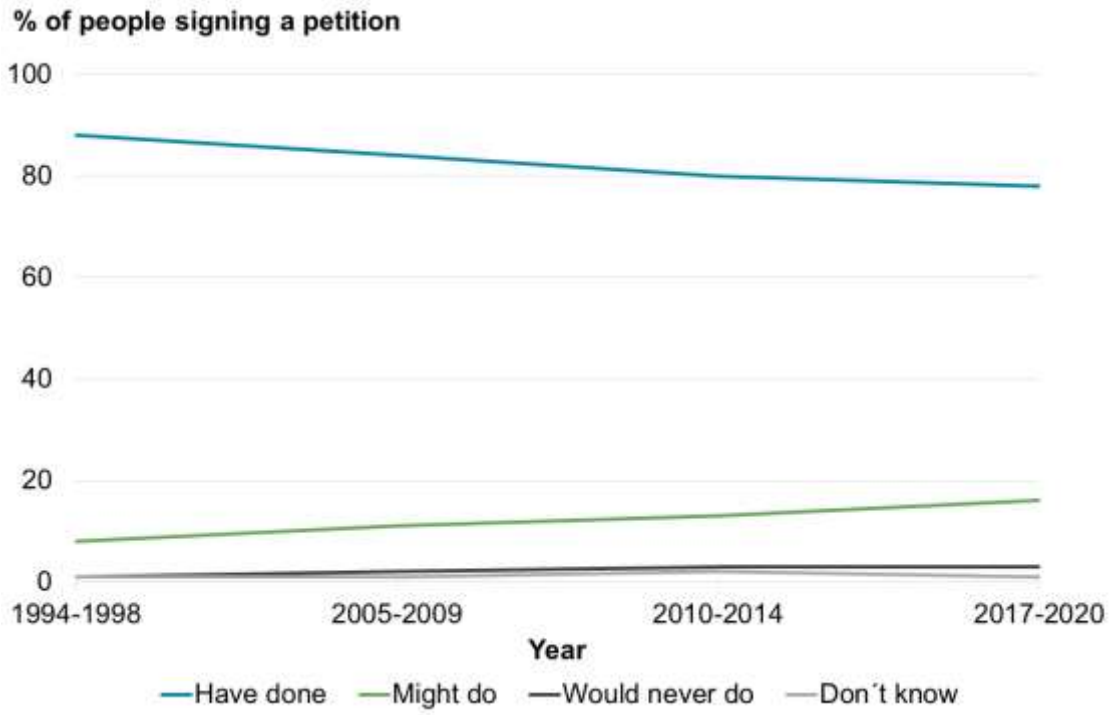
Figure 59: Encouragement of activism by education level, 2019



Source: World Values Survey

However, the proportion of people who have ever signed a petition seems to have declined slightly over time.

Figure 60: Involvement in petitions over time



Source: World Values Survey

Further reading and links:

New Zealand Election Study

Electoral Commission statistics

World Values Survey

Income, consumption and wealth

Overview

Using income or in-kind transfers to meet today's needs and save for future needs as well as being protected from future shocks by adequate wealth, private insurance and public insurance (the social safety net).

In aggregate or on average, the story with income, consumption and wealth is very simple. All three have grown very significantly over time, and our material standard of living is far higher than in the past, although our ranking among OECD countries has not improved beyond mediocre and some other rich countries are even richer than us.

However, this simple story elides significant complexity in the distribution of income, consumption and wealth. A fuller exploration of this complexity will be provided in a forthcoming paper between the Treasury and the Productivity Commission but is dealt with only loosely in this paper. As such, the findings in this paper should be treated as tentative.

This section is in three parts. We start with consumption as it is the most fundamental aspect of wellbeing (we all need to eat for example). We then look to income and finally wealth. Each part starts with the aggregate picture and then offers a few tentative insights into the distribution, with a particular focus on the bottom of the distribution from the perspective of sufficiency or hardship.

Of the three aspects of this domain, broadly speaking, consumption is the area where there is the least point-in-time inequality. There are also encouraging trends. The strong economic growth and low unemployment over the last 10 years or so seems to have benefited most groups in the population.[22] Real household expenditure has grown for nearly all subgroups, and the proportion of people reporting a good or very good level of material wellbeing has grown from 83% in 2013 to 90% in 2020. The number of children in material hardship has fallen substantially since 2013, and the proportion of adults reporting they do not have enough money to meet everyday needs has fallen across all ethnic groups. However, there are still many children living in households where food runs out sometimes or often, and these children are disproportionately Māori and Pacific Peoples.

22 This is in contrast to the 'hollowing out' of the economy experienced in several other OECD countries and cautions against importing international narratives without closely examining the local data. See Under Pressure: The Squeezed Middle Class | OECD.

In broad strokes, income inequality increased substantially during the 1990s but has been stable since then. Our 21st century level of income inequality is a little higher than average for OECD standards and is higher for measures of income after accounting for housing costs, reflecting the growing gap between renters and home owners. Whether this is an income problem or a housing cost problem is very much a chicken-or-egg question. However, even without considering housing costs, it is clear that some groups in the population have systematically lower incomes than others. Groups such as sole parents, people of Middle Eastern, Latin American or African ethnicity and people living alone stand out as groups with significantly more than 20% in the bottom quintile of income. Levels of poverty are higher among children than among retirees, but on two of three official measures of child poverty, there has been a substantial decline over time.

Wealth data is less reliable than data for income and consumption,[23] but the data we have suggests that, like in most countries, wealth inequality is very much greater than inequality in consumption or income. Although the data suggests households have a high average net worth in comparison to most OECD countries, this wealth is disproportionately held by certain groups, particularly older people, and older age groups have disproportionately benefited from the long-term increase in house prices.

Consumption

Over the course of a lifetime, income is a good proxy for the material standard of living of one's life, but at a single point in time, consumption will often be higher or lower than income. For example, a student may borrow to help meet living costs in the expectation of higher income in the future, and a retiree may draw down savings to maintain consumption at a higher level than current income can sustain. Someone in the middle of their life will often pay down debt and save for retirement, thus consuming less than their full income (Vink, 2014). For this reason, economists often argue that point-in-time consumption is a better proxy of lifetime income than current income.[24]

For those people who are particularly focused on life satisfaction as a key overall measure of wellbeing, it is also important to note that consumption is more closely related to life satisfaction than income in Aotearoa New Zealand (Carver & Grimes, 2016).

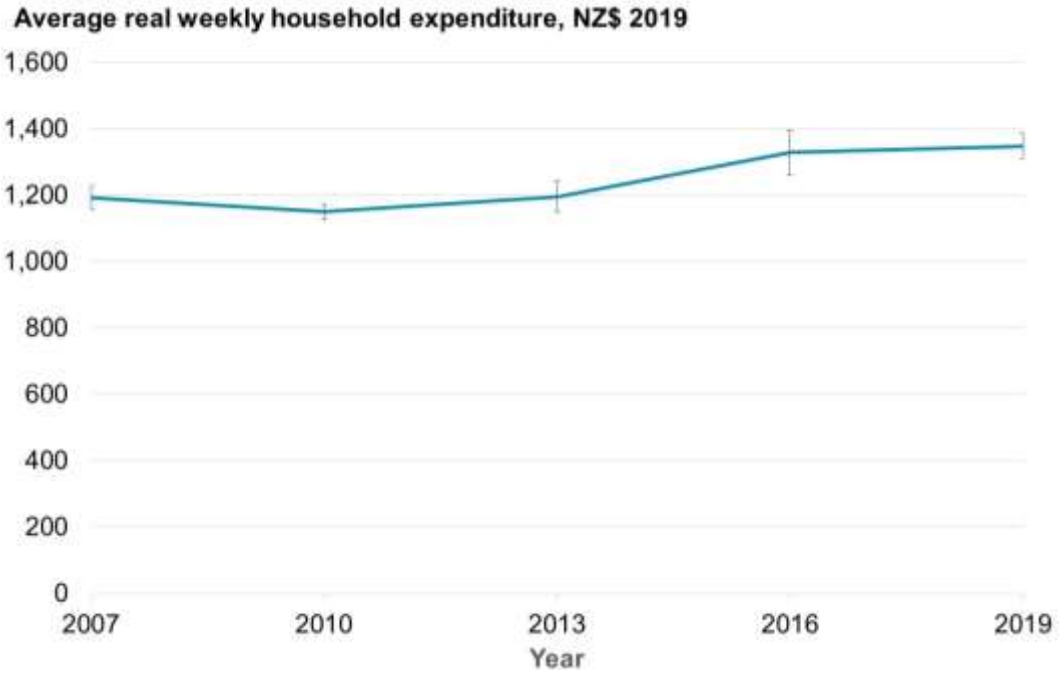
Starting with the aggregate picture, overall consumption has increased steadily in recent years, supporting the general impression that the material standard of living has increased on average.[25]

23 This is a global problem discussed at length by Thomas Piketty (2020) among others.

24 See, for example, Attanasio and Pistaferri (2016) for a discussion.

25 Increasing consumption tends to increase life satisfaction and so can be seen as generally good for wellbeing. Although there are diminishing marginal returns, the evidence suggests there is no particular level of satiation at which further increases make no difference (Stevenson & Wolfers, 2013). Depending on the type of consumption, there may be limits to how much consumption is consistent with planetary boundaries, but this is a bigger question that will be explored in another background paper.

Figure 61: Average real weekly household expenditure over time (LSF Dashboard indicator)



Source: Stats NZ (Household Economic Survey)

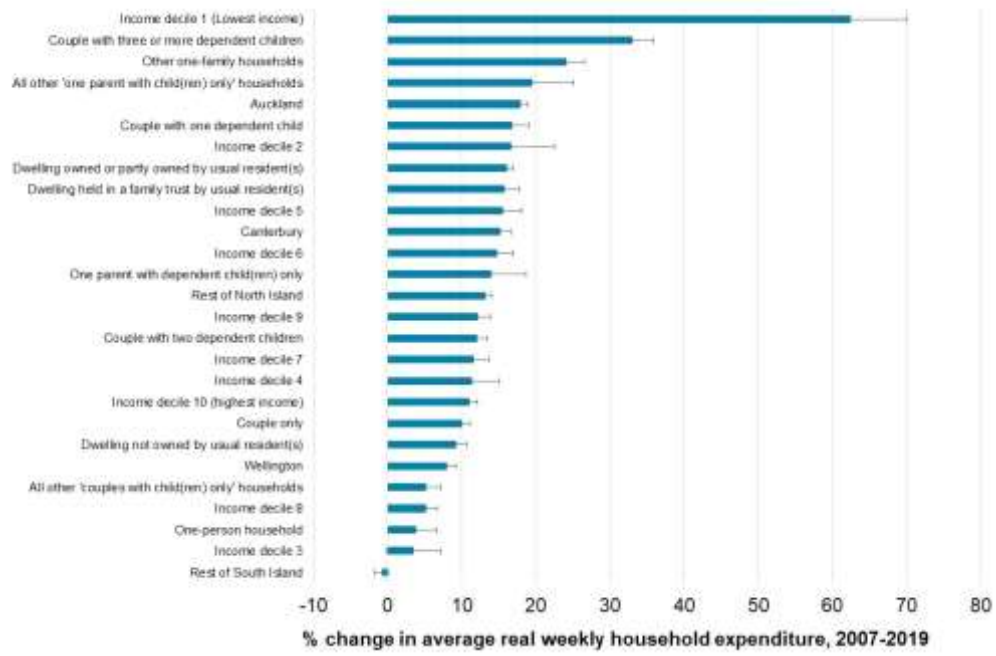
The distribution of consumption across households can be assessed using the Gini coefficient. The Gini is a number between 0 and 1, where 0 represents perfect equality of consumption (ie, everyone consumes exactly the same amount) and 1 represents perfect inequality (ie, one person consumes everything).

Ball and Creedy's (2015) estimates of the consumption Gini for the 1983-2014 period found that consumption inequality increased in the period 1984-1998. However, it then fell subsequently. By 2014, consumption inequality was lower than in 1984 and lower than income inequality.

We do not have an up-to-date estimate of consumption inequality using this measure, but we do have detailed breakdowns from the Household Economic Survey showing how consumption has changed for different subgroups of the population between 2007 and 2019.

This data shows that nearly all groups have seen an increase in consumption, suggesting that the benefits of economic growth since 2007 have been shared quite widely. The main exception is people living in the South Island outside of Canterbury, for whom consumption has been flat on average. The largest increase is observed for households in the lowest income decile, although data is often unreliable for this end of the distribution (Perry, 2019) so caution needs to be taken in interpretation.

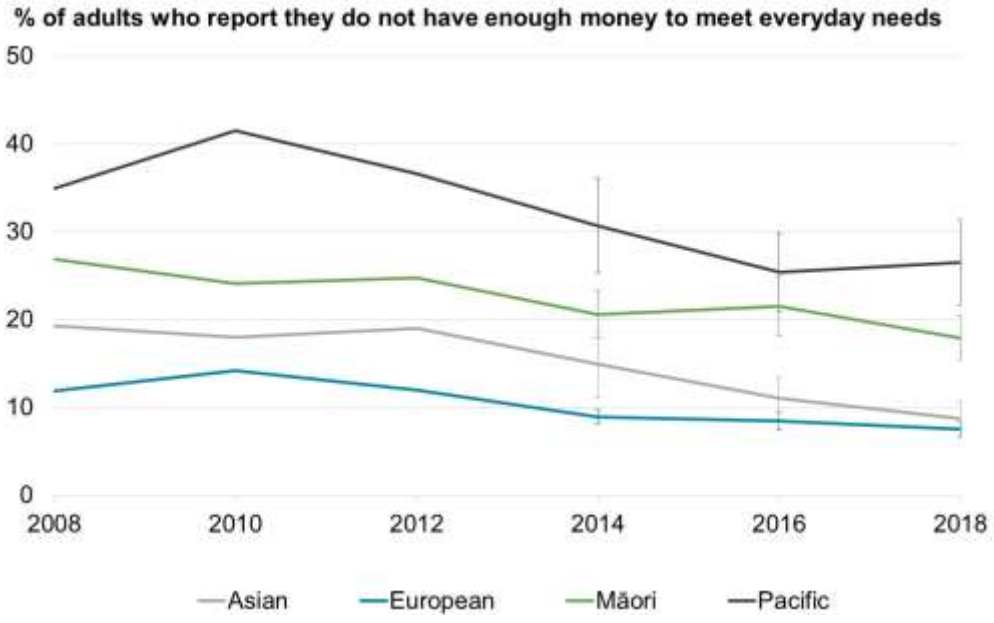
Figure 62: Change in average weekly household expenditure, 2007-2019, by various characteristics (LSF Dashboard indicator)



Source: Stats NZ (Household Economic Survey)

Further evidence that consumption has grown across the board is found in data on self-reported financial wellbeing. Between 2008 and 2018, the proportion of people reporting they lack enough money to meet everyday needs fell across most groups, including all ethnicities (although there was a slight statistically insignificant increase between 2016 and 2018 among Pacific Peoples).

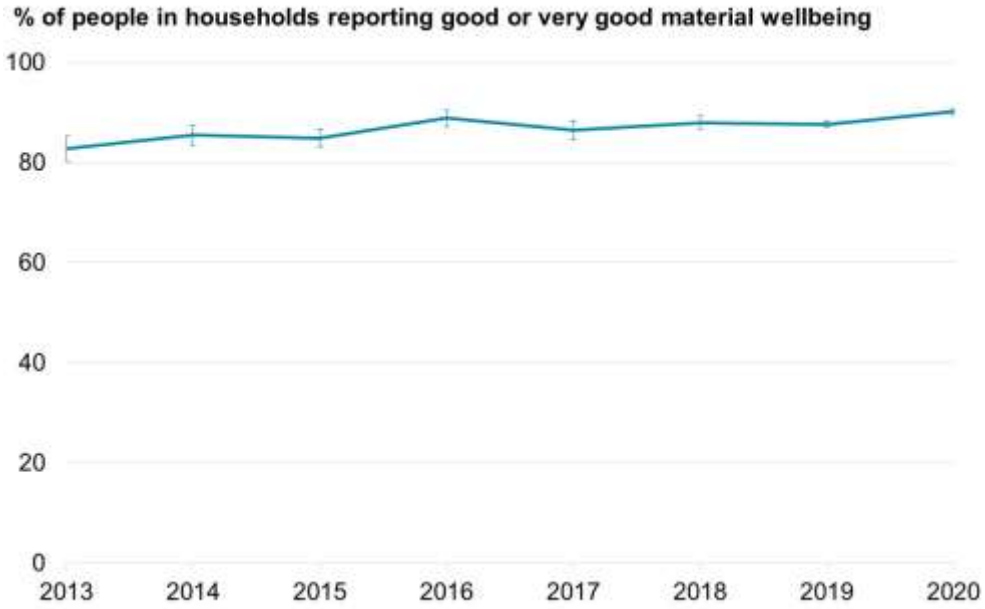
Figure 63: Financial wellbeing by ethnicity over time (LSF Dashboard indicator)



Source: Stats NZ (Household Economic Survey)

Similarly, the proportion of people with a good or very good self-reported level of material wellbeing as calculated in the Household Economic Survey has grown slightly over time.

Figure 64: Self-reported material wellbeing over time

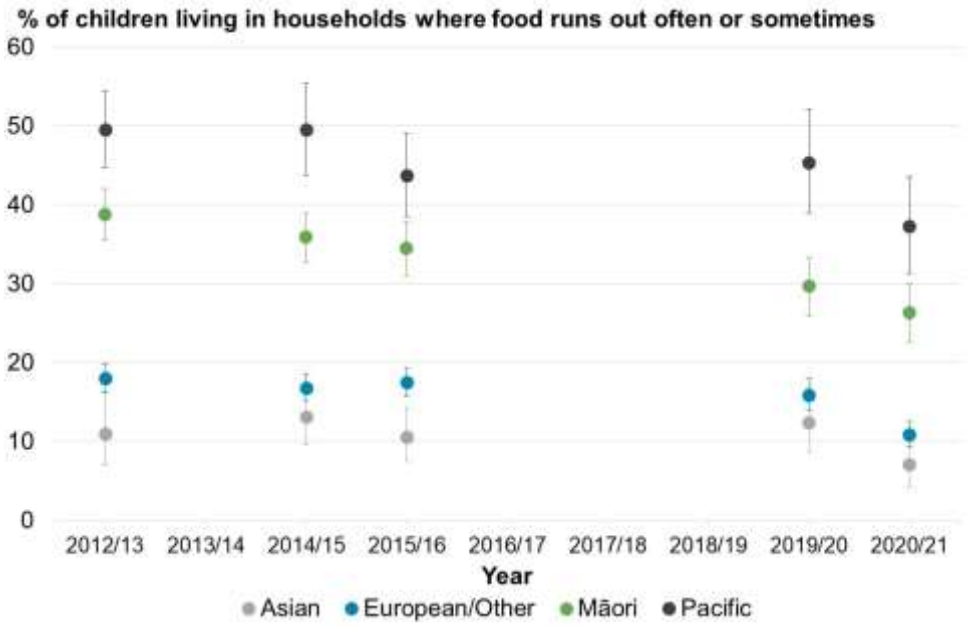


Source: Stats NZ (Household Economic Survey)

Inequality is related to but somewhat distinct from the topic of deprivation, also known as hardship, poverty or sufficiency. Inequality tends to focus on the size of the gap between rich and poor, whereas deprivation focuses on whether those at the bottom have 'enough' according to some measure. Deprivation is particularly relevant to the wellbeing of children, who have little or no ability themselves to meet their own needs.

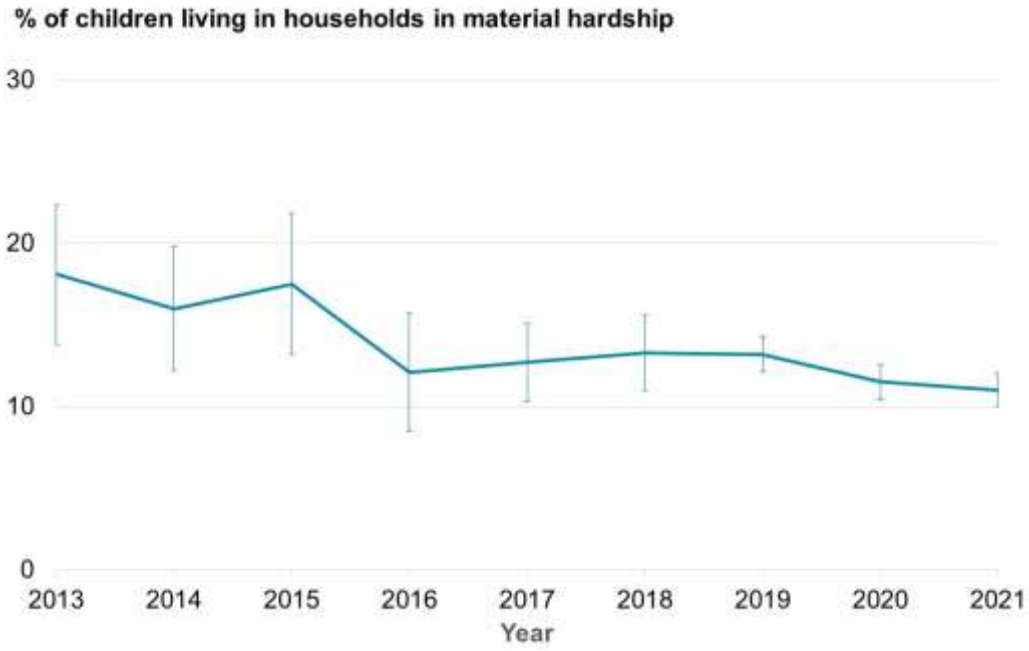
Even though ours is a very rich country by both historical and contemporary standards, there are still many children living in households where food runs out often or sometimes, with these children being disproportionately Māori and Pacific. The trends appear to be positive at least – levels of material hardship and food insecurity are trending downwards for children. However, only recently has the sample size for the Household Economic Survey included enough children to be sure the trend for material hardship is statistically significant, and the sample size for the New Zealand Health Survey only allows us to be sure that the decline in food insecurity is statistically significant for Pākehā and Māori.

Figure 65: Food insecurity among children by ethnicity over time (LSF Dashboard indicator)[26]



Source: Ministry of Health (New Zealand Health Survey)

Figure 66: Material hardship among children over time (LSF Dashboard indicator)[27]



Source: Stats NZ (Household Economic Survey)

26 Data for this indicator has only been collected in certain years.

27 Hardship is defined as having a score of 6 or more items on the DEP-17 index.

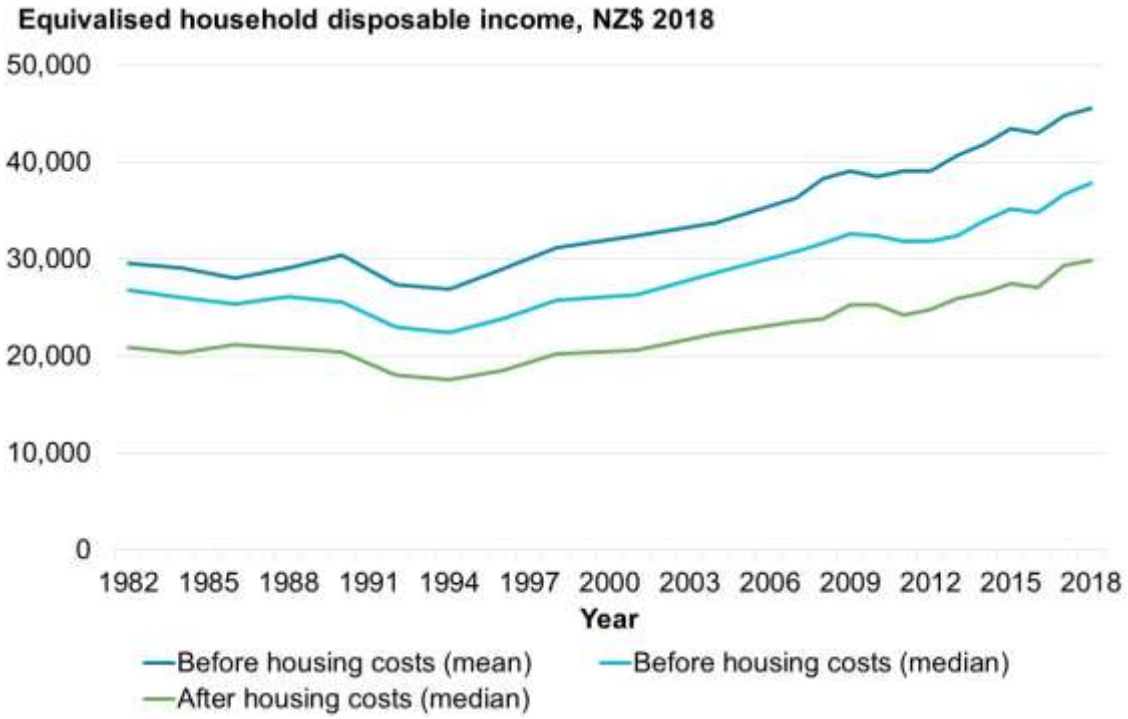
Income

Income refers to the ongoing flow of resources accruing to a person or household over a period of time such as a week or a year. Income can be used to fund a flow of consumption in the same time period, or it can be saved to accumulate wealth that can be used in future time periods.

Income can be measured in several different ways, taking into account things like different household sizes, taxes and transfers and inflation. The most comprehensive estimates of household income in Aotearoa New Zealand come from a series of reports over several years by MSD's Bryan Perry using a measure called real equivalised household disposable income.[28] The most recent calculations by Perry go up to 2018, and Stats NZ has provided estimates for both 2019 and 2020, although these are derived using a slightly different methodology and may not be comparable to the earlier Perry series.

Equivalised household disposable income can be reported before housing costs (BHC) or after housing costs (AHC), but both measures show the same broad trend over time, declining on average between 1980 and the low point in 1994 and climbing steadily since then.

Figure 67: Average household incomes over time (LSF Dashboard indicator)

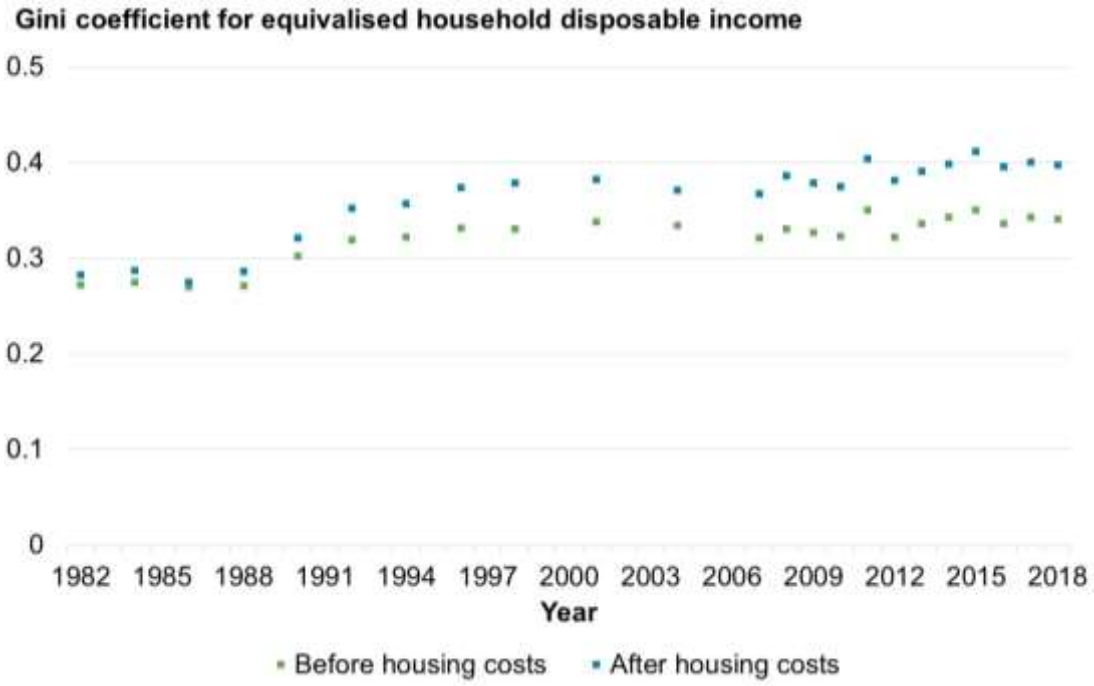


Source: Perry (2019) using data from the Household Economic Survey

28 This measure includes most kinds of income but does not include social transfers in kind. It also does not include capital gains or imputed rents for owner-occupiers. The 'equivalisation' accounts for the fact that households with more people tend to require less income per person to achieve the same material standard of living given the presence of fixed costs. Because people tend to share their income in family units, equivalised household income provides a better measure of the material standard of living of a person than does individual income. The 'real' aspect means the figures are adjusted for inflation.

So the picture is good on average, but averages can be misleading. Like with consumption, perhaps the simplest way to consider the distribution of incomes around an average is with a simple summary metric such as the Gini coefficient. Figure 68 plots the Gini coefficient of disposable household income over time and reveals two key insights. The first is that, in a period of a decade or so starting in the late 1980s, there was a step change upwards in inequality but that inequality has been broadly stable since then. The second is that, in contrast to the 1980s where inequality was roughly the same whether it was measured before or after housing costs, inequality is now higher when measured after housing costs. This reflects the growing gap between home owners and renters, a gap which will be explored in more detail in the next section of this paper.

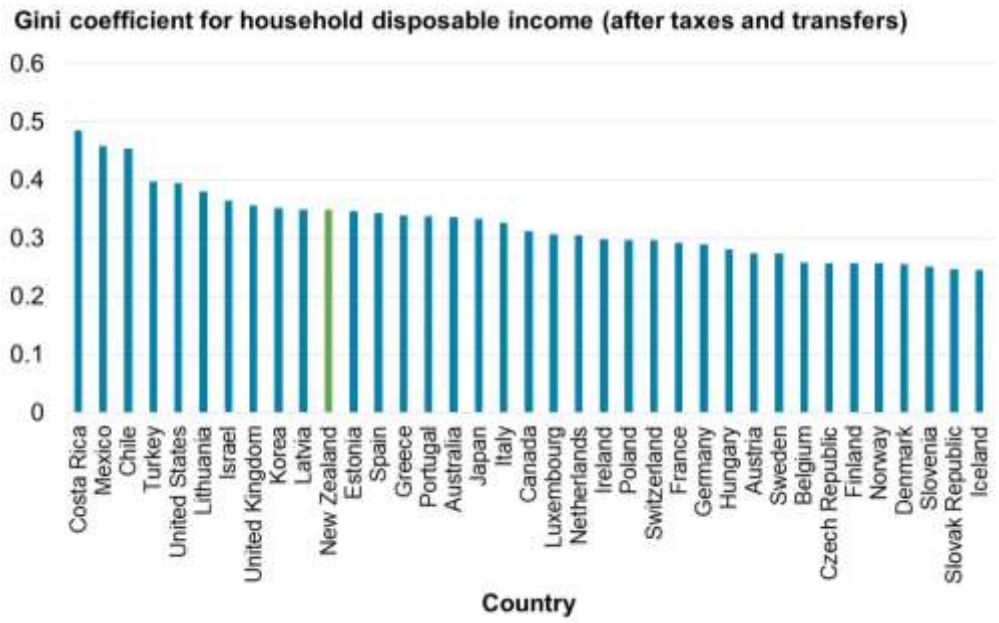
Figure 68: Income Gini over time



Source: Perry (2019) using data from the Household Economic Survey

The latest data from the OECD, while a little dated, suggests that the increase in inequality over the 1990s means that our level of income inequality is now on the high side by OECD standards, although it is still quite a bit lower than in countries like the United States, Chile and Mexico.

Figure 69: Income Gini across the OECD, 2014 or nearest year



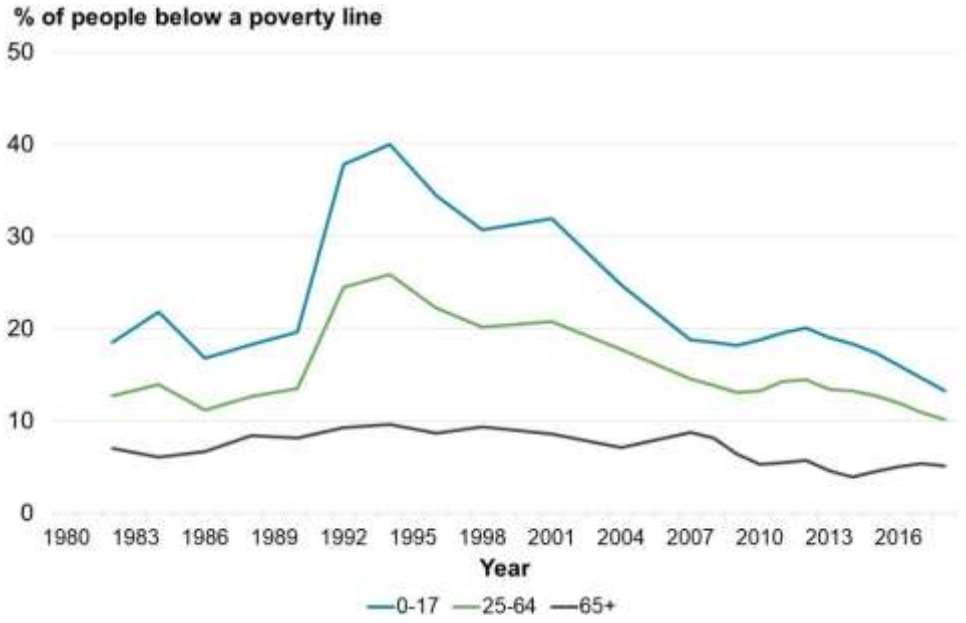
Source: OECD

The Gini coefficient is a useful summary statistic but comes with many limitations. For example, it is not as well suited to consider issues of poverty or hardship. Whereas the Gini coefficient summarises the entire distribution, poverty measures focus on the bottom of the distribution, particularly the number of people below some threshold (poverty line).

There are several different types of poverty line, each telling a slightly different story. One important difference is between ‘before housing costs’ or ‘after housing costs’ measures of poverty, which affect the age composition of poverty. Considering ‘before housing costs’ incomes, retirees make up a large proportion of those with low incomes. But because retirees often own their own homes and thus have low housing costs, ‘after housing costs’ measures of income and poverty have children and younger adults featuring more prominently according to various poverty thresholds.

For example, using 50% of the 2007 median income after housing costs as the fixed reference point, the proportion of children in poverty has dropped substantially since the 1990s. In comparison, the drop in poverty among over 65s has been much more modest, mostly because fewer were in poverty to begin with.

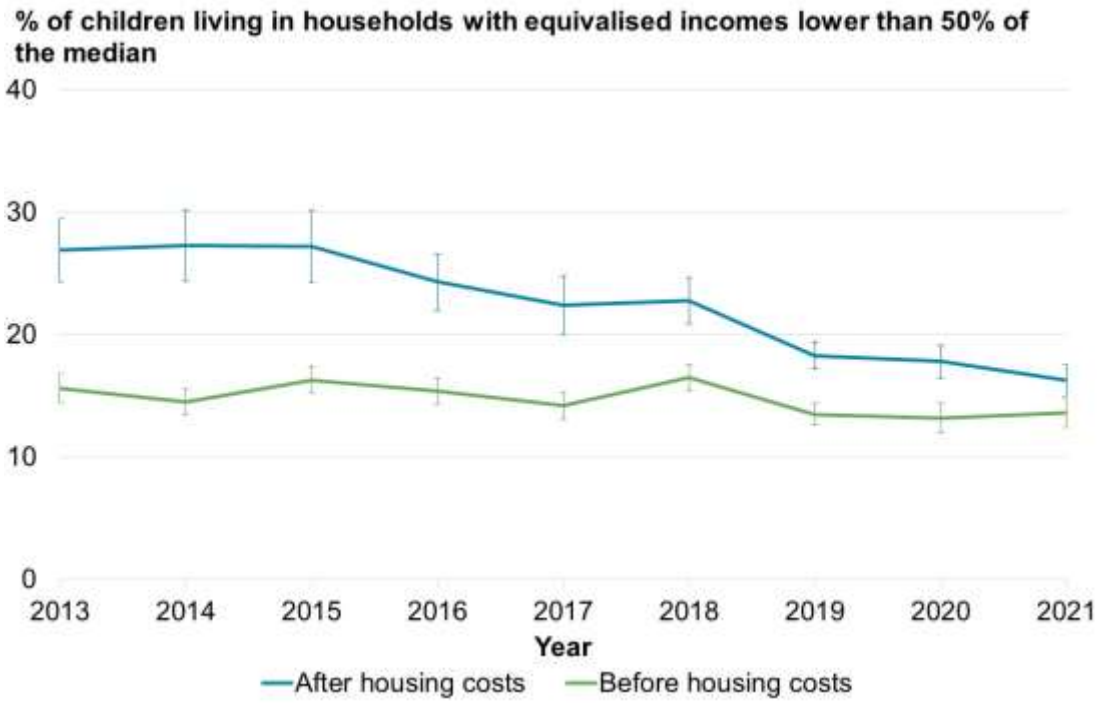
Figure 70: Proportion of people below a poverty line[29] by age over time



Source: Perry (2019) using data from the Household Economic Survey

Child poverty is officially measured under the Child Poverty Reduction Act 2018 using three key metrics. The material hardship measure is shown in Figure 66. The second and third measures are shown in Figure 71. Although rates of poverty before housing costs are relatively flat over time, notwithstanding a small decline since 2018, the other two measures show a distinct improvement over the past 10 or so years.

Figure 71: Proportion of children in income poverty over time



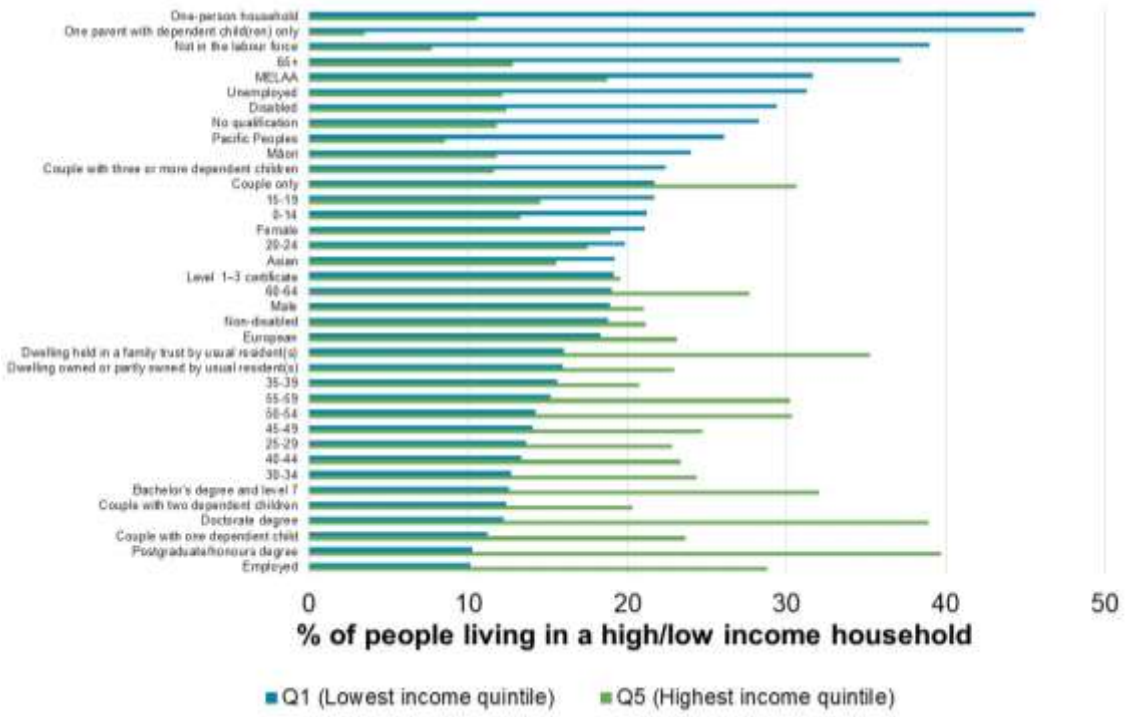
Source: Stats NZ (Household Economic Survey)

29 A fixed line threshold of 50% of the 2007 median household income after housing costs.

Another limitation of the Gini coefficient is that it does not reveal any inequalities in the distribution of income between demographic groups. Age is one important correlate of income but there are many others, as shown in Figure 72.

Sole parenthood is one of the strongest correlates of income. According to the latest release from Stats NZ, 45% of sole parents were in the bottom quintile of 'before housing costs' income.[30] Other groups with income distributions skewed downwards include those living alone, people aged 65 and older, those not in the labour force and people in the Middle Eastern, Latin American and African (MELAA) group of ethnicities.

Figure 72: Low and high income by selected demographics, 2020



Source: Stats NZ (Household Economic Survey)

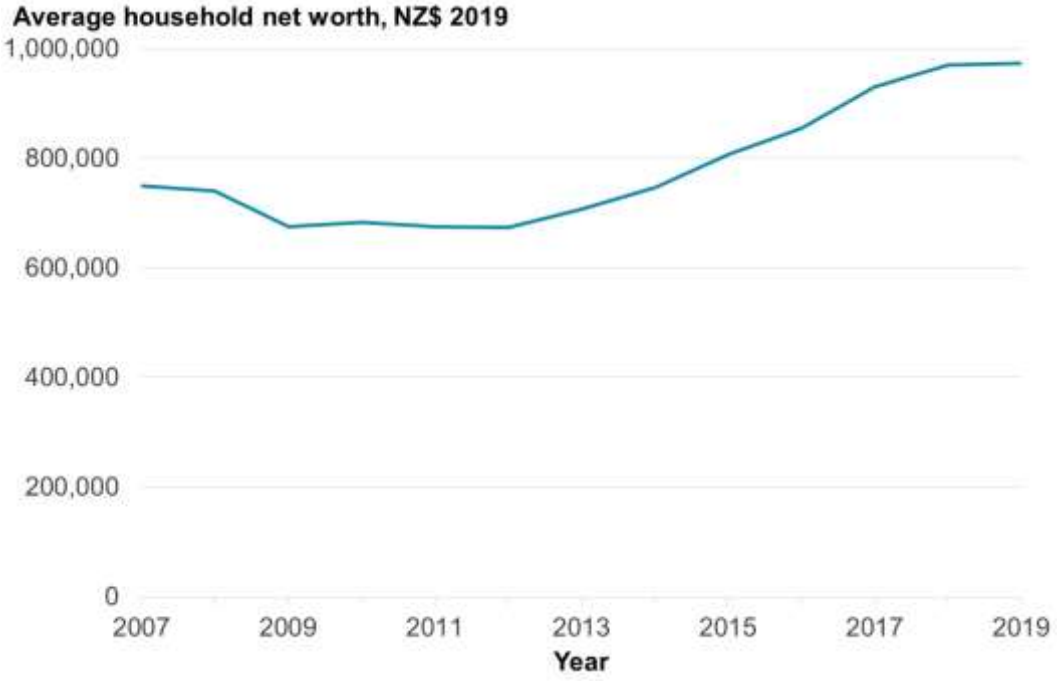
Wealth

Depending on one's stage in the lifecycle and other circumstances, many people and households will try to consume less than they earn, if possible, in order to accumulate wealth. Wealth provides a buffer against future shocks, a resource to use in retirement and a source of capital income and can be put towards motivations such as philanthropy, entrepreneurship and bequest.

Since wealth is the basis for much of our capability to live in ways we value, it is good that our average household net worth has grown rapidly in recent years.

30 The latest figures from Stats NZ do not provide a demographic breakdown of 'after housing costs' incomes, but the 2018 data analysed by Perry (2019) illustrated that sole parents do even worse on this measure, with 60% in the first quintile and only 1% in quintile 5.

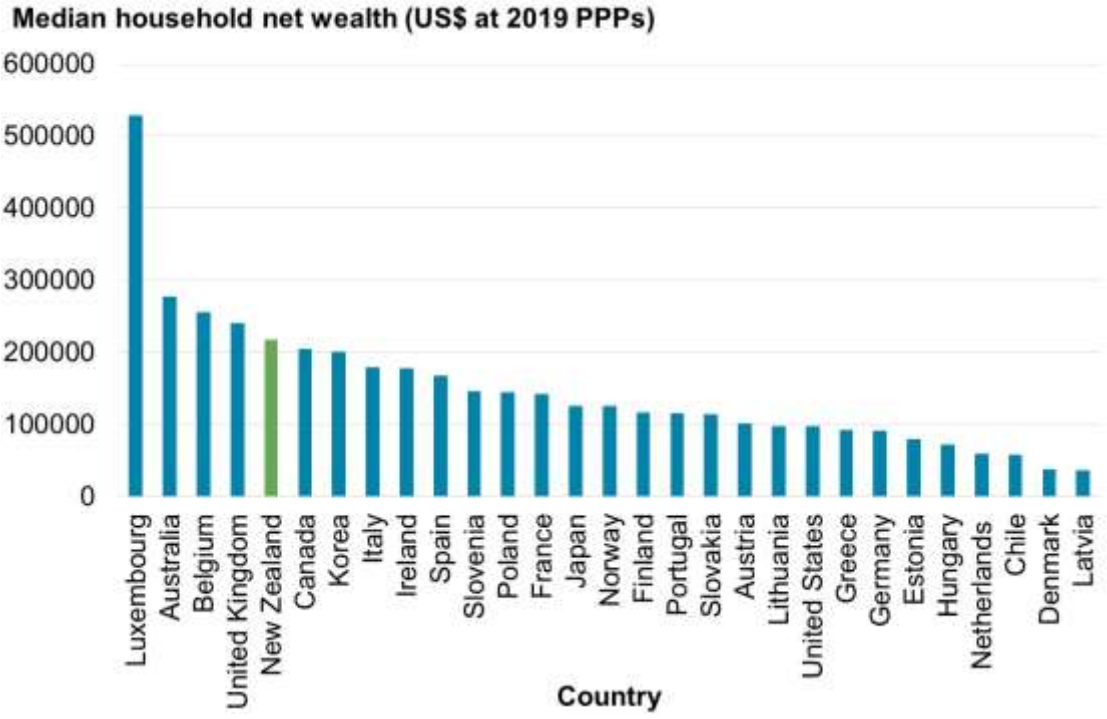
Figure 73: Average household net worth over time (LSF Dashboard indicator)



Source: Stats NZ (National Accounts)

Although wealth data has its problems, particularly in international comparisons, the data we have suggests that New Zealand households are quite wealthy on average in comparison to households in other countries. Although the OECD (2020) data suggests we are below the median country for average household incomes, it also suggests we are above the median country for median household wealth.

Figure 74: Household net worth across the OECD, 2018 or most recent year (LSF Dashboard indicator)



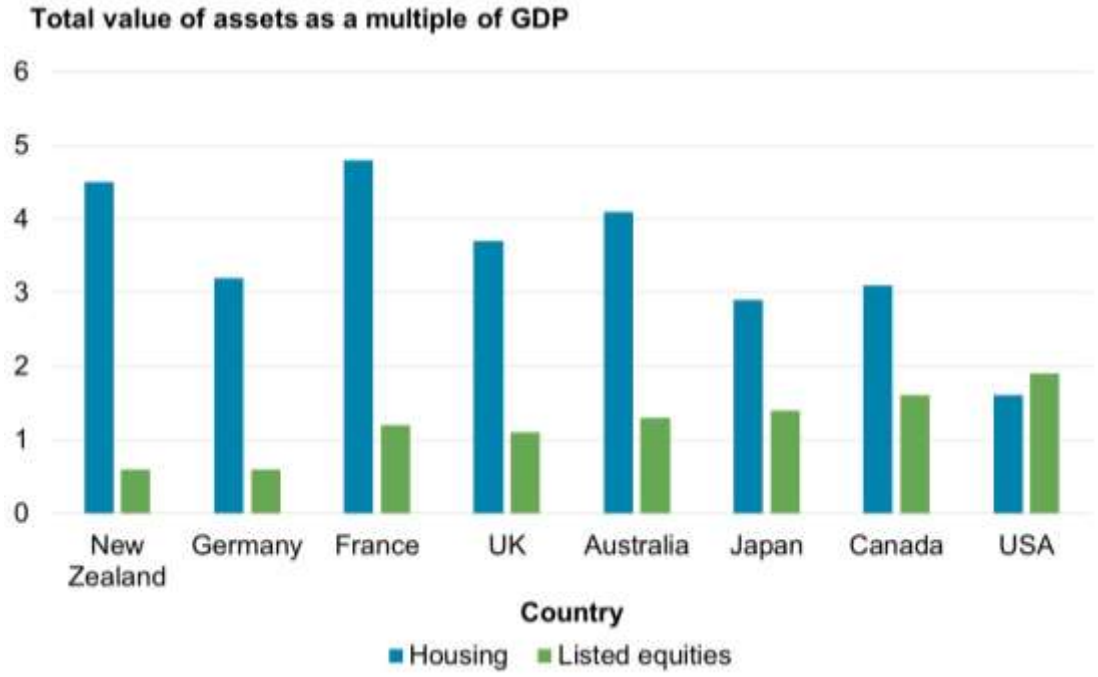
Source: OECD

Much of the difference between our income and wealth ranks has to do with our housing market. Housing is an important component of household wealth, particularly for the middle three quintiles of the wealth distribution. In comparison to other similar countries, analysis by the Reserve Bank of New Zealand (forthcoming) shows that we hold relatively high levels of housing assets and relatively low levels of other assets such as shares.

Figure 75: Real estate as a proportion of household assets by wealth quintile over time

Source: Stats NZ (Household Economic Survey)

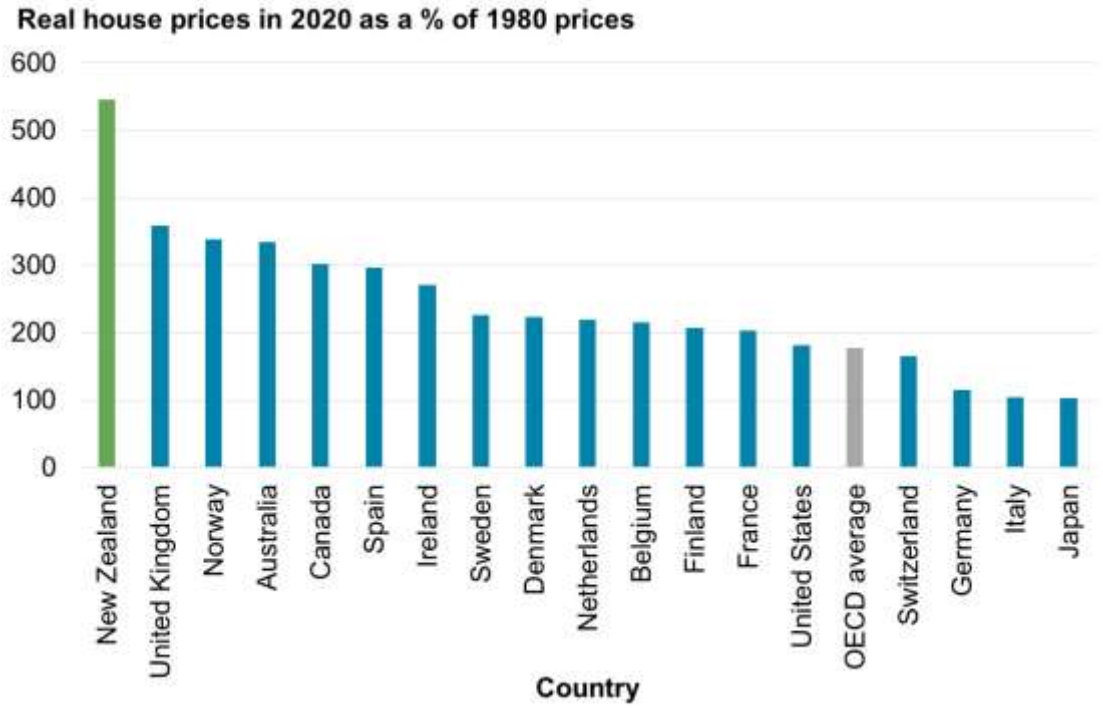
Figure 76: Housing and equity holdings by country, 2020



Source: Reserve Bank of New Zealand

Aotearoa New Zealand's rapid rise in house prices over decades has generated significant capital gains for home owners. Since 1980, house prices have increased by a factor of more than 5 – a greater increase than any other OECD country.

Figure 77: Real house price change across the OECD, 1980-2020



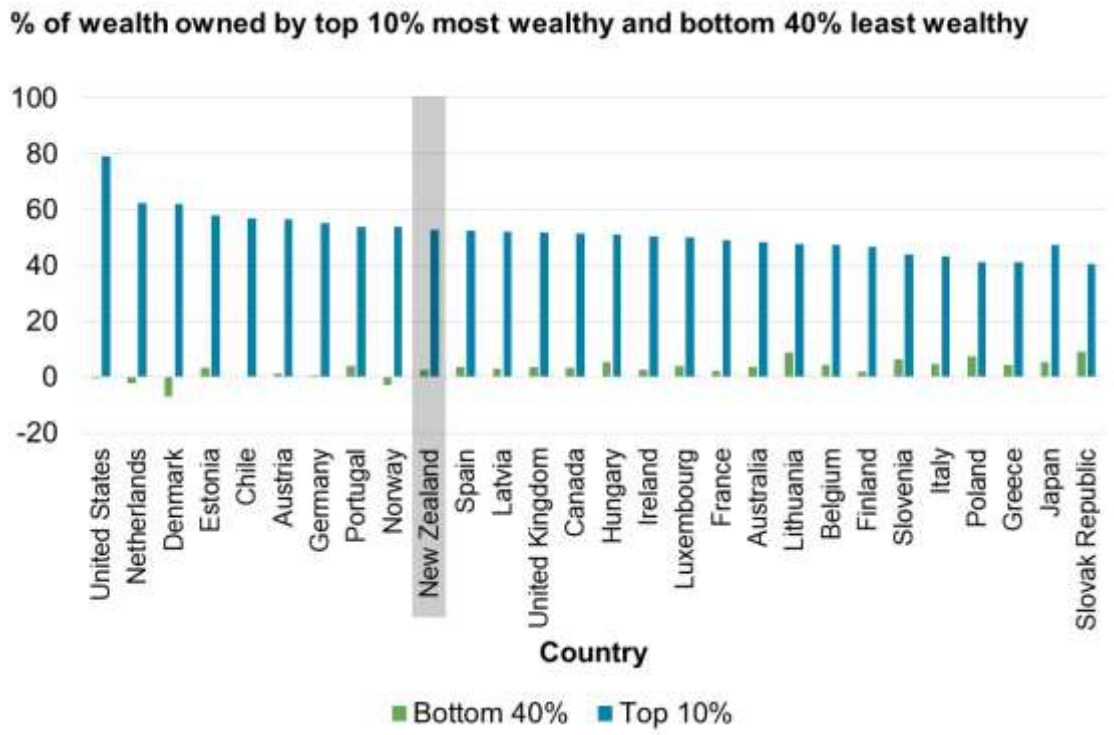
Source: OECD

This increase in average wealth has not benefited everyone equally. A Gini coefficient can be estimated for wealth in the same way as for income or consumption but can give a misleading picture of wealth inequality. For example, with non-housing wealth kept constant, increasing house prices cause an increase in wealth inequality in Aotearoa New Zealand between house owners and non-owners (Symes, 2021). However, the population-wide Gini coefficient fails to convey this due to the concentration of non-housing assets at the top of the distribution. Care must also be taken when calculating Gini coefficients for wealth to account for the fact that many households can have negative wealth (Balestra & Tonkin, 2018).

For this reason, it is often preferable to look at the share of wealth held by different groups in the population. Data from the OECD Wealth Distribution Database is presented in Figure 78. This data shows that, while the bottom 40% of the distribution hold almost no wealth, over half of total wealth is owned by the top 10% of the population. Wealth inequality is high across the OECD, but our figures suggest our wealth inequality is a little higher than average.[31]

31 These OECD estimates are based on household surveys. Stats NZ has recently acknowledged that its survey measures will underestimate the top end of the wealth distribution (Stats NZ, 2022), and the same is likely true of the international estimates.

Figure 78: Wealth distribution across the OECD, 2018 or most recent year

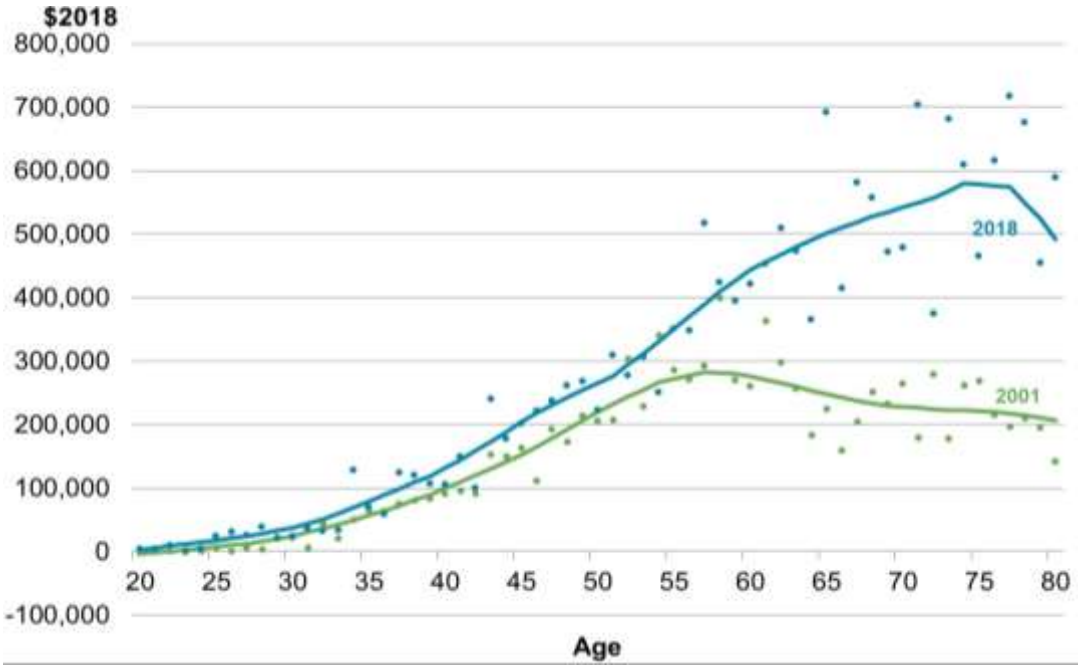


Source: OECD

That wealth inequality is higher than income inequality is partly explained by lifecourse patterns of accumulation of wealth up to retirement and then use of that wealth after retirement. Any given individual will tend to have more wealth at older ages simply because they have had more time to accumulate it. The availability of a public safety net in terms of things like publicly funded health, superannuation, unemployment benefits and accident insurance also means that wealth is not absolutely essential to protect against future shocks, and it may not make sense for lower-income people to forego consumption to accumulate wealth in this context.

However, it is also the case that the increase in overall wealth driven by the housing boom and other factors has disproportionately benefited older age groups, as shown in Figure 79. How this wealth is transferred to subsequent generations as inheritances or bequests will have important implications for the future distribution of wealth. Aotearoa New Zealand has not collected regular data about inheritances or gifts in recent years.

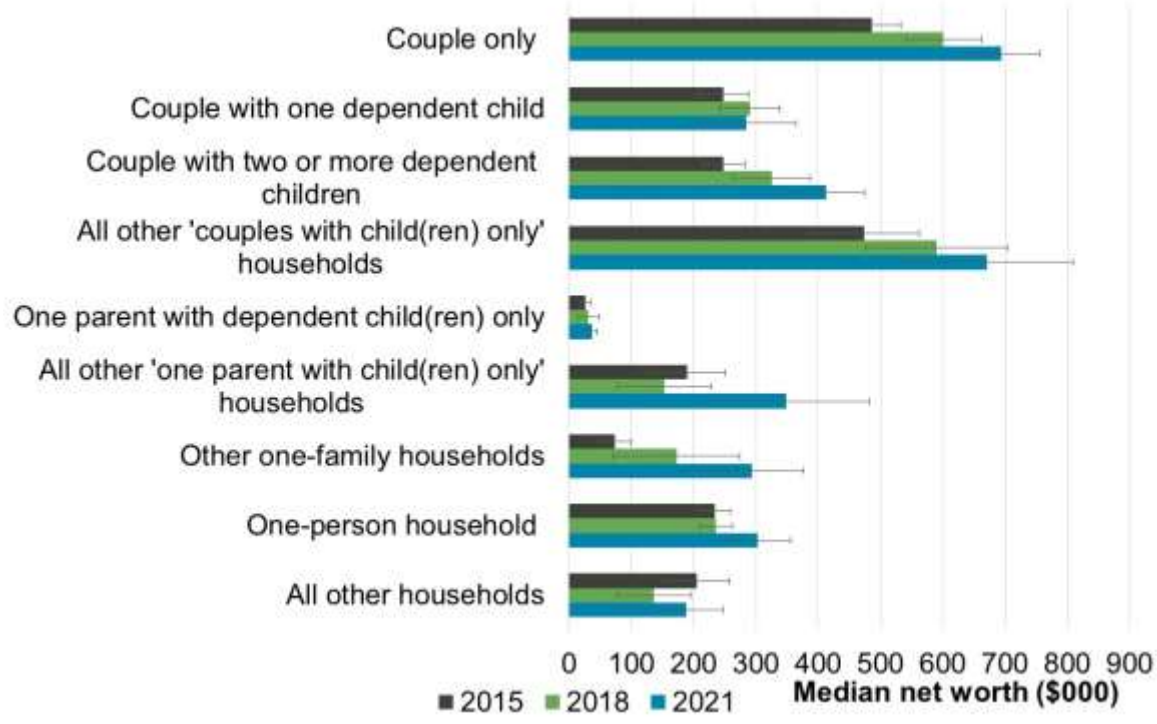
Figure 79: Median wealth by age in 2001 and 2018



Source: Stats NZ (Household Savings Survey and Household Economic Survey)

As with income, some kinds of people and households have systematically higher levels of wealth than others. For example, sole parents have almost no wealth on average and couples without children have very high wealth on average.

Figure 80: Median net worth by household characteristics over time



Source: Stats NZ (Household Economic Survey)

Further reading and links:

Household Incomes in New Zealand

The Wealth Ladder: House Prices and Wealth Inequality in New Zealand

Housing

Overview

Having a place to call home that is healthy, suitable, affordable and stable.

There are at least two ways to think about the relationship between housing and wellbeing. One way is to think about housing as what is described in the capability approach as a 'functioning' – in this case, being housed – and that economists describe as a type of consumption, that of housing services. This view sees housing as a subset of the previous wellbeing domain – income, consumption and wealth. This view of housing leads to a focus on the quality of housing services as measured by things such as size, warmth and so on and the price of those services relative to income.

Another way to think about housing is as a basis for the capability to achieve many other desired functionings such as raising a family, participating in cultural practices such as manaakitanga, forms of leisure such as gardening and DIY and finding membership and identity in a local community. For many people who own their home, their house is also their main asset and as such provides a tangible capability to sustain their wellbeing in the face of future infirmity or loss of income.

In theory, these two roles of housing in our lives can be provided through many different tenure types – private ownership, co-housing, private rental, social rental and so on. But Aotearoa New Zealand's regulatory system has long favoured owner-occupation, with other forms of tenure being seen as temporary stop-gaps or emergency back-ups to the normative owner-occupation. For example, compared to many other countries there is very little tenure security offered to renters in Aotearoa New Zealand (Martin, Hulse & Pawson, 2018).

So it is perhaps no surprise that, on virtually all housing indicators, people living in owner-occupied or family-trust-held housing are doing better than people in other forms of tenure such as private rental. Owner-occupied housing on average tends to be larger, in better condition, a good store of wealth and (for those able to secure a mortgage) more affordable than rental accommodation. Rentals, particularly for people with low incomes, are very expensive compared to income, smaller and more likely to be crowded, in a poorer state of repair, less healthy and less conducive to stable tenure. In a recent survey by Stats NZ, a quarter of people who had moved from one rental to another had done so because the tenancy was ended by the landlord (Stats NZ, 2020).

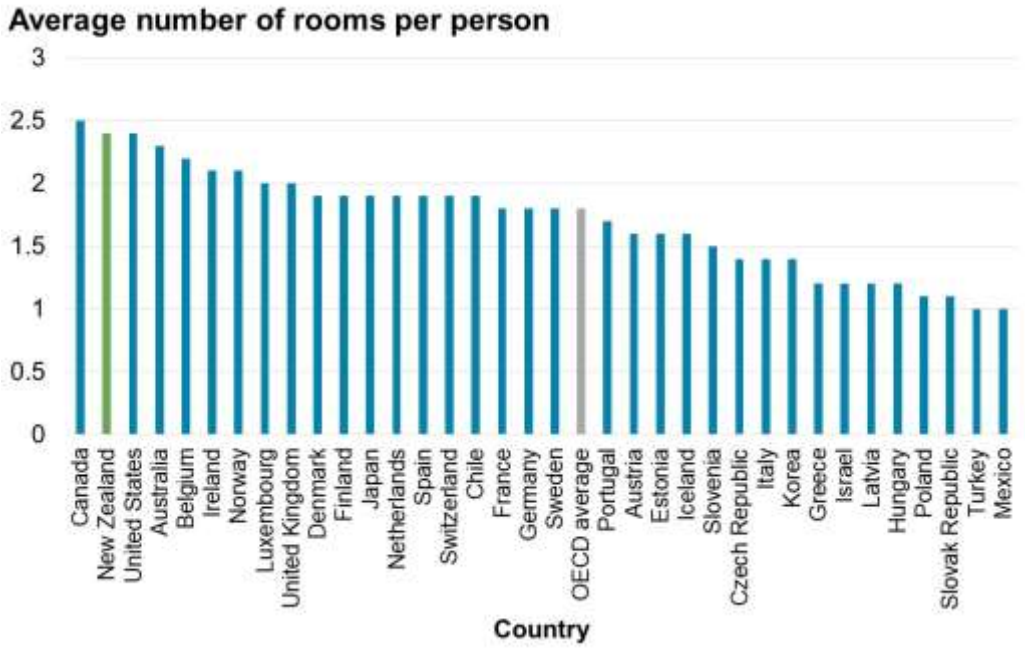
This situation is cause for concern in a context where owner-occupation rates are falling and are lower than the OECD average and where the benefits of home ownership are not equally distributed. Rates of home ownership are higher for Pākehā, for older new Zealanders and for people who are not disabled. The growing gap between owner-occupiers and others thus contributes to a number of inequities between major demographic groups.

This section is in three parts. We start with habitability and then consider affordability and, because both of these dimensions are strongly associated with tenure type, the final part provides an overview of tenure statistics and their relationship with demographic variables.

Habitability

On a rooms-per-person basis, houses in Aotearoa New Zealand are quite large in comparison to those in other OECD countries.

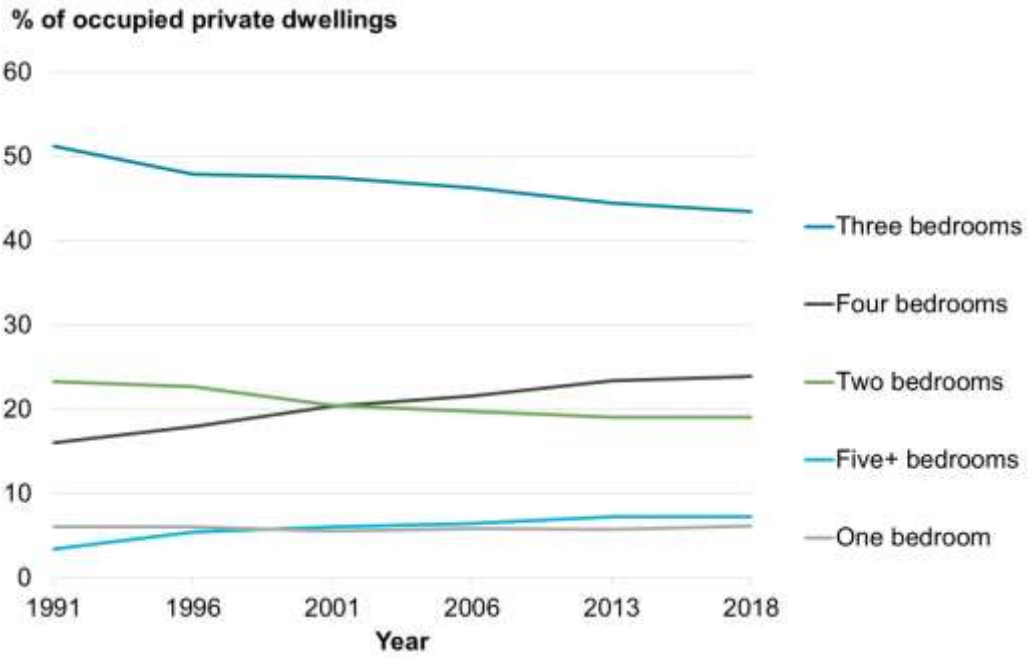
Figure 81: House size across the OECD, 2015 or most recent year (LSF Dashboard indicator)



Source: OECD

Data from the census also shows our houses have been getting bigger over time, with the proportion of houses with two or three bedrooms falling and the proportion with four or more bedrooms growing in the period between 1991 and 2018.

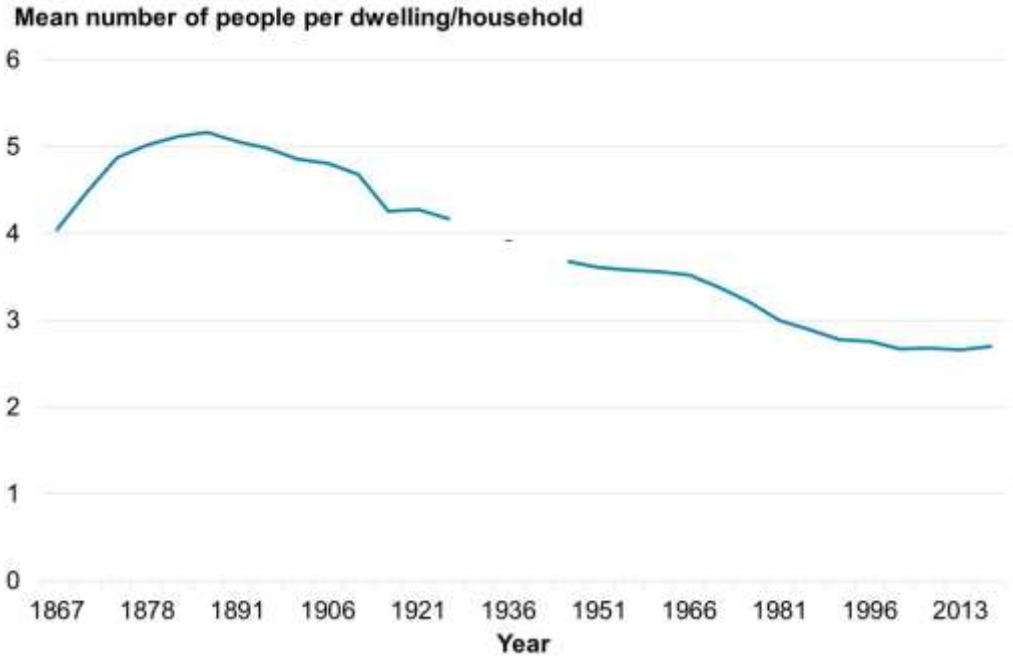
Figure 82: House size over time



Source: Stats NZ (Census)

This tendency towards larger houses is despite a steadily declining rate of average occupation, as the number of people per dwelling has fallen steadily from a high in 1886 to a low in the 2013 Census, even if it did climb a little between 2013 and 2018.

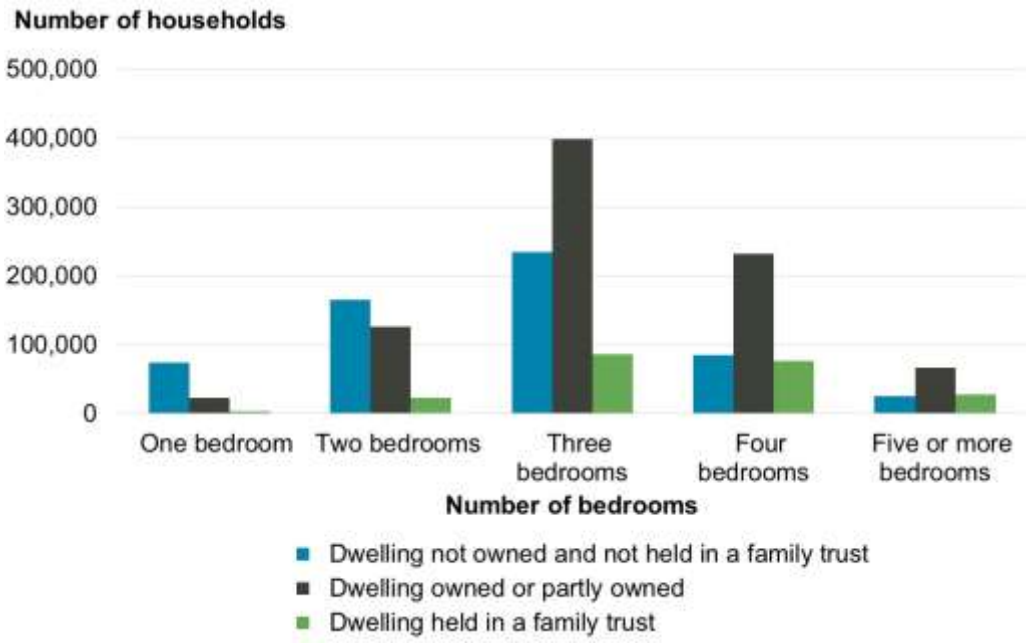
Figure 83: Average number of people per dwelling over time[32]



Source: Stats NZ (Census)

However, not all houses in Aotearoa New Zealand are large. Rentals are smaller on average than owner-occupied houses.

Figure 84: House size by tenure, 2018

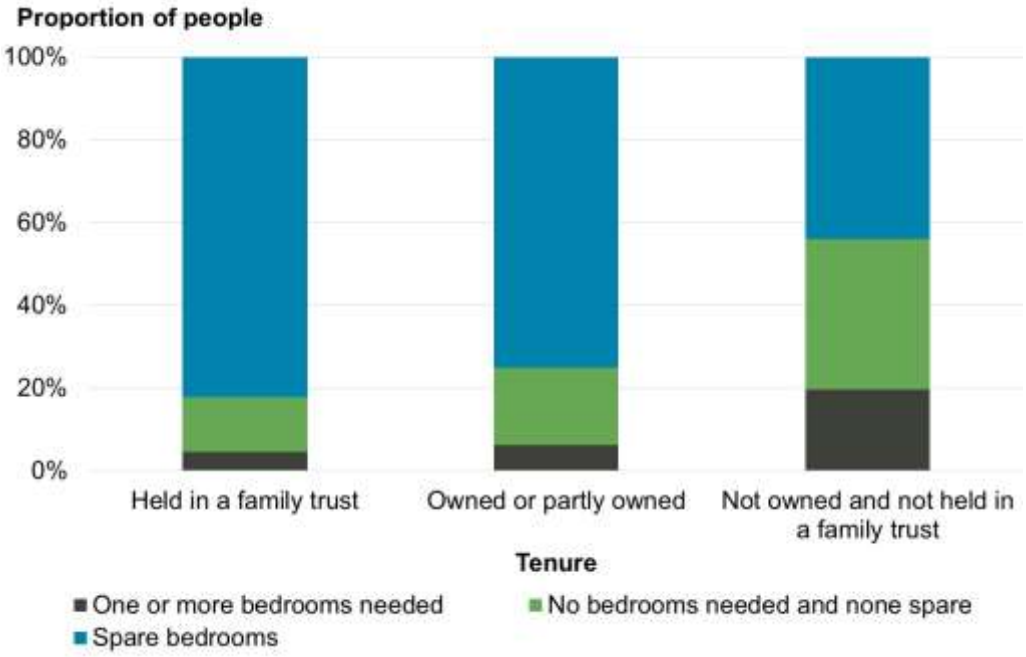


Source: Stats NZ (Census)

32 Note that there were no censuses held in 1931 and 1941, thus the missing data.

The amount of space needed to avoid a house becoming ‘crowded’ is somewhat contentious and depends on both individual preference and cultural norms that can differ over time and between groups. Stats NZ uses the Canadian National Occupancy Standard[33] to provide one view of whether dwellings are adequate to house all their occupants. According to this standard, most houses have spare bedrooms but a minority are short of sufficient bedrooms to house all occupants, particularly rentals.

Figure 85: Prevalence of surplus/insufficient bedrooms by tenure, 2018 (LSF Dashboard indicator)



Source: Stats NZ (Census)

In the Aotearoa New Zealand definition of homelessness, living in temporary accommodation in a private dwelling is considered a form of homelessness if there are no other options to access safe and secure accommodation.

This is the most common type of housing deprivation according to analysis by Amore, Viggers and Howden-Chapman (2021), but there are also quite a few people without shelter or in emergency and transitional accommodation. Further breakdowns of this data, not shown, suggest the number of people in category 1 deprivation (without shelter) and category 2 deprivation (temporary accommodation) fell between 2013 and 2018, but the number in category 3 increased as did the overall total number of people in severe deprivation.

33 Canadian National Occupancy Standard (aihw.gov.au)

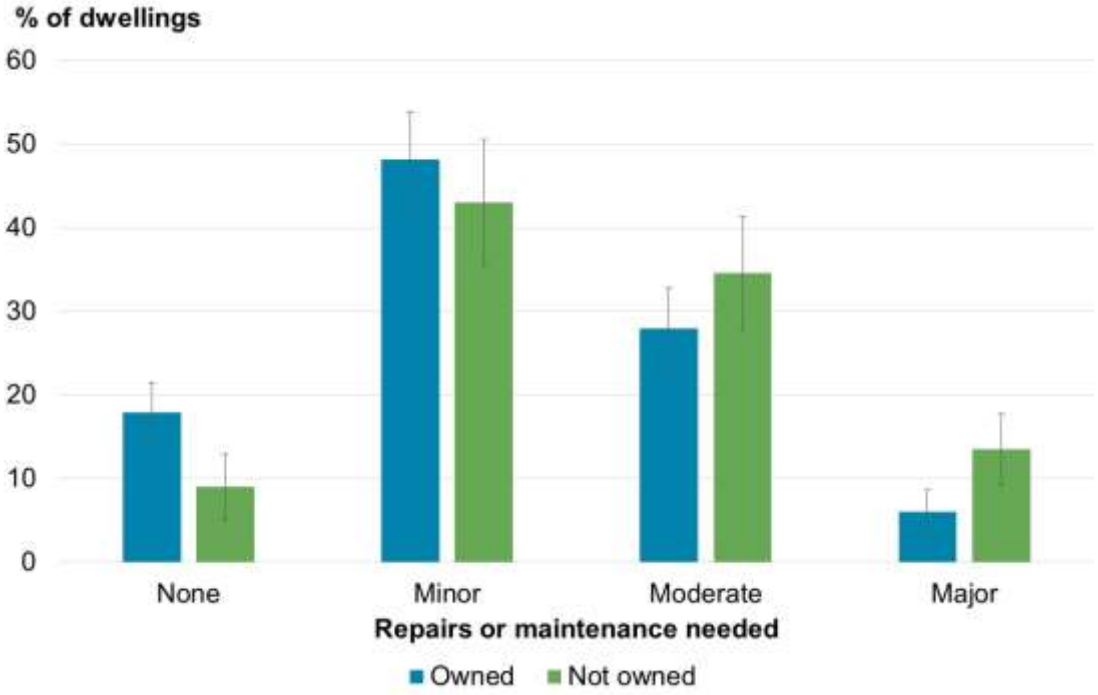
Table 4: Severe housing deprivation by type, 2018

Severely housing-deprived people by housing deprivation category, 2018					
Count and prevalence rate (revised rates, published 2021)					
Broad living situation (New Zealand definition of homelessness category)			Specific living situation	2018	
				No. of people	Prevalence rate per 10,000 people*
1	Without shelter		Roofless/rough sleeper	207	0.4
			Improvised dwelling	1,347	2.9
			Mobile dwelling	2,070	4.4
			Subtotal	**3,624**	**7.7**
2	Temporary accommodation	Emergency and transitional accommodation (NGO-run)	Night shelter	69	0.1
			Women's refuge	96	0.2
			Other accommodation for homeless people	1,530	3.3
			Subtotal	**1,695**	**3.6**
		Commercial accommodation	Camping ground/motor camp	1,521	3.2
			Boarding houses, hotels, motels, vessels	4,668	9.90
			Subtotal	**6,189**	**13.2**
		Subtotal (temporary accommodation)		**7,929**	**16.9**
3	Sharing accommodation (temporary resident in a severely crowded private dwelling)			30,171	64.2
Total severely housing-deprived for the first three categories				**41,724**	**88.8**

Source: Amore, Viggers and Howden-Chapman (2021)

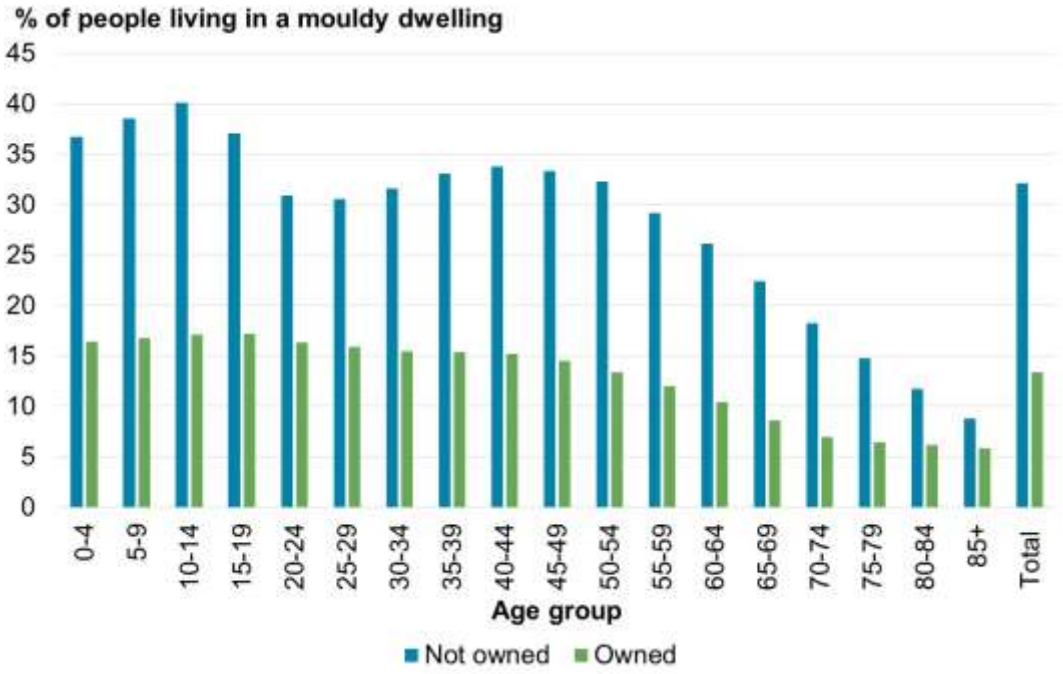
Rentals are not only smaller on average, they are more commonly in need of major repair and are more commonly mouldy, with over a third of children living in rentals being in a mouldy dwelling. These conditions are associated with higher rates of illness, especially among children (Stats NZ, 2019).

Figure 86: Housing condition by tenure, 2018 (LSF Dashboard indicator)



Source: Stats NZ (data from BRANZ Pilot Housing Survey 2018/19)

Figure 87: Mouldy living conditions by age and tenure, 2018

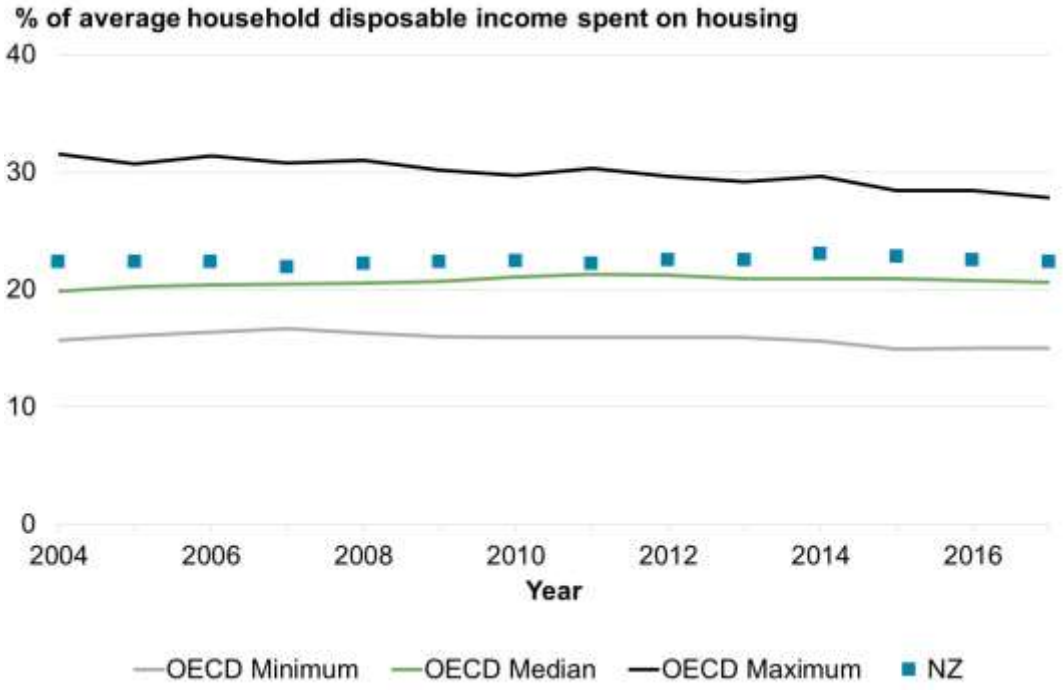


Source: Stats NZ (Census)

Affordability

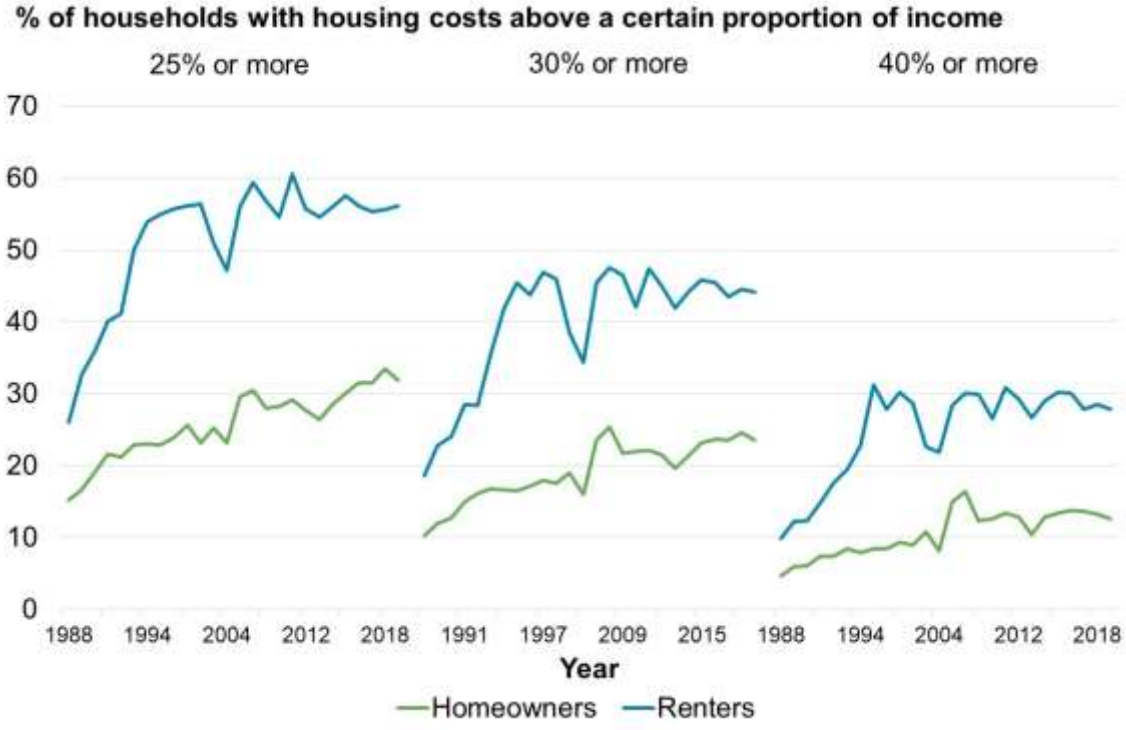
On average, households in Aotearoa New Zealand spend more of their income on housing than three-quarters of OECD countries, but there are substantial differences by tenure. Renters pay a much greater proportion of their income on housing on average, following a large increase in the 1990s.

Figure 88: Housing affordability across the OECD over time (LSF Dashboard indicator)



Source: OECD

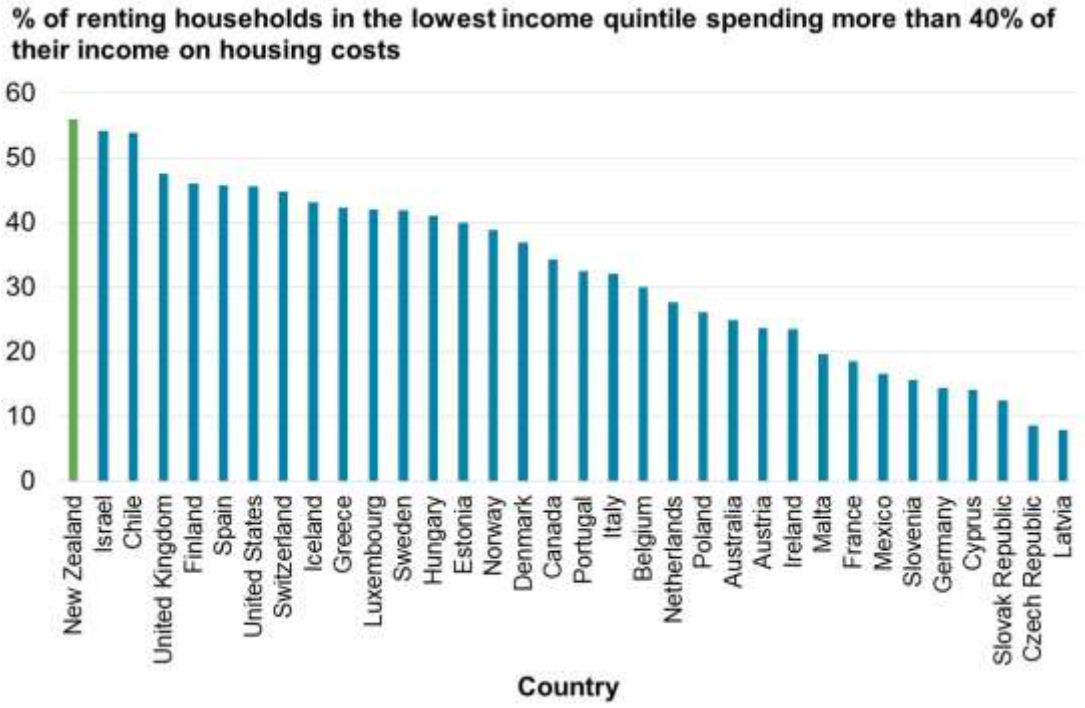
Figure 89: Housing affordability by tenure over time (LSF Dashboard indicator)



Source: Stats NZ (Census)

Housing affordability is a particular problem for low-income renters, with Aotearoa New Zealand being the worst country in the OECD on one measure. In 2019, over half of renters in the bottom income quintile spent more than 40% of their income on rent.

Figure 90: Housing affordability among low-income households across the OECD, 2019

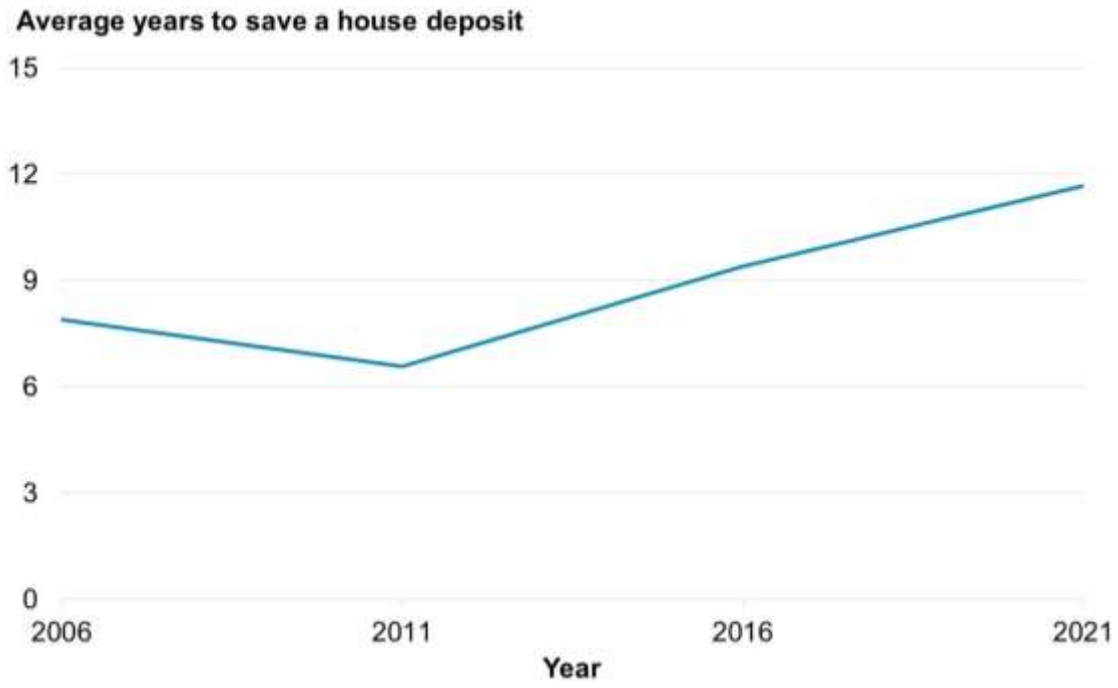


Source: OECD

Low housing affordability for renters is associated with several problems. Housing expenditure can crowd out other forms of consumption and result in material hardship. It also reduces the ability to save, including for a house deposit if a renter wishes to become a home owner. Compared to expenditure on housing for home owners, rent once paid is completely expended whereas, depending on interest rates, a (potentially high) proportion of housing expenditure for owner-occupiers is better thought of as a type of saving as it is increasing net equity. For these reasons, a delayed transition to home ownership can have long-term impacts on wealth accumulation over the lifecycle, with consequences for financial wellbeing in retirement.

It is unfortunate then that renters not only face high levels of unaffordability for their rents but are also finding it increasingly difficult to accumulate a sufficient deposit to transition into home ownership. Estimates by CoreLogic suggest that the number of years required to save a house deposit for the average household has nearly doubled in the past decade.

Figure 91: Deposit affordability over time

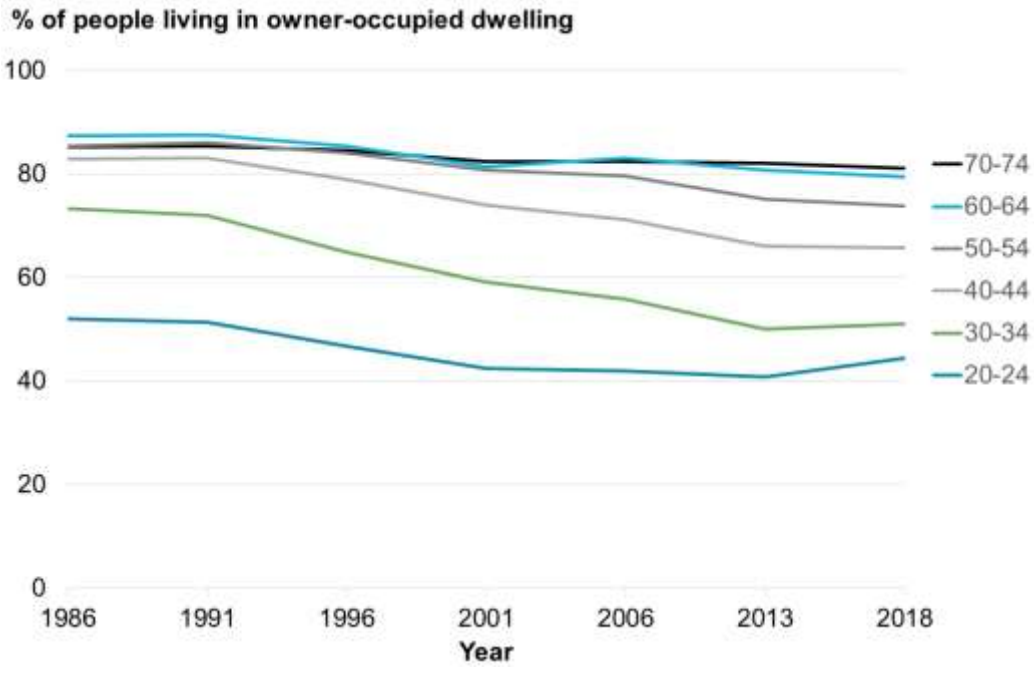


Source: CoreLogic (2022)

Tenure statistics

The previous two parts of this section highlighted how many aspects of housing-related wellbeing vary systematically with tenure type. Given that, it is useful to review key aspects of our tenure statistics. Home ownership has declined steadily since the 1980s, with most of the decline among people under the age of 60, reflecting a steadily increasing age for first home purchase.

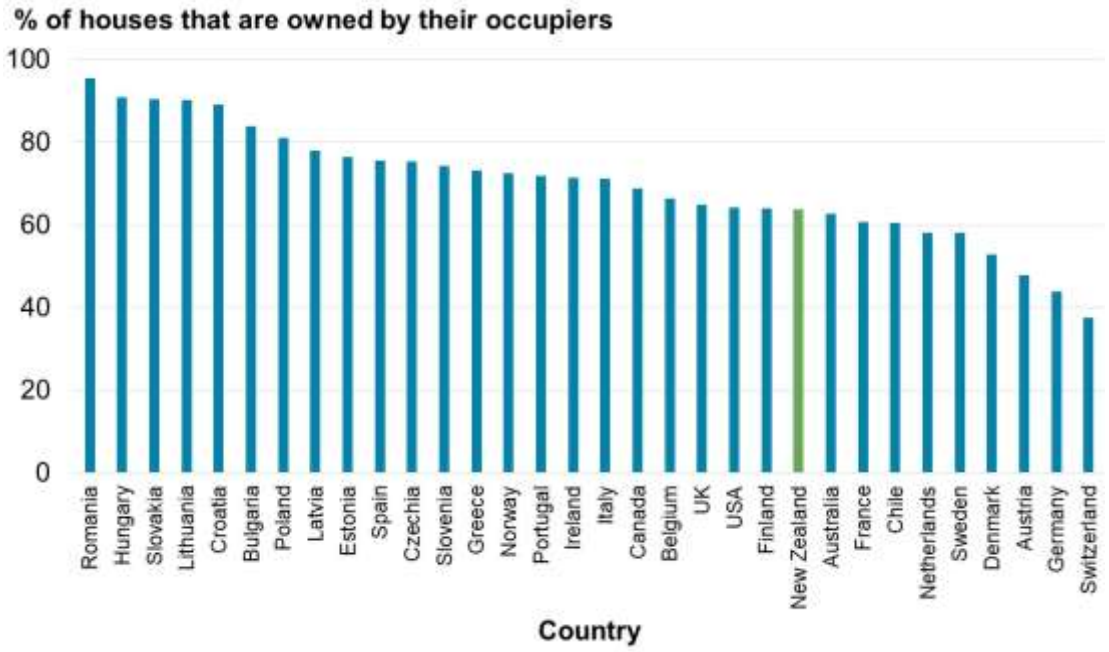
Figure 92: Home ownership rates by selected age groups over time



Source: Stats NZ (Census)

The decline has been such that our rates of owner-occupation are now below the OECD average.

Figure 93: Home ownership rates across the OECD, 2019

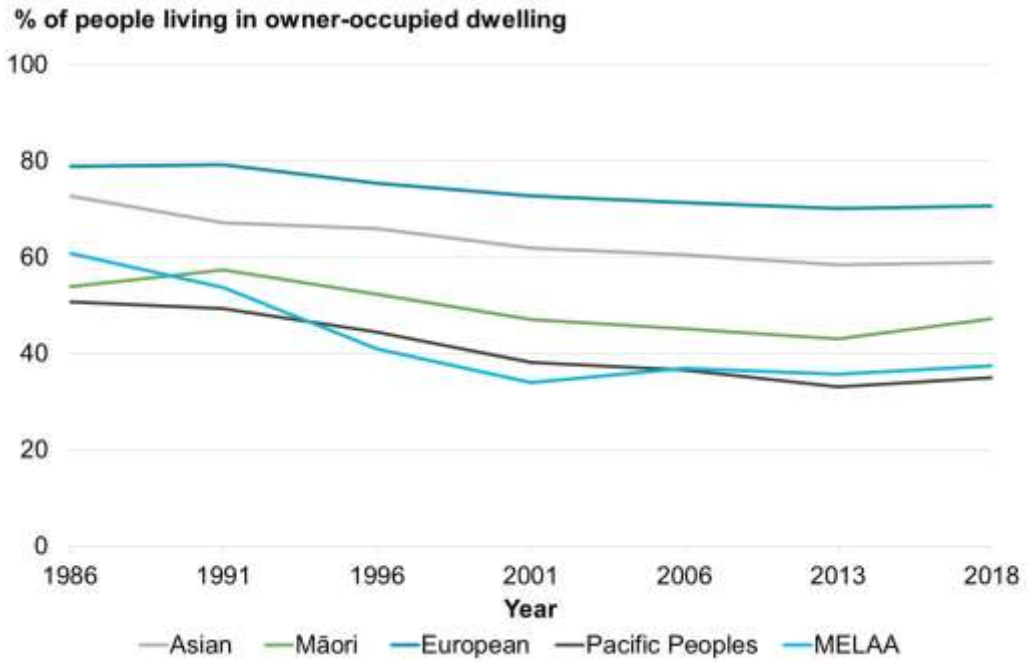


Source: OECD and Perry (2021)[34]

Rates of ownership have fallen over time across all ethnic groups but are still highest for Pākehā. Research using age standardisation found that this partly, but not completely, reflects the older age structure of the Pākehā population (Goodyear, 2017). In other words, after controlling for age, Pākehā still have higher rates of home ownership.

34 The New Zealand rate is calculated by Perry using the Household Economic Survey and includes houses owned by family trusts. Data for other countries comes from the OECD housing database.

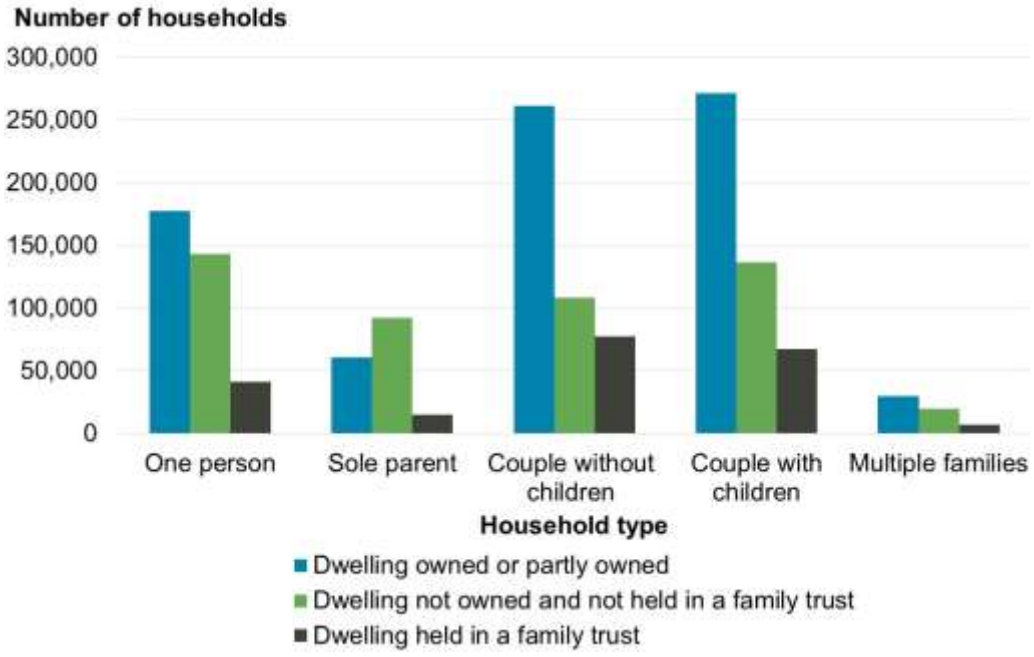
Figure 94: Home ownership rates by ethnicity over time (unstandardised)



Source: Stats NZ (Census)

Family type is also closely related to tenure type, with sole parents being the least likely to own their own house and couples being the most likely to own their house or have it in a family trust.

Figure 95: Tenure type by household composition, 2018[35]

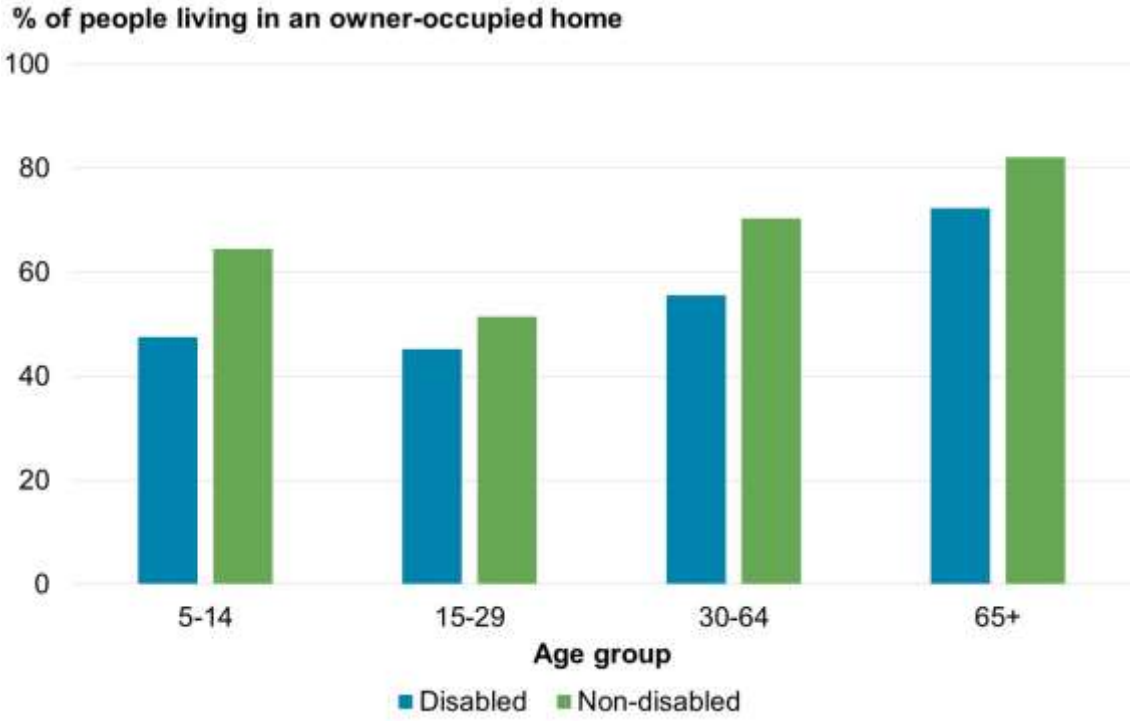


Source: Stats NZ (Census)

35 Note that, in all cases except the one-person household, we have combined households with and without additional people. For example, 'couple without children' includes households both with or without additional individuals living in the house with the couple.

Disability status is also associated with tenure type, with disabled people being less likely to own their own house than non-disabled people.

Figure 96: Owner-occupation rates by disability status and age, 2018[36]



Source: Stats NZ (Census)

Further reading and links:

Housing in Aotearoa 2020

[36] Owner-occupied homes are those owned or held in a family trust by a member of the household.

Environmental amenity

Overview

Having access to and benefiting from a quality natural and built environment, including clean air and water, green space, forests and parks, wild fish and game stocks, recreational facilities and transport networks.

The natural environment plays a large role in sustaining our wellbeing, both directly and indirectly. The natural environment is implicit in nearly all the wellbeing domains. For example, housing requires timber and other materials to construct and energy for cooking, heating and so on. Health requires nutritious food, which again is a product of the natural environment. A relationship with the natural environment is a central part of cultural capability and belonging for many people, and the environment provides key opportunities for leisure and play.

The ability of the environment to continue sustaining our wellbeing in these many ways and the risks that the environment poses to our wellbeing through hazards such as floods and earthquakes are much bigger questions than can be addressed in this paper. In terms of the LSF, these questions are about the environment overall as one of the four aspects of our national wealth and about the institutional arrangements we have in place to protect the environment. As such, these questions will be addressed in a future paper.

For this analysis of trends in individual and collective wellbeing, we limit our attention to a few key measures of how the environment directly contributes to our wellbeing such as via providing air to breathe, water to drink and green space to play in. The scope of this paper means that the selection of indicators is necessarily limited. Much more detail is available in reports from the Ministry for the Environment and others, with some important links provided at the end of this section.

These are the key takeaways from this section:

- By international standards, our air quality is very good and is generally improving. However, air pollution exceeds thresholds on some occasions in some places, particularly in colder parts of the country where residential wood-burning for heat is common in winter such as Arrowtown and Invercargill.
- Many of our rivers are not very safe for swimming without risking illness, particularly in urban areas. Most sites appear to be improving over the past 20 years, but a minority are worsening.
- About one in five of us is supplied with drinking water that is not treated to all the relevant standards and so may at times be unsafe.
- Over the past 50 years, severe droughts appear to be increasing in frequency in many parts of the country and becoming less frequent in only a few places.
- The proportion of New Zealanders who think the quality of the environment is good or very good has declined over time, with people most concerned about the quality of our fresh water.

- Across a wide range of demographic groups, a majority of people find it very easy to get to their local green space or park, but the majority is smaller for disabled people and some other groups.
- Rural dwellers suffer from weaker transport networks but benefit from greater environmental attractiveness.

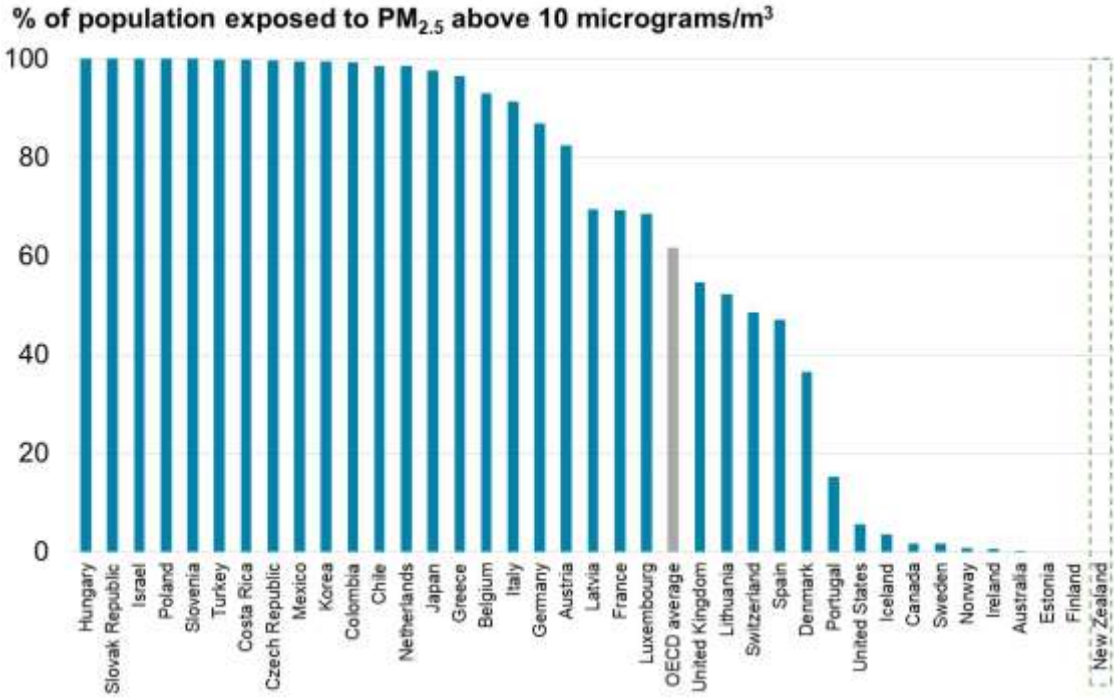
This section considers first air then water, before covering data on environment perceptions and the built environment.

Air

Air quality is assessed primarily by the prevalence of small particles in the air. Some of these particles are naturally occurring such as pollen and sea salt, but human processes such as burning wood are also important contributors.

The smaller particles, below 2.5 microns in diameter, are the most harmful to our health. On this measure, known as $PM_{2.5}$, Aotearoa New Zealand does exceedingly well in comparison to other OECD countries. Essentially no one is exposed to small particles above the threshold level.

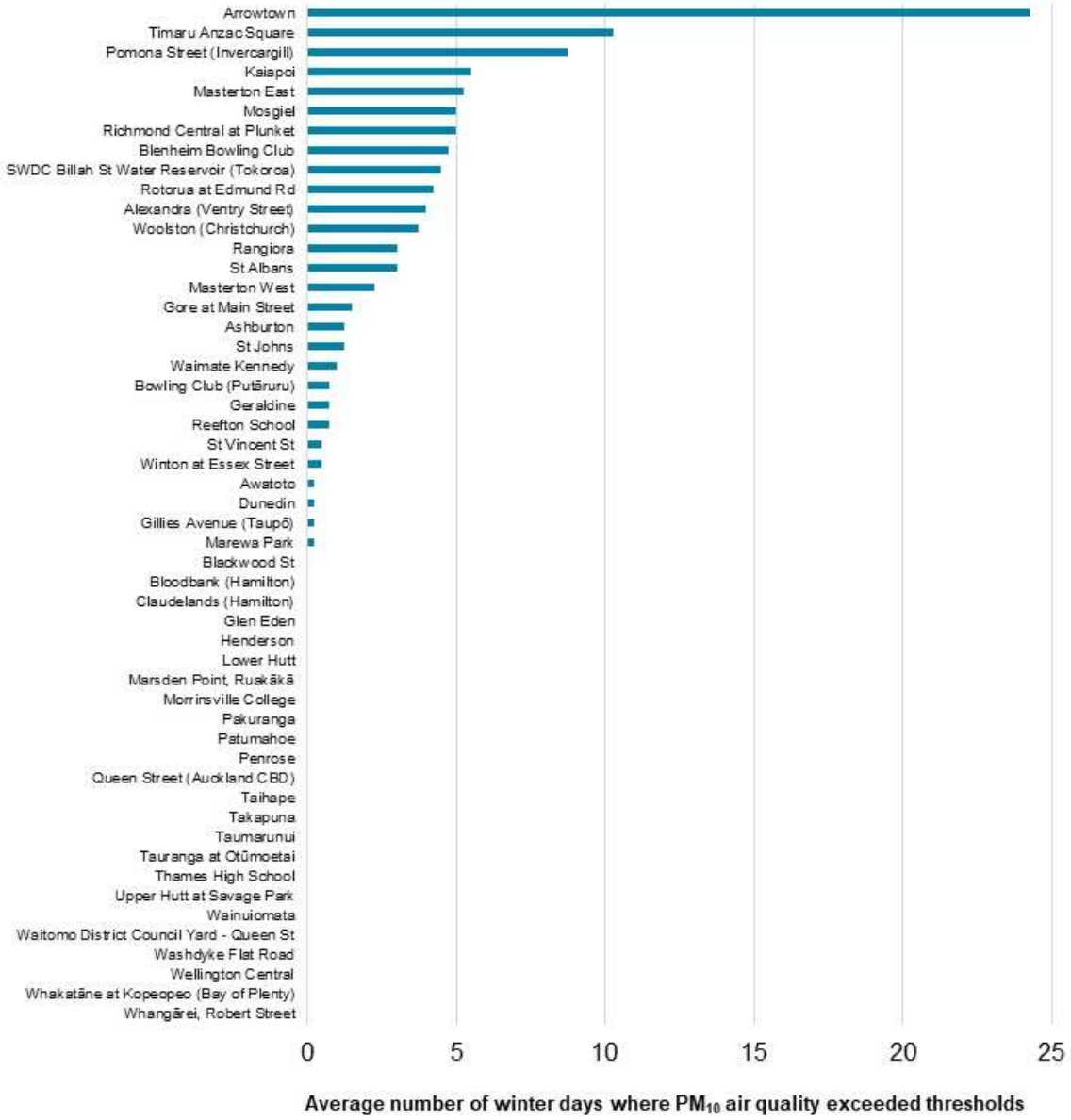
Figure 97: Air quality across the OECD, 2019 (LSF Dashboard indicator)



Source: OECD

For slightly larger particles, known as PM_{10}, Parliament has established concentration thresholds in the Resource Management (National Environmental Standards for Air Quality) Regulations 2004. Between 2017 and 2020, most sites across the country exceeded the thresholds rarely or never. However, there are some parts of the country, particularly in the South Island where winter temperatures are lower and domestic wood-burners more common, where thresholds are exceeded several times a year.

Figure 98: PM_{10} air quality by site, average 2017-2020



Source: Stats NZ (Environmental Indicators)

There is evidence of improvement in most places between 2011 and 2020, although the trend was worsening in Wainuiomata, Pukekohe and Nelson.

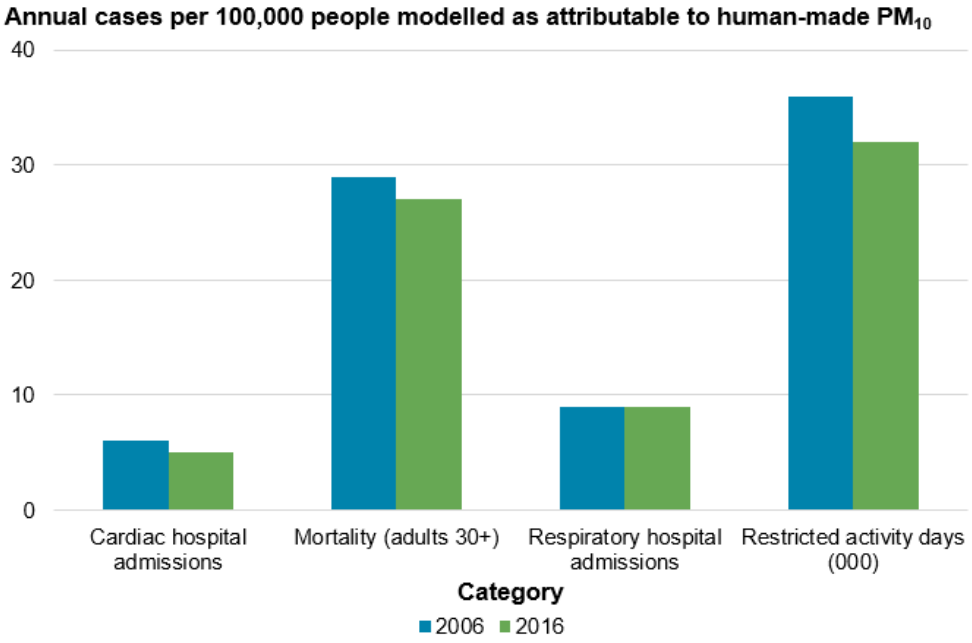
Table 5: Change in PM_{10} concentrations by site, 2011-2020

Trend	Test site
Worsening	Nelson
	Pukekohe
	Wainuiomata
Indeterminate	Lower Hutt
	Marsden Point
	Masterton East
	Penrose
	Rangiora
	Taihape
	Upper Hutt
Improving	Ashburton
	Auckland
	Awatato
	Christchurch
	Dunedin
	Geraldine
	Gore
	Hamilton
	Henderson
	Invercargill
	Kaiapoi
	Mosgiel
	Napier
	Putāruru
	Richmond
	Takapuna
	Taupō
	Te Kuiti
	Timaru
	Tokoroa
	Wellington
	Whangārei

Source: Stats NZ (Environmental Indicators)

Modelling of the health impacts of PM_{10} particles suggests an overall reduction in the health burden between 2006 and 2016. Commentary by the Ministry for the Environment (2021) in its most recent report on the quality of our air suggests that the reduced health impact is driven largely by greater numbers of people living in areas with lower PM_{10} concentrations such as Auckland.

Figure 99: Health impacts from PM_{10} over time (LSF Dashboard indicator)

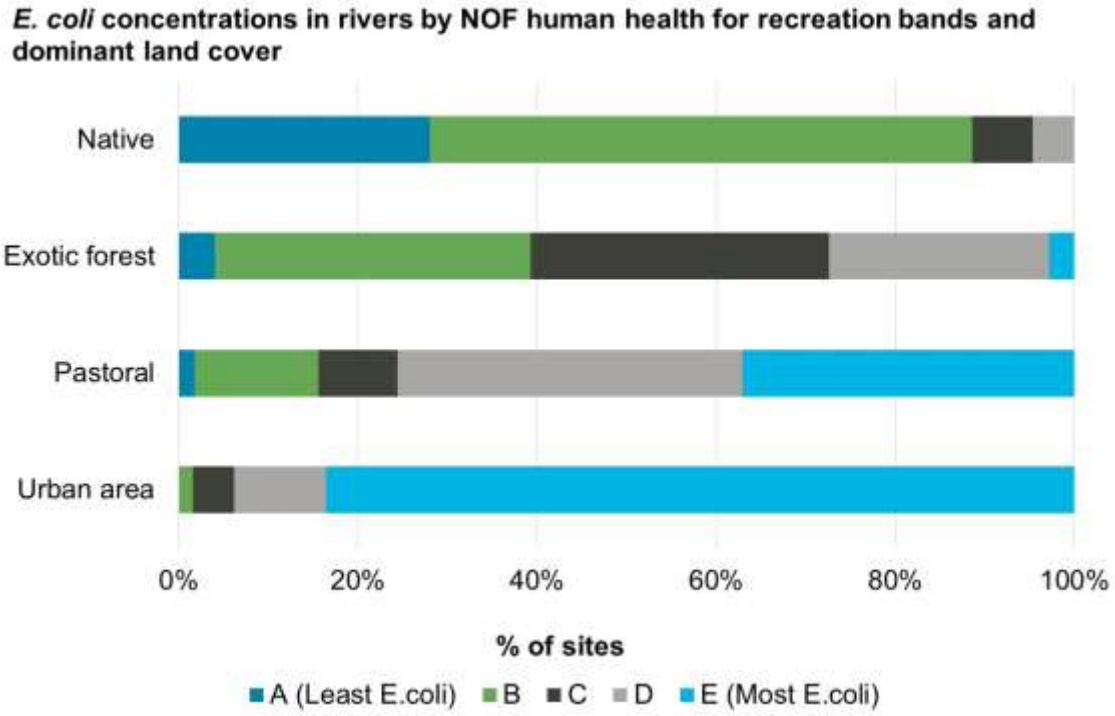


Source: Stats NZ (Environmental Indicators)

Water

River health can be measured in many ways, but for simplicity, we focus on one headline indicator, the concentration of *Escherichia coli* bacteria (*E. coli*). This indicator is particularly relevant to the use of rivers for swimming and other forms of recreation such as rafting, eeling and so on. In its National Objectives Framework (NOF), the Ministry for the Environment has defined five separate bands of increasing concentration of *E. coli* based on the likelihood of becoming sick if using the river. The data shows that bacterial concentrations vary greatly by land use. Nearly all rivers in native forest have low levels of *E. coli*, but a large majority of urban rivers are in category E, the most likely to result in illness.

Figure 100: *E. coli* concentrations in rivers by land cover type, 2013-2017 (LSF Dashboard indicator)

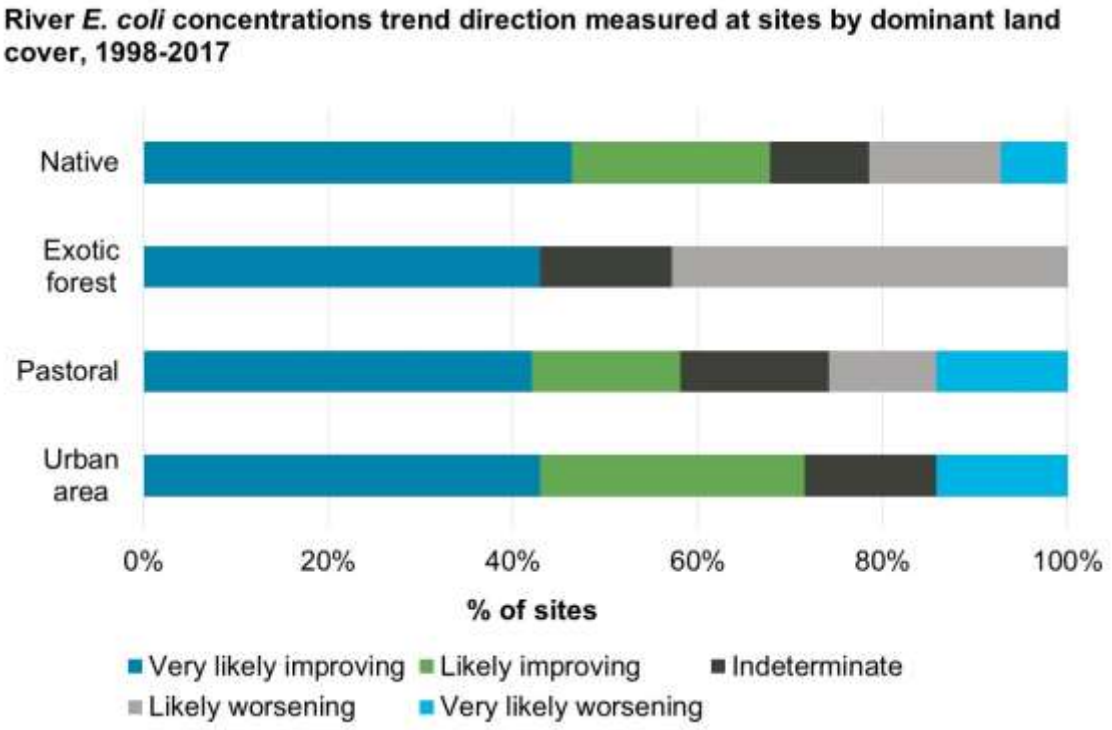


Source: Stats NZ (Environmental Indicators)

Trend data for the past two decades suggests most sampling sites have been improving, although a minority of sites across all land use types are likely or very likely to have been worsening, providing an overall mixed picture of progress.[37]

37 The picture is even more mixed when considering a wider range of indicators of overall river health, not shown, such as the macroinvertebrate index and nitrogen concentration.

Figure 101: Change in *E. coli* concentrations in rivers by land cover type, 1998-2017 (LSF Dashboard indicator)[38]

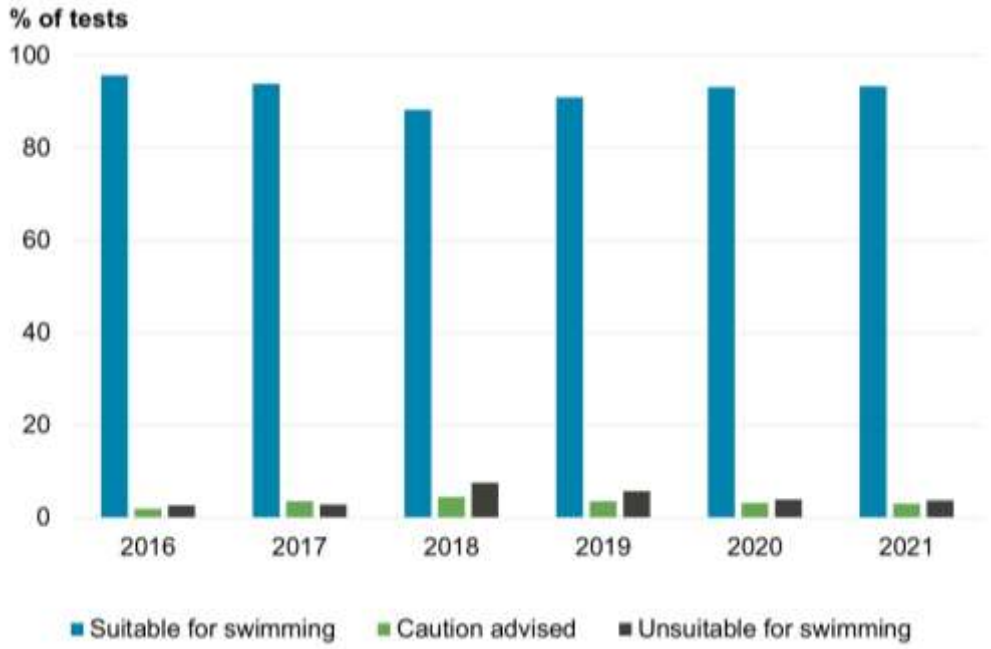


Source: Stats NZ (Environmental Indicators)

Tests for coastal sites paint a generally more positive picture. Although there are certain sites that are regularly polluted such as in Auckland's harbours, the large majority of tests performed at sites across the country find that bacterial levels are no impediment to safe swimming.

38 The Ministry for the Environment cautions against assuming land-use patterns are a major driver in changes in *E. coli* concentrations over time. We include the land-cover breakdown as a basic indicator of how local rivers are faring depending on the type of land cover in the locality.

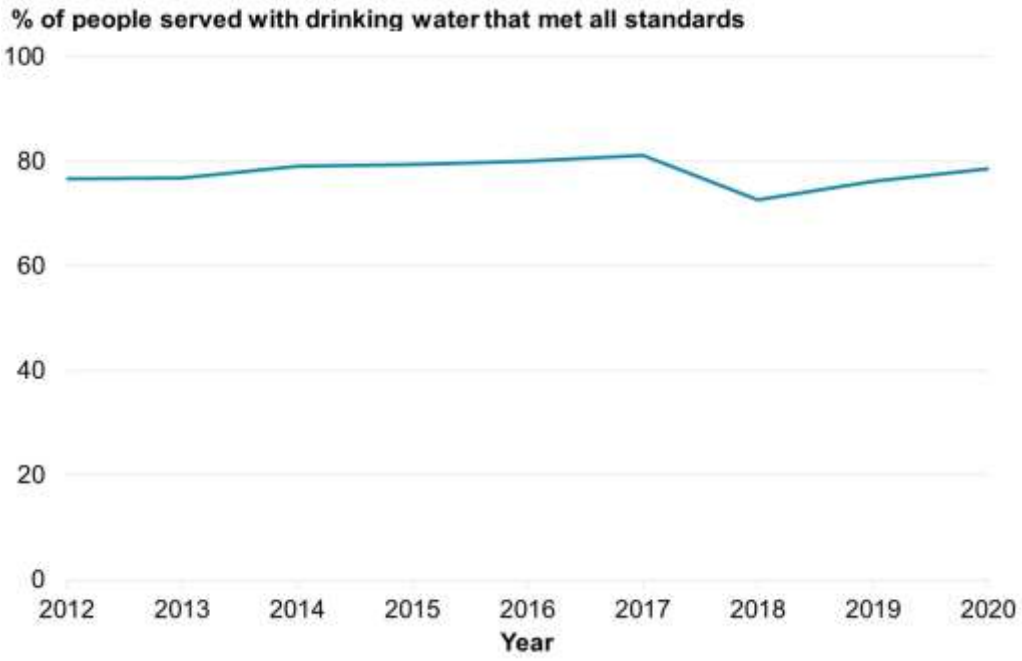
Figure 102: Coastal 'Can I swim here' results over time



Source: Land, Air, Water Aotearoa

Clean water is of course very important for drinking, cleaning and cooking as well. Although treatment can eliminate much of the risk from unclean source water (with the notable exception of nitrates), management of water treatment is not perfect across the country. Data published by the Ministry of Health audits the quality of water treatment against national standards and shows that there are still many gaps in our water management. About one in five people is served with water that has not been treated according to all standards. While this does not necessarily mean that the water is unclean, it does increase the chances that any contamination in the source water will make its way to households, causing ill health.

Figure 103: Drinking water management over time (LSF Dashboard indicator)



Source: Ministry of Health (Annual Report on Drinking Water Quality)

Rainfall patterns can also affect water quality. For example, droughts can increase the likelihood of low flows leading to algal blooms, reduce the available water for supply to residential, agricultural and other users and increase the likelihood of saltwater intrusion into aquifers. NIWA data published by Stats NZ shows that, in many parts of the country, long-term droughts have become more frequent in recent decades, even if they have become less common in a few places as well.

Table 6: Changes in long-term drought frequency by site, 1972-2019[39] (LSF Dashboard indicator)

Trend	Location
Very likely increasing	Auckland
	Blenheim
	New Plymouth
	Reefton
Likely increasing	Dunedin
	Nelson
	Queenstown
	Taupō
	Tauranga
	Waiouru
	Wellington
	Whangaparāoa
	Whangārei
Indeterminate	Christchurch
	Dannevirke
	Gisborne
	Hamilton
	Hokitika
	Kerikeri
	Lake Tekapo
	Masterton
	Napier
	Tara Hills
	Timaru
	Whanganui
Likely decreasing	Gore
	Invercargill
	Milford Sound
	Rotorua
Very likely decreasing	Taumarunui

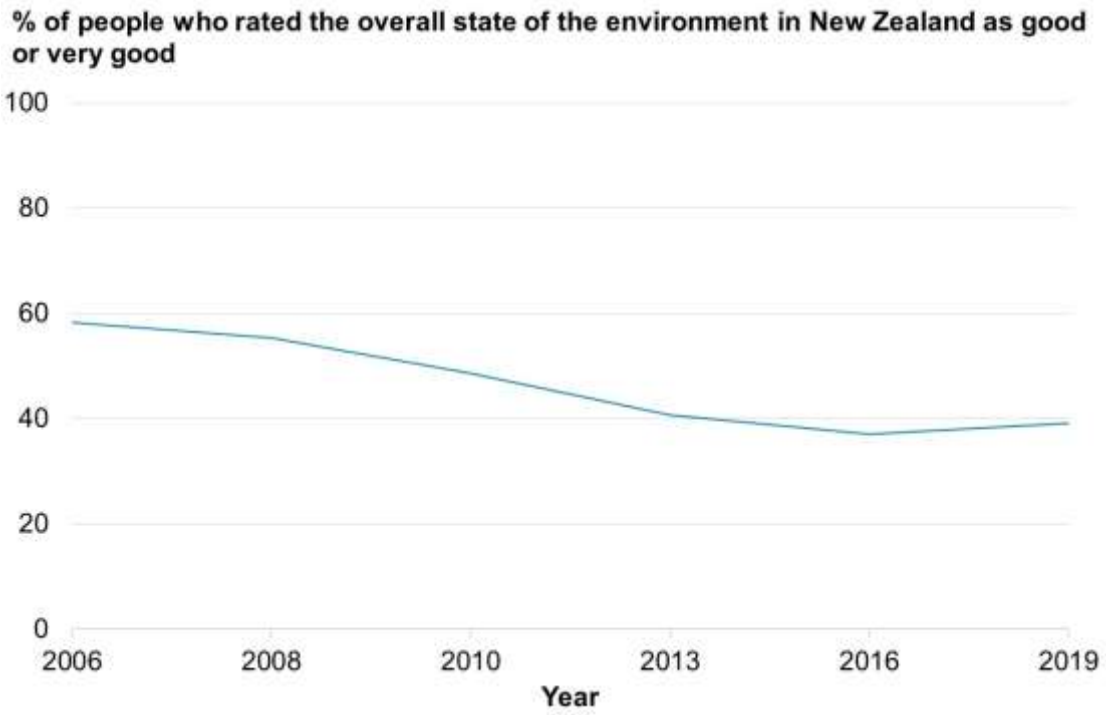
Source: Stats NZ (Environmental Indicators)

39 Long-term drought is also known as 'hydrological drought' and is calculated using the Standardised Precipitation-Evapotranspiration Index. Hydrological drought occurs during an extended period of drier than usual conditions and is characterised by low water supply in streams, reservoirs and ground water.

Environmental perceptions

Subjective data provides a similar picture to the objective data about our air and water. Data from a Lincoln University study into public perceptions suggests that, overall, New Zealanders seem to have become more pessimistic about our environment over time, with only a minority of people rating its overall state as good or very good.[40]

Figure 104: Perceived environmental quality over time (LSF Dashboard indicator)

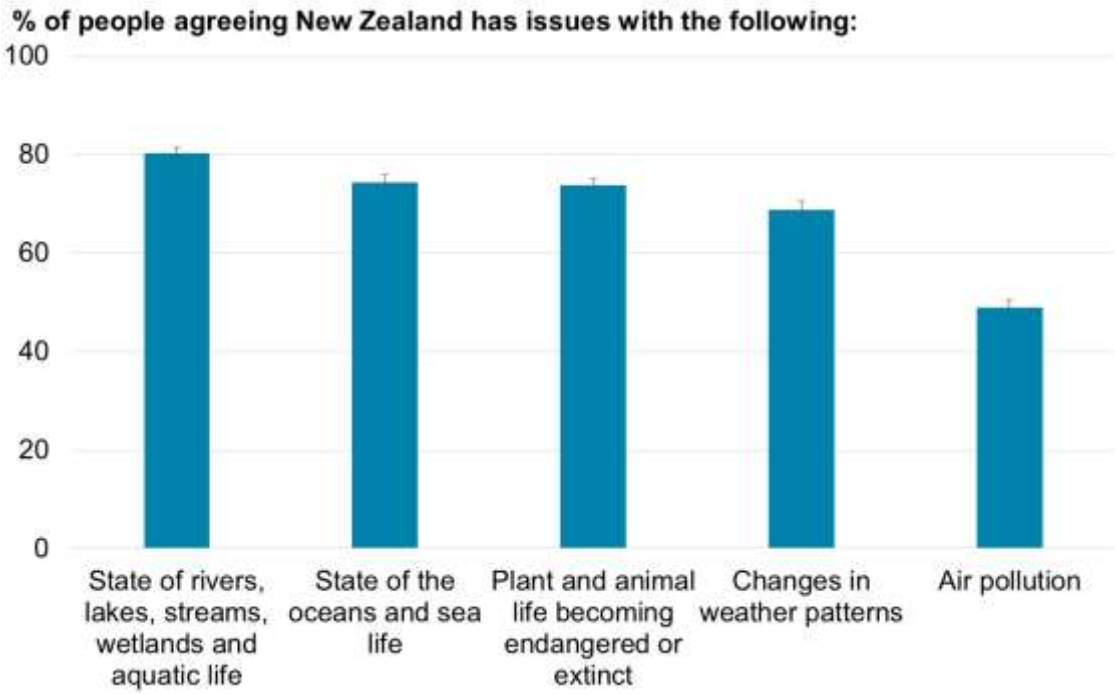


Source: Hughey, Kerr and Cullen (2019)

Data from the General Social Survey suggests that people are most concerned about our fresh water and least concerned with our air quality. This data suggests that people are also quite concerned about our saltwater environments, biodiversity and climate change.

40 The public perceptions survey has been run in 10 waves between 2000 and 2019. Initially a postal survey with a sample size of about 800 and a response rate of 35-48%, since 2010, it has been an electronic survey with sample sizes of 2,000-2,500 and no response rate reported.

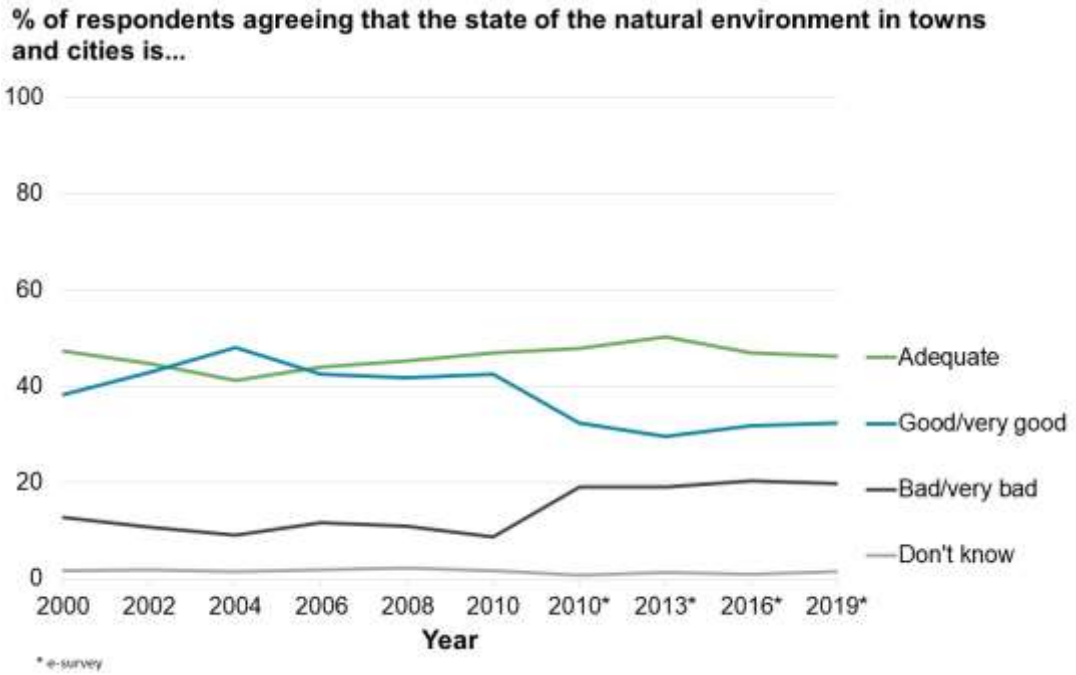
Figure 105: Perceived environmental issues, 2018



Source: Stats NZ (General Social Survey)

Given that most people live in urban areas and experience the natural environment within that context, it is also useful to consider perceptions of the natural environment in towns and cities. Data from the Lincoln study into public perceptions suggests that the most common response from people is that the condition is adequate, followed by good, with only a minority considering the condition to be bad or very bad.
The data suggests a possible deterioration over time, but this could just be an artefact of a methodological change in 2010 from a postal to an online survey.

Figure 106: Perceived condition of natural environment in towns and cities over time



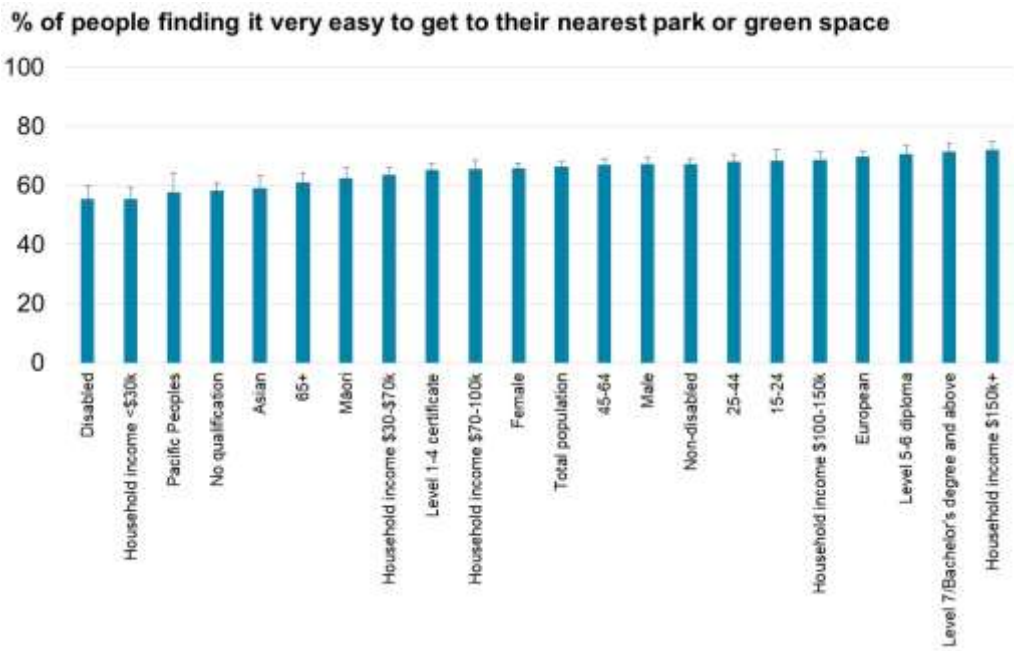
Source: Hughey, Kerr and Cullen (2019)

Transport and the built environment

Accumulated human modification of the environment over time means that the natural environment is invariably experienced in the context of an extensive built environment, in urban spaces most of all but also in rural spaces. The built environment needs to balance different types of land use and the need to transport people and goods between different areas. One way of assessing the built environment is by considering both whether sufficient green space is set aside and whether it is located in accessible sites given transport networks.

Most people in Aotearoa New Zealand find it very easy to get to their nearest park or green space, but there is a noticeable gradient between different subpopulations, with lower proportions of disabled people finding it very easy, closely followed by people in households with low incomes and Pacific Peoples.

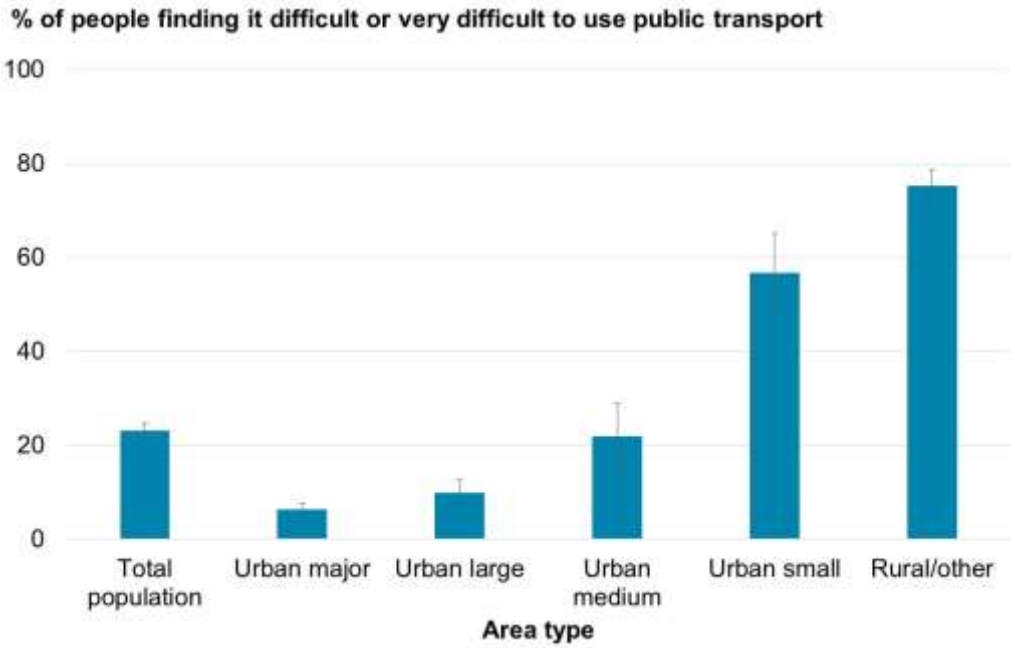
Figure 107: Ease of accessing parks and green space by demographic features, 2018 (LSF Dashboard indicator)



Source: Stats NZ (General Social Survey)

Considering transport more generally for all kinds of purposes, about a quarter of people find it difficult or very difficult to use public transport. Difficulty with public transport is most prevalent in smaller urban areas and rural areas.

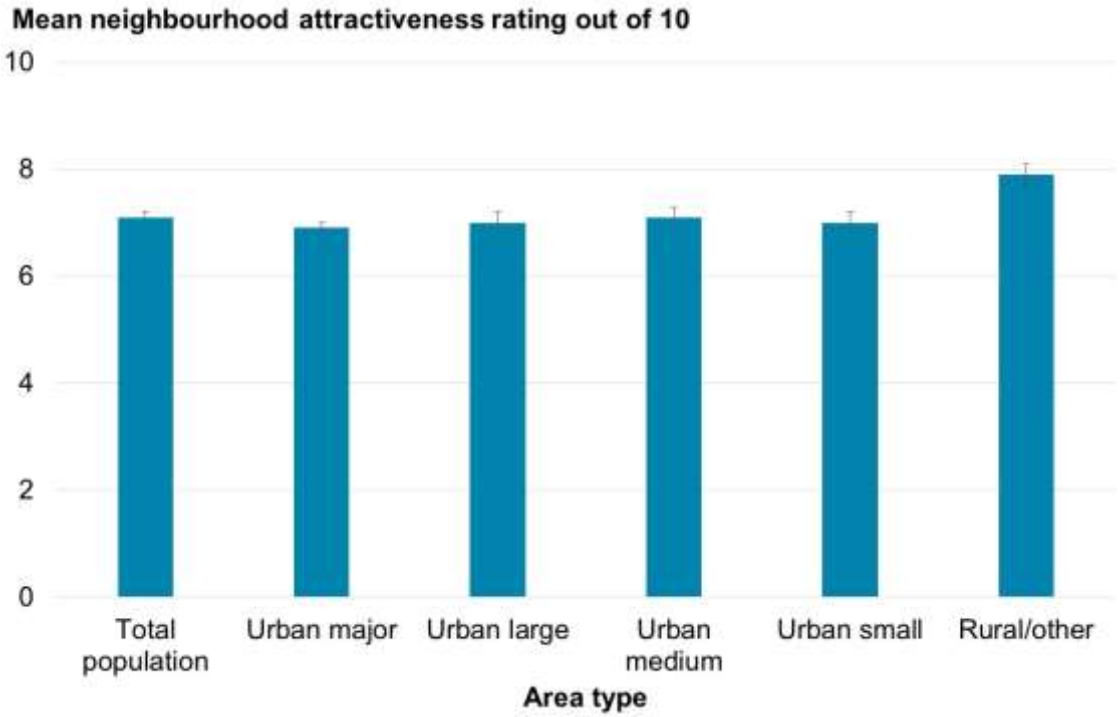
Figure 108: Difficulty using public transport by settlement type, 2018



Source: Stats NZ (General Social Survey)

However, rural dwellers benefit from greater visual amenity, rating their environment as more attractive than residents of urban areas.

Figure 109: Mean attractiveness of neighbourhood by settlement type, 2018



Source: Stats NZ (General Social Survey)

Further reading and links:

Environmental Indicators

Our Air 2021

Our Freshwater 2020

Environment Aotearoa 2019

Public Perceptions of New Zealand's Environment: 2019

Leisure and play

Overview

Using free time to rest, recharge and engage in personal or shared pursuits.

As Marilyn Waring has often pointed out (Waring, 2018), time is the most fundamental of resources. Our days are finite, and on each, we have but 24 hours to use for work, play and rest. In the work, care and volunteering domain, we explored the ways people use their time for the benefit of others. In this domain, we consider how much time people have left over after their paid and unpaid work and how they choose to use this time.

New Zealanders have typical levels of free time on average in comparison to other OECD countries, with free time being more fairly spread between men and women after accounting for both paid and unpaid work.

However, a substantial minority of people, mostly men, work more than 40 hours a week – sometimes much more than 40 hours. Long hours are not necessarily a problem as some people are quite happy devoting their lives to their work, but beyond 40 hours a week, the more that people work, the less likely it is they are satisfied with their work-life balance. A lack of free time is most prevalent in mid-life, particularly for parents of small children. Mid-life is also the time when physical activity is at its lowest, despite large majorities of people in mid-life saying they would prefer to be more active if it were not for other commitments.

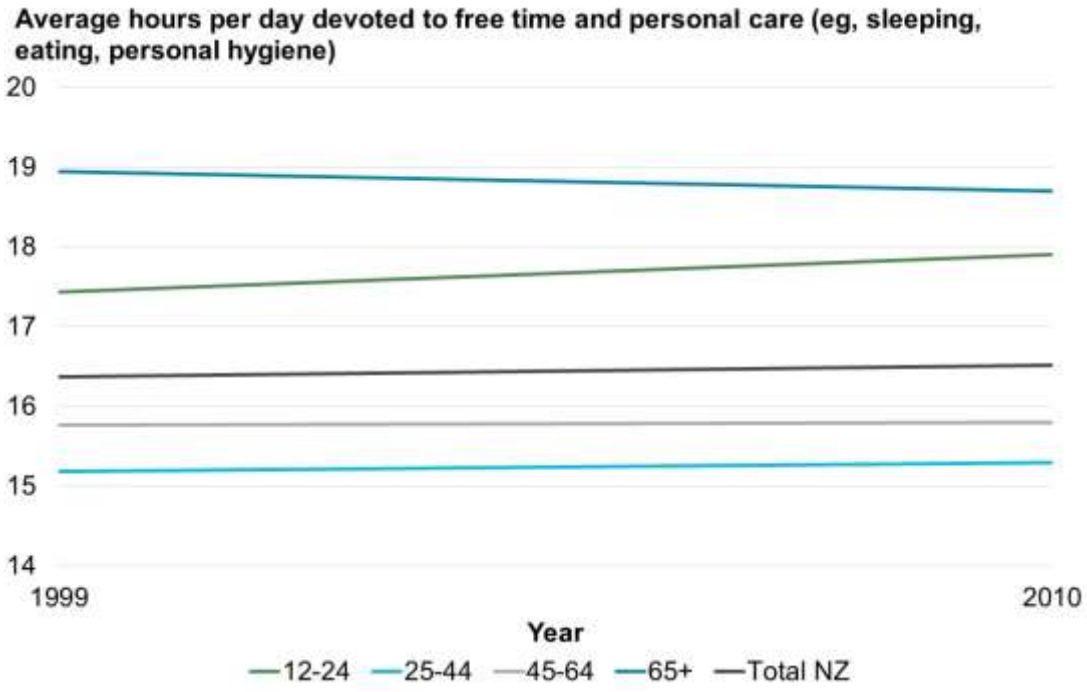
This section is in two parts. We first consider the amount of free time people have, and then we look at how people use their free time.

Free time

Time use has been comprehensively investigated on two occasions in Aotearoa New Zealand with the Time Use Surveys of 1999 and 2010. Although this information is somewhat dated, it is the best comprehensive data source we have for now.

Each survey covered everyone aged 12 or older. On average, all age groups spend at least 15 of every 24 hours on leisure and personal care, but the young and old stand out for having more free time.

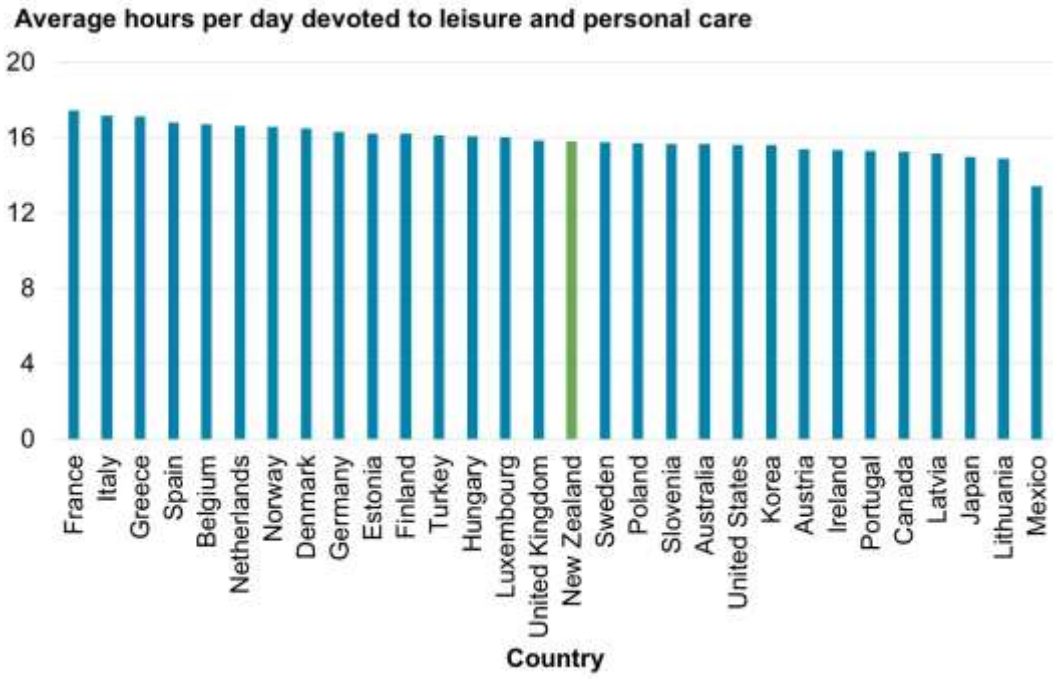
Figure 110: Non-working time by age over time (LSF Dashboard indicator)



Source: Stats NZ (Time Use Survey)

One of the reasons why people may lack free time is if paid work commitments are excessive. The OECD compiles data on the leisure time of those in full-time work. While this data is not without its problems, on this measure our 2010 data placed us in the middle of the OECD.

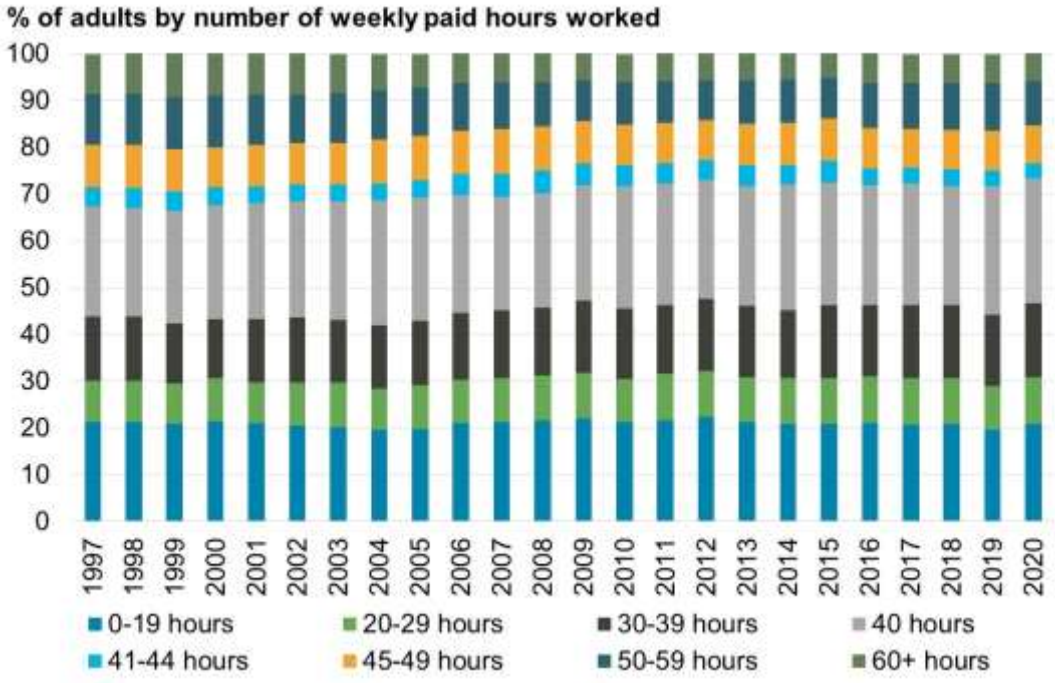
Figure 111: Non-work time across the OECD, 2016 or latest year (LSF Dashboard indicator)



Source: OECD

There is significant variation around the average hours of paid work, with some people working relatively few hours and some working very long hours.

Figure 112: Hours worked distribution over time

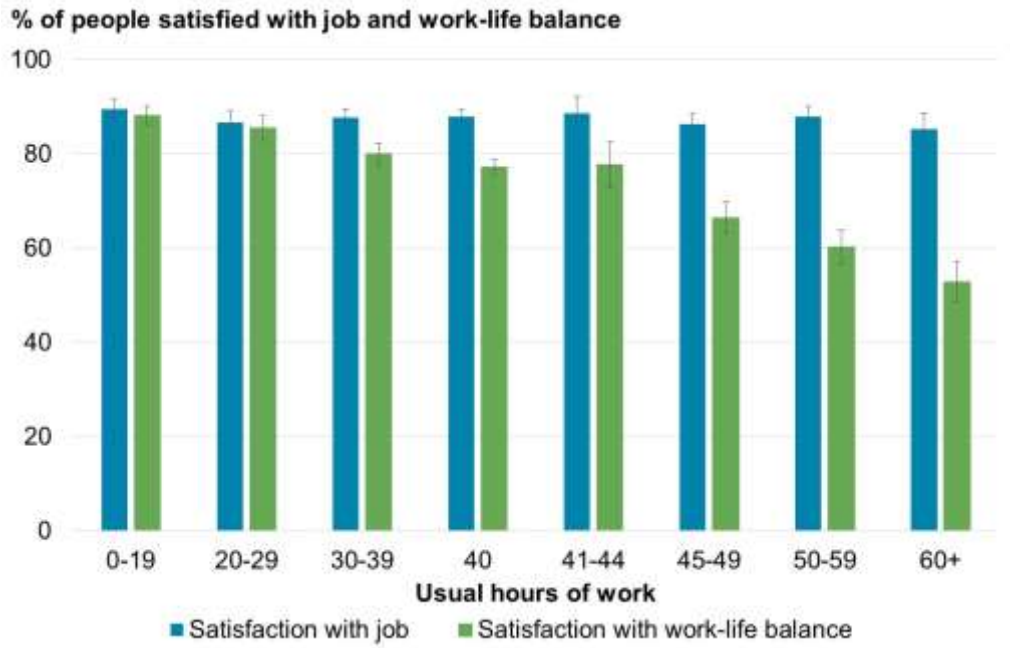


Source: Stats NZ

Short hours can be a problem if they represent too much leisure and long hours can be a problem if they represent too little leisure, but there is no one right answer to the optimal hours of work – it depends on each of our preferences and personal circumstances.

Insight into whether hours of work are causing a problem from the perspective of the individual worker can be gained from Stats NZ's Survey of Working Life, which asks respondents if they are satisfied with their work-life balance. The latest results, from 2018 show that satisfaction with work-life balance is generally high, including among those who work short hours. However, satisfaction declines noticeably above 45 hours of work per week. This suggests that long hours are more of a problem than short hours.

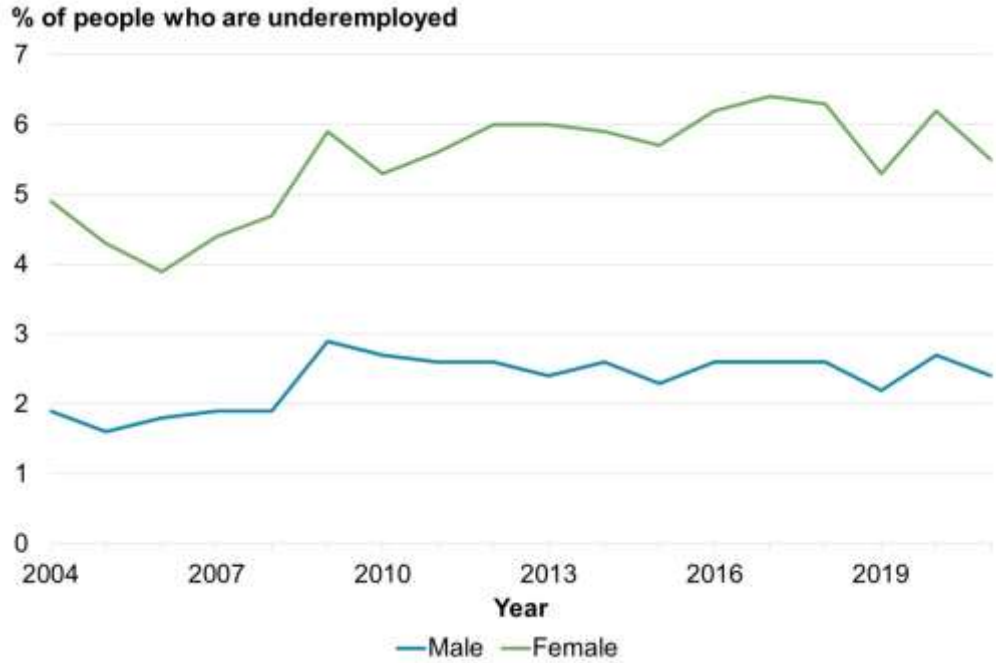
Figure 113: Satisfaction with job and work-life balance by usual hours worked, 2018 (LSF Dashboard indicator)



Source: Stats NZ (Survey of Working Life)

This impression is reinforced by the underemployment data, which shows the proportion of all employees who are available and willing to work more hours. Relatively few employees are underemployed, suggesting most people working short hours are happy to be doing so. However, underemployment rates appear slightly higher than they were 15 years ago. The result is also gendered, with underemployment being more prevalent among women than men.

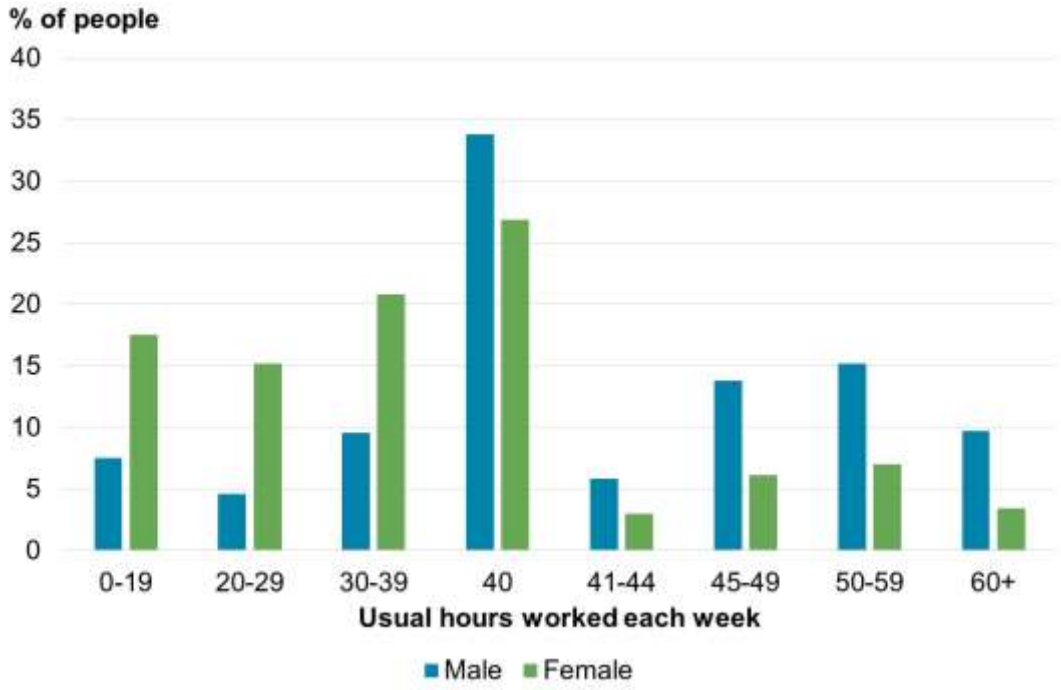
Figure 114: Underemployment rate by gender over time



Source: Stats NZ (Household Labour Force Survey)

This gendered result likely reflects that short hours are more common among women, with long hours being more common among men. Nearly half of employed men (45%) work more than 40 hours per week compared to 20% of women.

Figure 115: Usual hours worked per week by gender, 2018

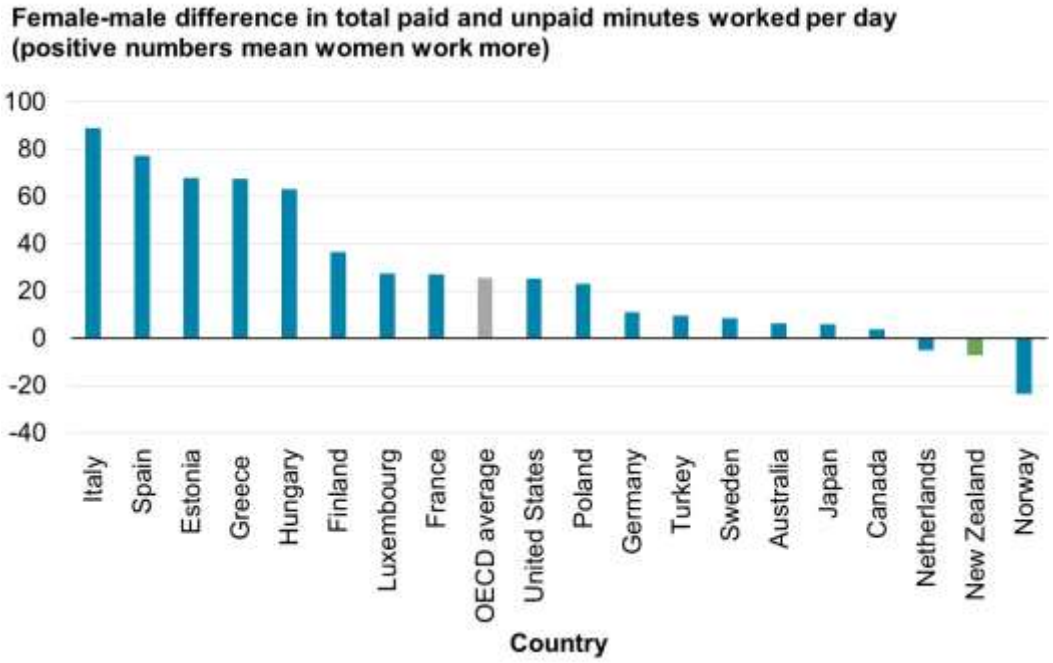


Source: Stats NZ (Survey of Working Life)

However, paid work provides a distorted picture by itself because unpaid work shows the opposite pattern. As was shown in Figure 51, women do more unpaid work than men on average, although there was a slight decline between 1999 and 2010 for both genders.

When adding paid and unpaid work together, the gender gaps disappear – the 2010 data showed that men and women work the same amount on average. This is unusual among OECD countries. In other countries, women tend to work more than men when considering both paid and unpaid work together.

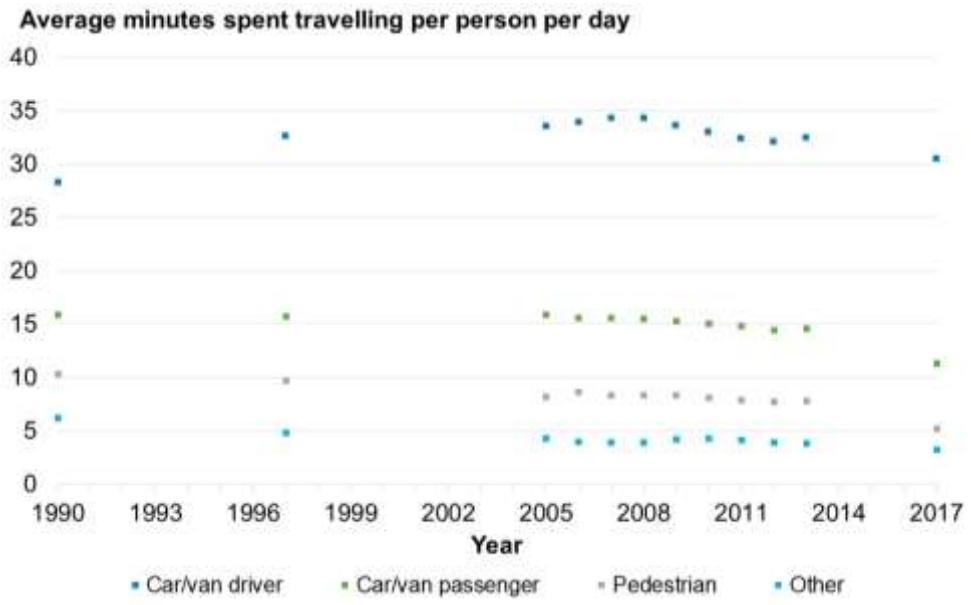
Figure 116: Total work hours by gender across the OECD



Source: OECD

Other than paid and unpaid work, the third main use of time that can interfere with our leisure is travel, particularly commuting. Data from the Household Travel Survey and its forerunners suggests that the amount of time spent travelling has been broadly steady at about an hour per day on average over the past few decades. About three-quarters of this time is spent driving in a car or as a passenger, with comparatively little transport being undertaken using more active modes such as walking or cycling that can double as recreation.

Figure 117: Time spent travelling per person (aged 5+) per day by mode over time



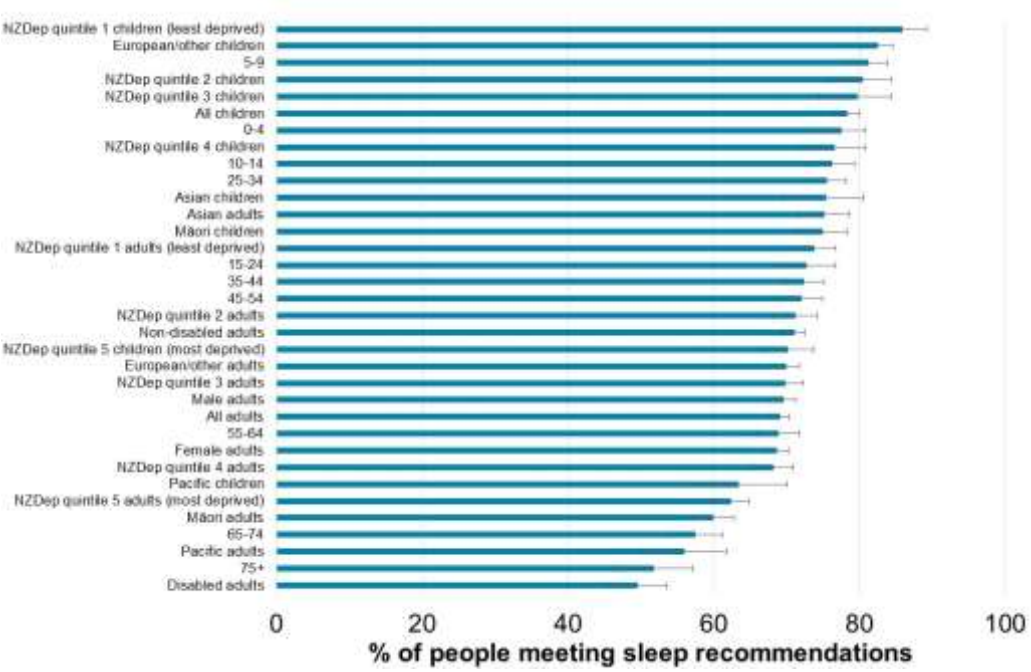
Source: Ministry of Transport (Household Travel Survey)

Use of free time

Free time can be used in many ways. It is up to each individual to choose how to use their time, but it is still informative to see how free time is being used, particularly when that might affect other aspects of wellbeing.

One of the most basic and important uses of free time is for sleep. The New Zealand Health Survey collects data on whether people are meeting the sleep recommendations of the National Sleep Foundation.[41] This data also allows us to explore the sleeping patterns of children, whereas the data on paid and unpaid work is restricted to adults.

Figure 118: Proportion of people meeting sleep recommendations by demographic, 2020/21



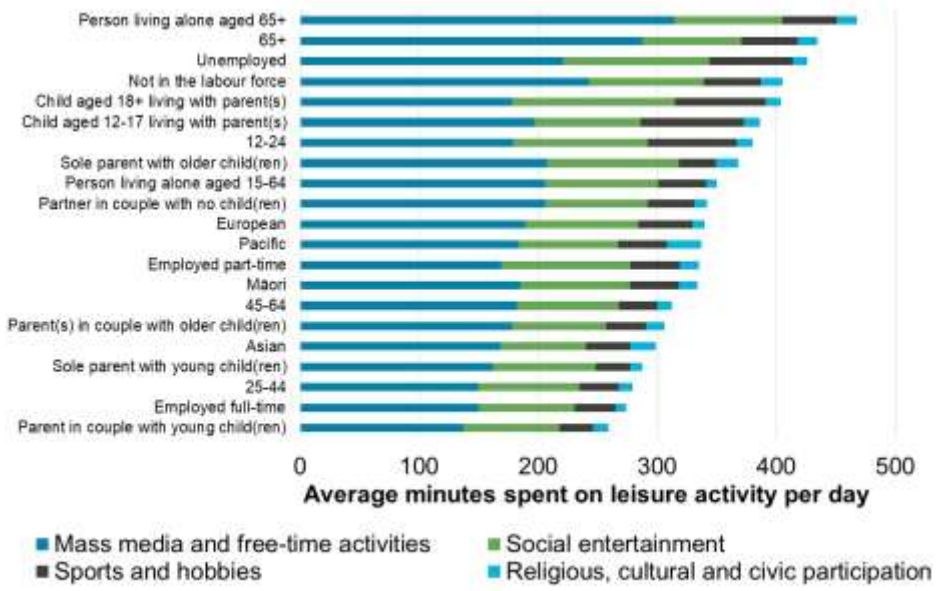
Source: Ministry of Health (New Zealand Health Survey)

Overall, 69% of adults and 78% of children (aged under 15) were meeting the sleep recommendations in 2020/21. Most subgroups had rates similar to this, but a lack of sleep is more common among disabled people and the elderly, two groups that overlap significantly since disability is much more common among older people. There is also a noticeable socioeconomic gradient, with a lack of sleep more common in more-deprived geographical areas as measured by the New Zealand deprivation index. Ethnicity-based differences are also apparent, with a lack of sleep more common among Māori and Pacific Peoples, particularly adults in those groups.

41 Newborn (0-3 months): 14-17 hours per day. Infant (4-11 months): 12-15 hours. Toddler (1-2 years): 11-14 hours. Preschool (3-4 years): 10-13 hours. School-age (5-13): 9 to 11 hours. Teens (14-17 years): 8-10 hours. 18-64 years: 7-9 hours. 65+: 7-8 hours.

After allowing for sleep, the most common use of leisure time in 2010 was watching television and consuming other forms of mass media such as radio and books. Unfortunately, there is no more-recent New Zealand data to assess whether these patterns have changed since then. After mass media, time spent socialising was the next most common type of leisure activity, following by sports and hobbies and religious, cultural and civic participation. There are large demographic differences in the total amount of leisure time, with parents and those employed full-time having the least leisure time and retirees having the most.

Figure 119: Leisure hours by type and demographic, 2010



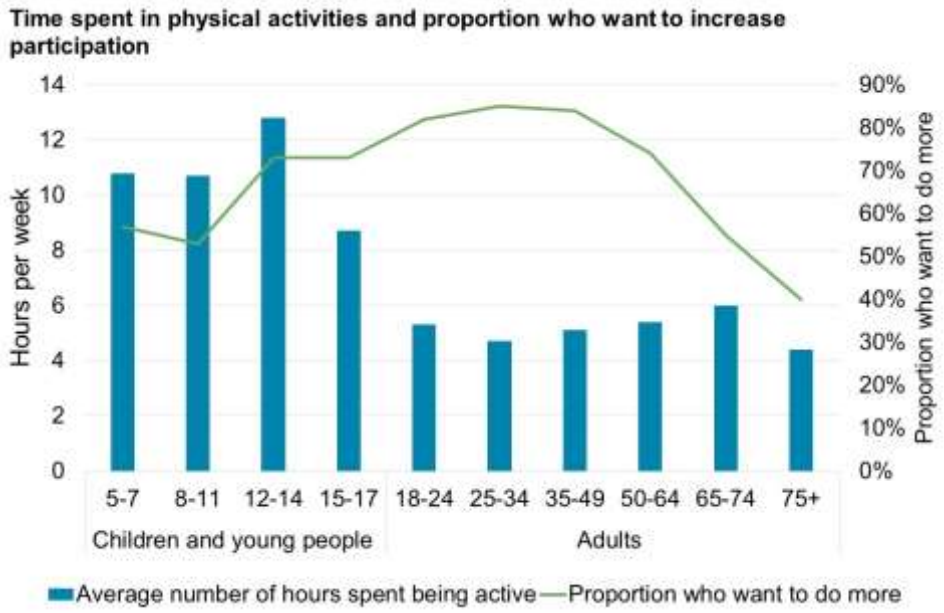
Source: Stats NZ (Time Use Survey)

More-recent data is available on one particular type of leisure – participation in play, active recreation and sport. This data comes from the Active NZ survey run by Sport New Zealand.[42] This captures participation in all manner of physical activities, including those such as tramping that are not generally considered to be sports.

42 The Active NZ survey is a continuous survey of people aged 5 and older using a random sample of the electoral roll. It has a very impressive sample size of 25,000 people per year. The total response rate in the most recent wave was 29.2% for adults and 30.7% for children and young people.

There is a strong age-related pattern in participation. The peak of participation occurs between the ages of 12-14, with an average of 12.8 hours per week being spent participating in play, active recreation and sport. This falls to a low of 4.7 hours per week at ages 25-34, before increasing again to 6 hours between the ages of 65 and 74.

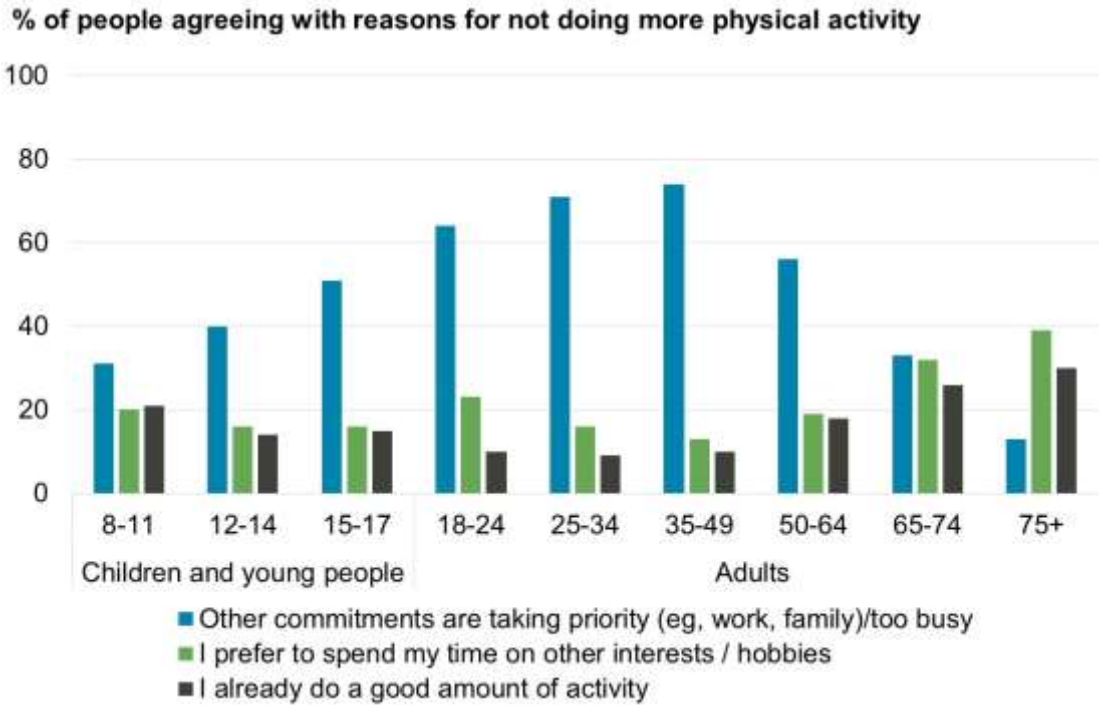
Figure 120: Active recreation hours by age, 2019 (LSF Dashboard indicator)



Source: Sport NZ (Active NZ Survey)

Not everyone wishes to use their free time being physically active, but a majority of people at all ages below 75 indicate they would like to be more active, perhaps because physical activity is protective of our future health. That they are not is explained primarily by other commitments such as work and family, particularly in mid-life.

Figure 121: Reasons for inactivity by age, 2019



Source: Sport NZ (Active NZ Survey)

Further reading and links:

Active NZ report

Family and friends

Overview

Loving and supporting close friends, family and community members and being loved and supported in turn.

This wellbeing domain captures the central importance our most intimate relationships have to our wellbeing and the reciprocal patterns of mutual support embedded in those relationships. There is overlap with several of the other domains, including most importantly the work, care and volunteering domain (especially in the context of childcare).

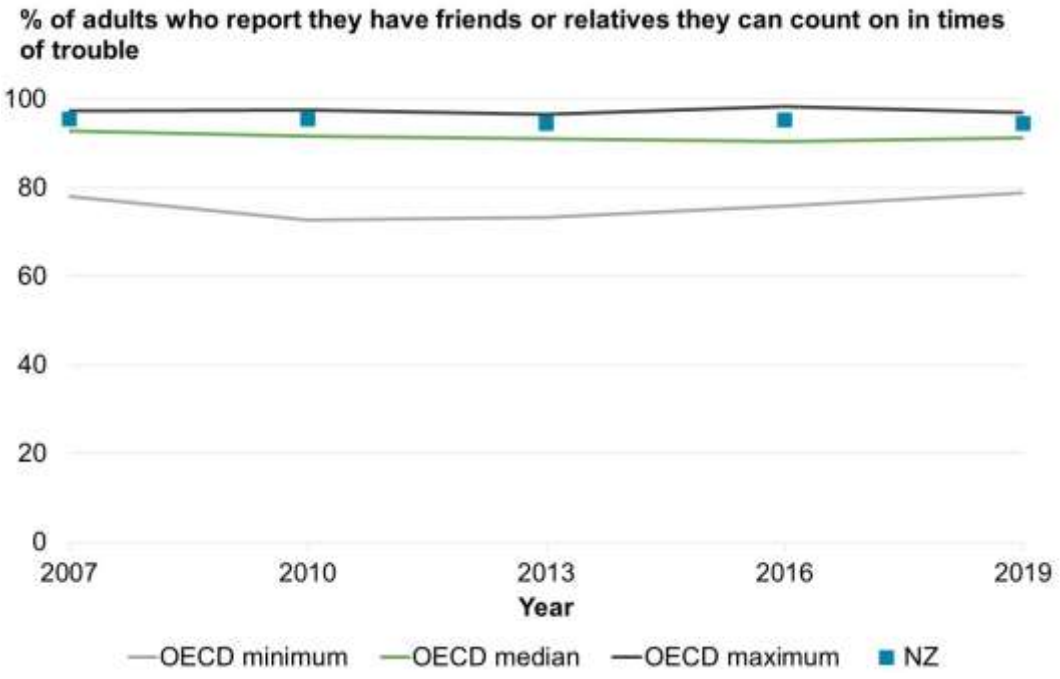
When developing the Indicators Aotearoa New Zealand wellbeing indicators, Stats NZ (2019) surveyed New Zealanders on what matters most for wellbeing. In this survey, relationships with friends and whānau came second only to health in importance. It is well then that, generally speaking, the evidence points to strong relationships with friends and family in this country. Compared to other OECD countries, older people are particularly well supported. However, there are ethnic differences in social connection, with Asian New Zealanders being the most likely to be isolated. There are also signs that loneliness is increasing, particularly among the young.

This section is in two parts. We first consider social support and loneliness and then social contact.

Social support and loneliness

Compared to other OECD countries, we are in the top quartile for the rate at which people report they have friends or relatives they can count on in times of trouble, according to data from the Gallup World Poll.

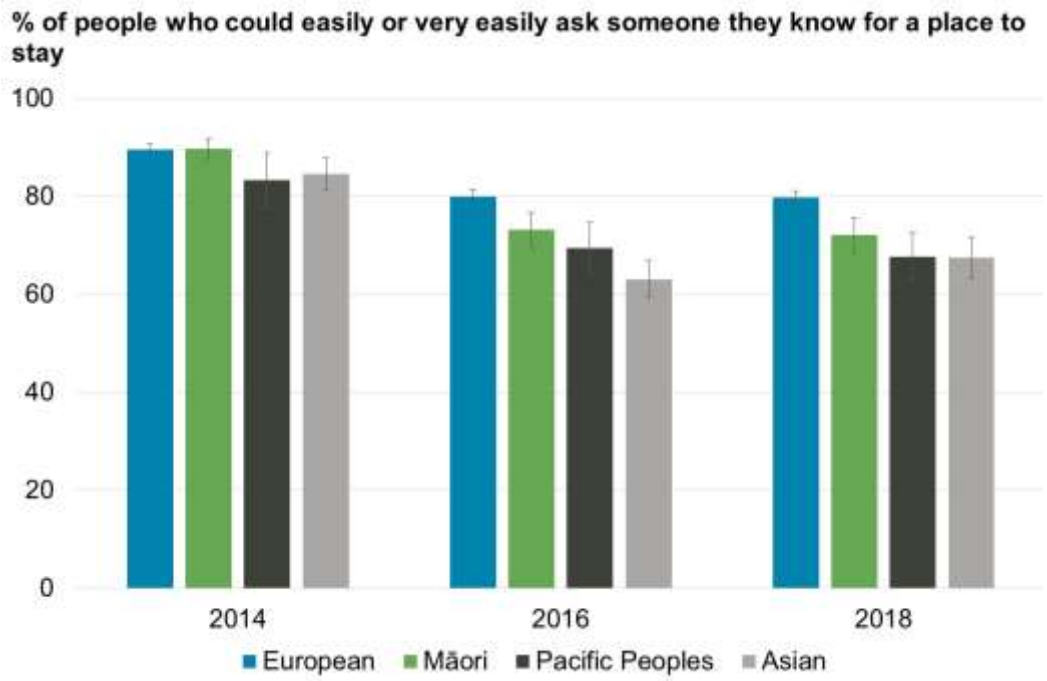
Figure 122: Social support across the OECD over time (LSF Dashboard indicator)



Source: OECD

However, there are indications this rate is declining slightly over time. There is also a noticeable ethnic gradient to social support. Data from the General Social Survey, from a similar question to that posed by Gallup, shows that Pākehā have the greatest self-reported levels of support and Asian and Pacific Peoples have the least.

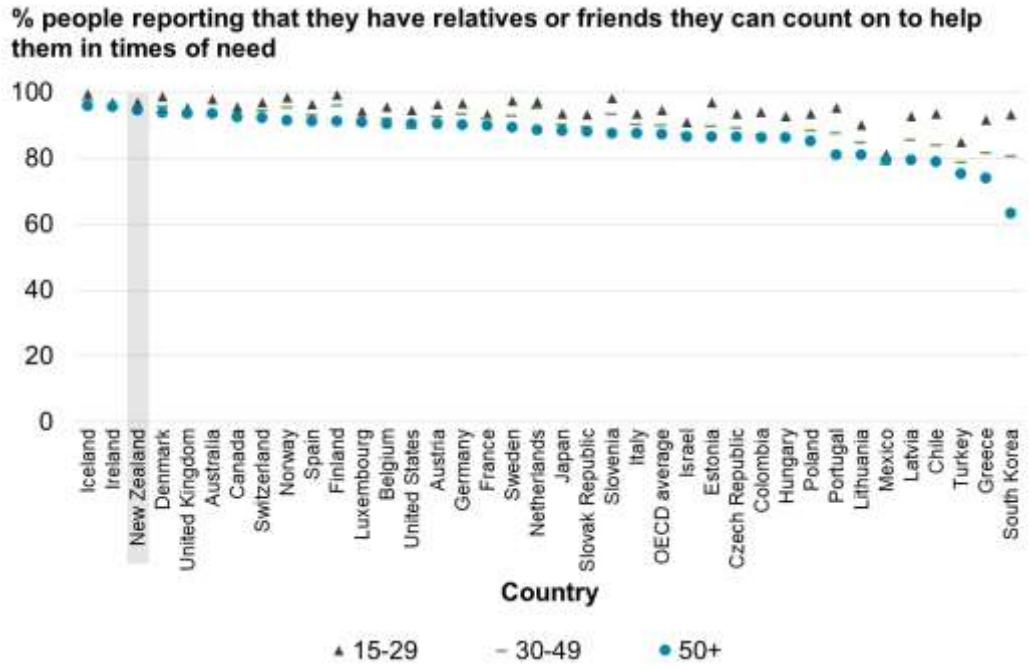
Figure 123: Social support by ethnic group over time (LSF Dashboard indicator)



Source: Stats NZ (General Social Survey)

There is also a slight age gradient, with older people being slightly less likely to report they have others to count on. However, this gradient is much less steep than in most other OECD countries. An important reason why our social support figures are higher than in other countries on average is that the older people among us are so well supported. Those of us aged 50 or older have self-reported levels of support surpassed only by their peers in Ireland and Iceland.

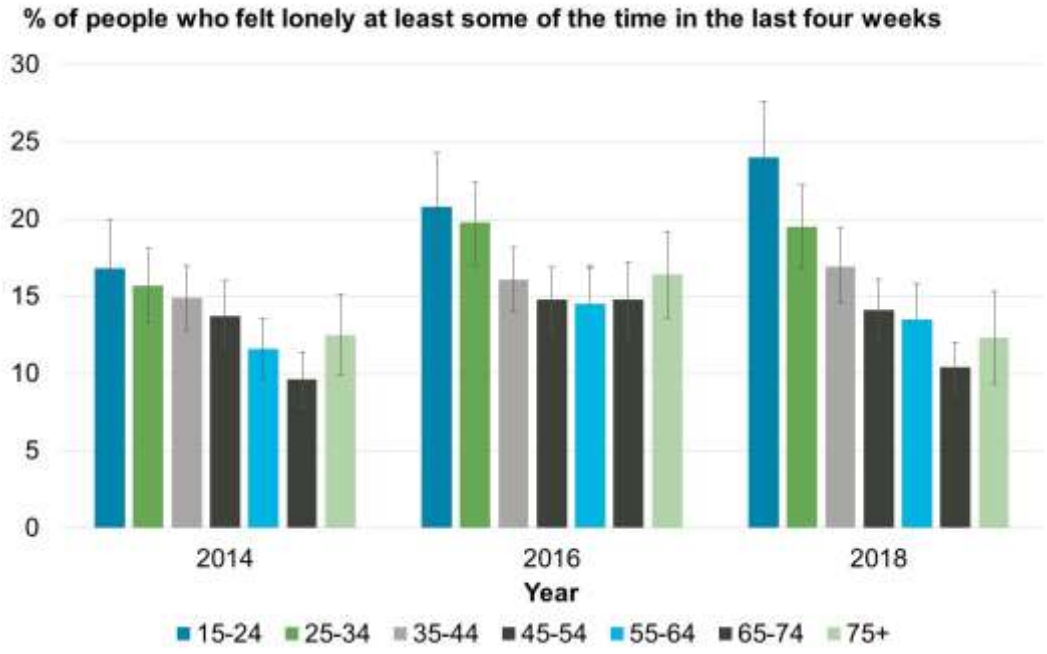
Figure 124: Social support across the OECD by age, 2010-2018 pooled data, ordered by level of support for people aged 50+ (LSF Dashboard indicator)



Source: OECD

Older people are also less likely to report feeling lonely than younger people, up to the age of 75 at least. Loneliness is more prevalent among the young. There appears to have been an increase in self-reported loneliness among people aged under 35, especially among those under 25, since 2014, but the wide margin of error makes it hard to know if this is real or a statistical artefact.

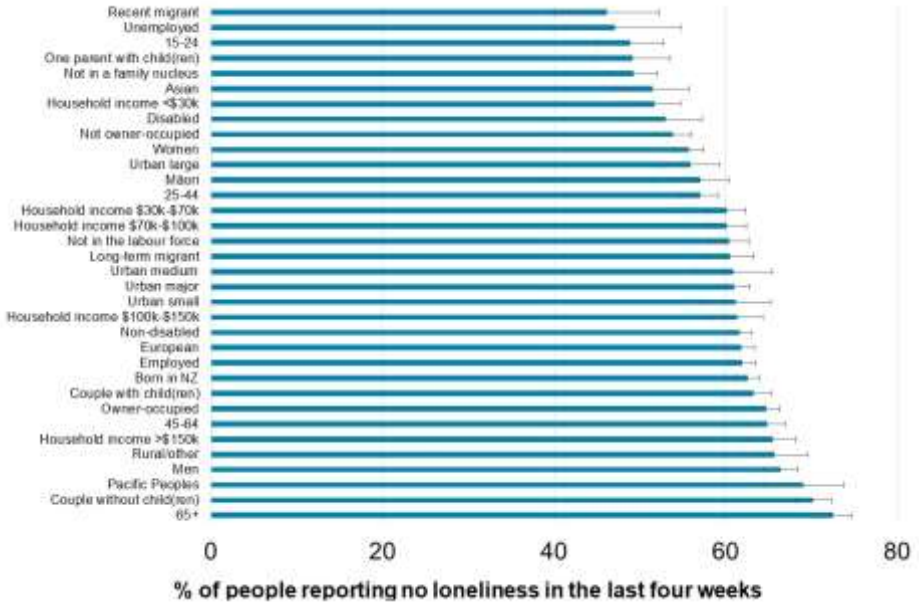
Figure 125: Loneliness by age over time (LSF Dashboard indicator)



Source: Stats NZ (General Social Survey)

Loneliness is also associated with several other demographic features, with those of us reporting the highest levels of loneliness being those who are unemployed, recent migrants, those living alone, disabled people and those aged 15-24. The ethnic gradient is not so strong, but to the extent there are differences, Asian New Zealanders report the highest levels of loneliness and Pacific Peoples the least, although the confidence intervals overlap between these groups.

Figure 126: Loneliness by demographic characteristics, 2018 (LSF Dashboard indicator)

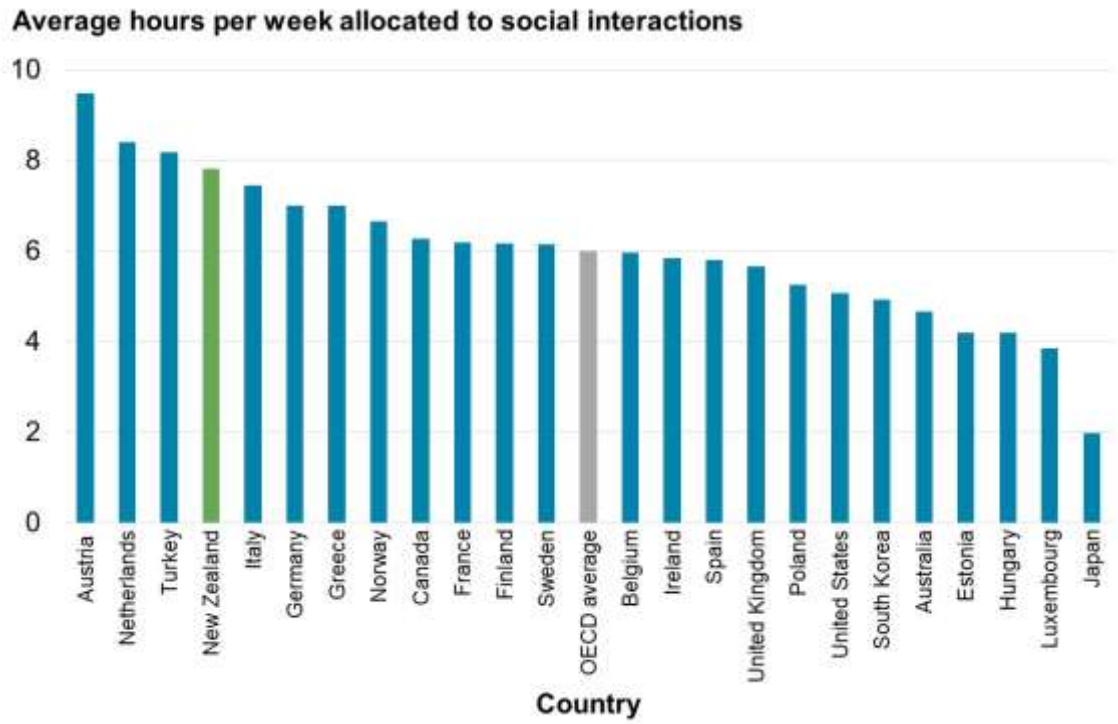


Source: Stats NZ (General Social Survey)

Social contact

On average, New Zealanders are quite sociable. We spend nearly eight hours a week socialising on average, which is more than people in most other OECD countries.

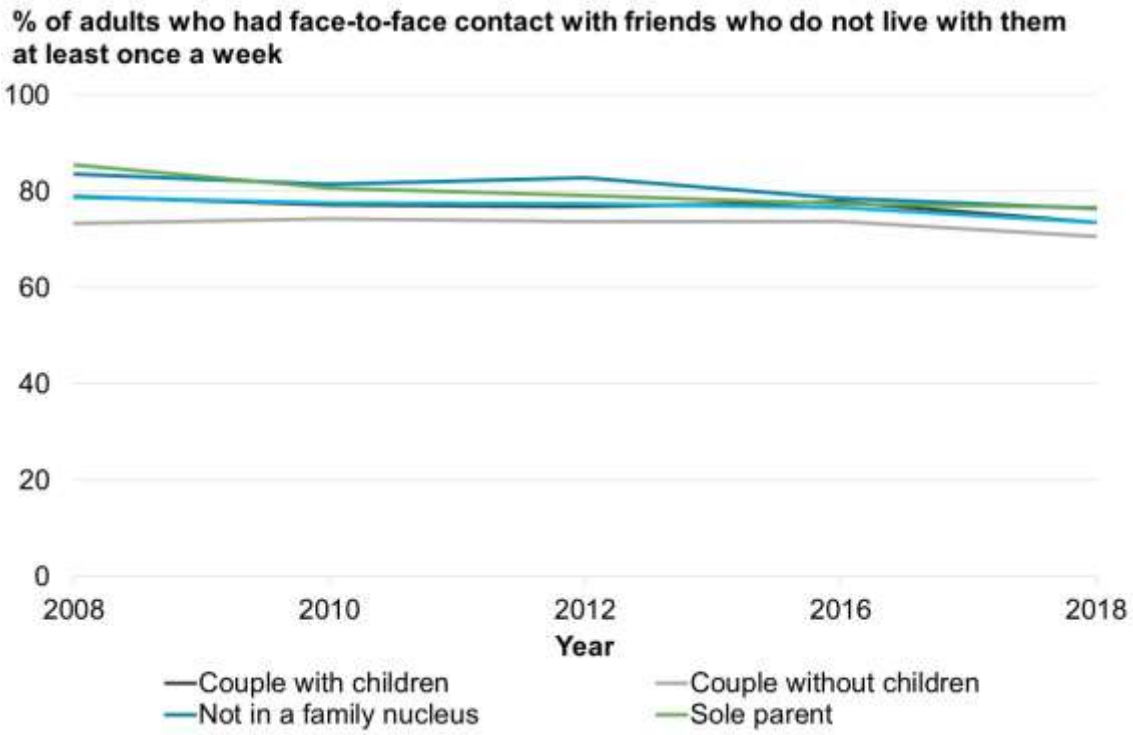
Figure 127: Time spent socialising across the OECD, 2018 or latest available year



Source: OECD

Unsurprisingly, social contact is associated with family type. Couples without children are the least likely to socialise with people from other households. Singletons and sole parents are somewhat less likely to socialise with others, and their rates of socialisation have been on a downwards trend since 2008.

Figure 128: Face-to-face contact by family type over time (LSF Dashboard indicator)



Source: Stats NZ (General Social Survey)

Further reading and links:

Families and Whānau Status Report 2018

WhatAboutMe results (forthcoming)

Safety

Overview

Being safe from harm and the fear of harm and keeping oneself and others safe from harm.

Safety is something of a cross-cutting domain that overlaps with most others. For example, unsafe roads and workplaces risk a loss of health and future earning capability. A lack of safety in the home can undermine the basis of support family usually provides, and a lack of safety at school can undermine educational achievement.

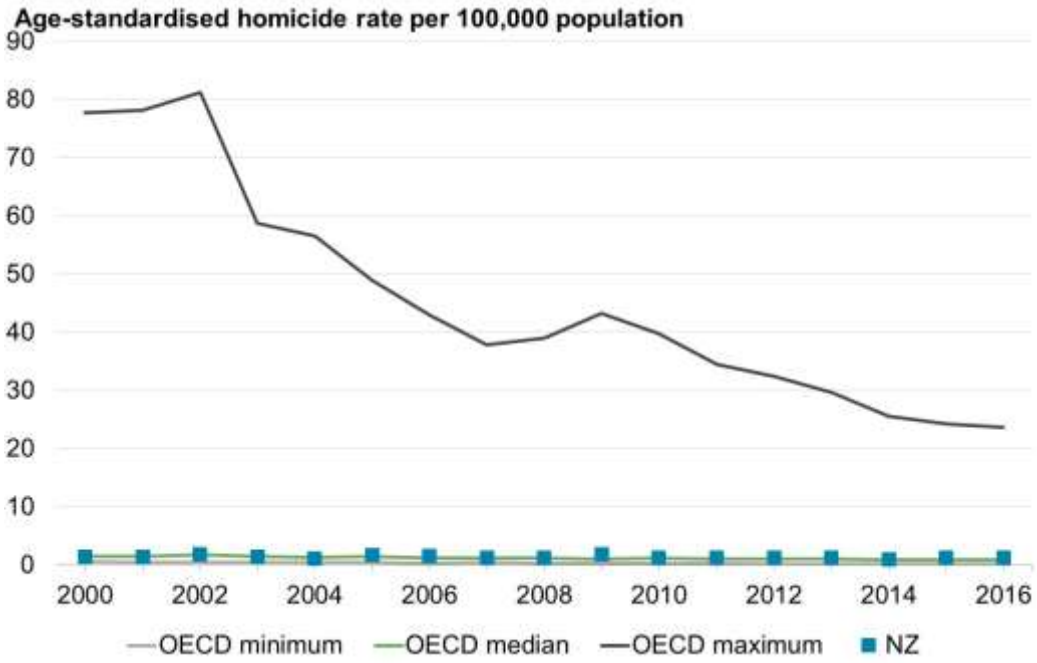
We have become safer over time across nearly all measures of safety but are not as safe as people in most other OECD countries. Safety is quite gendered. Men are less safe on the roads and at work, but women feel far less safe than men and are more vulnerable to crimes such as family violence.

This section is in three parts. We first consider safety from victimisation before considering safety at school and the home and finally safety on the roads and in the workplace.

Crime and victimisation

International comparisons are difficult to make for most types of crime because of differences in how offences are defined, differences in reporting rates and differences in Police recording practice. For this reason, scholars often focus on intentional homicide, where the definition is fairly unambiguous and nearly all offences are detected. The exact numbers go up and down each year, but Aotearoa New Zealand is generally at or slightly above the middle of the OECD on this number, suggesting we are somewhat less safe here than in our peer countries, even if our homicide rate is much lower than in the United States and very much lower than in many middle-income countries such as Colombia, who occupies the maximum position in figure 129 for every year except 2017, when Mexico overtook Columbia. Excluding Mexico, Columbia, Costa Rica, Latvia and Lithuania from the figures, the maximum homicide rate across the OECD in most years is closer to 5 or 6, in comparison to Aotearoa New Zealand’s 1-2 per 100,000 population.

Figure 129: Intentional homicide rates across the OECD over time (LSF Dashboard indicator)

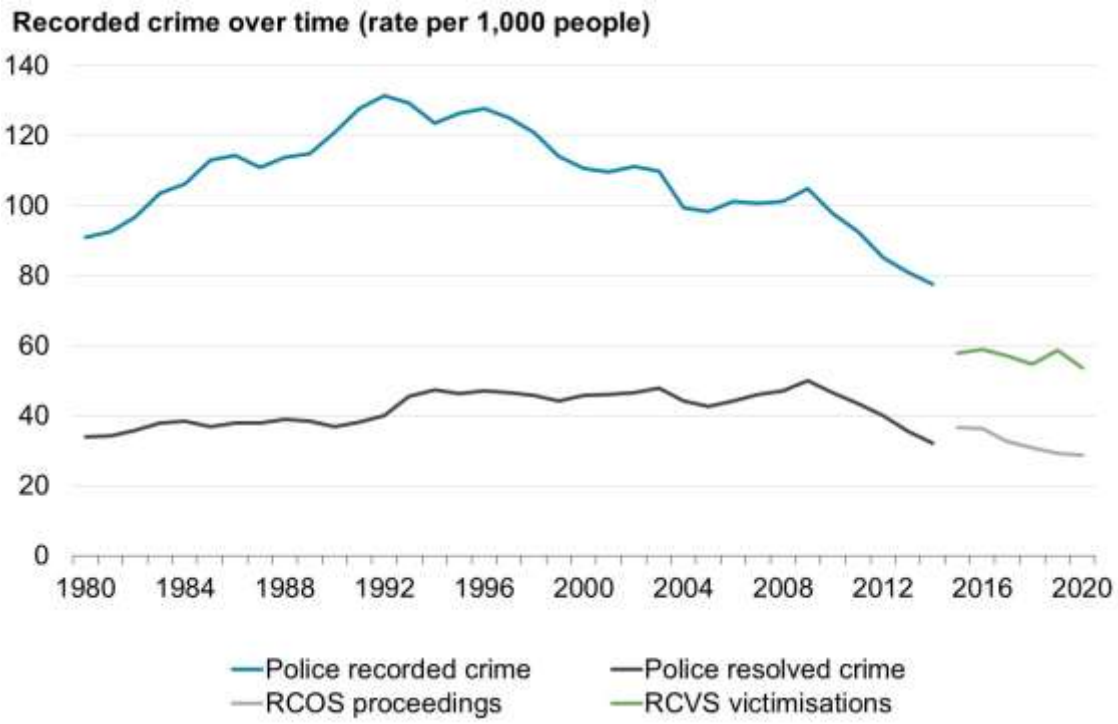


Source: OECD

More-detailed information is available on the wider array of crimes within Aotearoa New Zealand from several data sources, with each having strengths and weaknesses. The longest time series is available for offending that is recorded by Police. However, this data misses crime that is unreported or undiscovered by Police. There is also a series break in 2014 when Police changed its method for reporting on high-level crime trends.[43] With these caveats in mind, the data suggests a steady decline from 1992 to 2014 on the old series and then again from 2015 to 2020 on the new series. These numbers suggest we have become safer from crime over time in very general terms.

43 The new series counts proceedings against offenders from the Recorded Crime Offender Statistics database (RCOS) and victimisations from the Recorded Crime Victim Statistics database (RCVS). The proceedings against offenders series is conceptually similar to the old 'resolved crime' series. An offence with both a named victim and named offender will appear in both RCOS and RCVS. RCOS also includes crimes with no named victim such as drink-driving. RCVS also includes crimes where the offender is not known The new RCVS series is a subset of the old 'recorded crime' series because it excludes crimes with no named victim.

Figure 130: Recorded crime over time



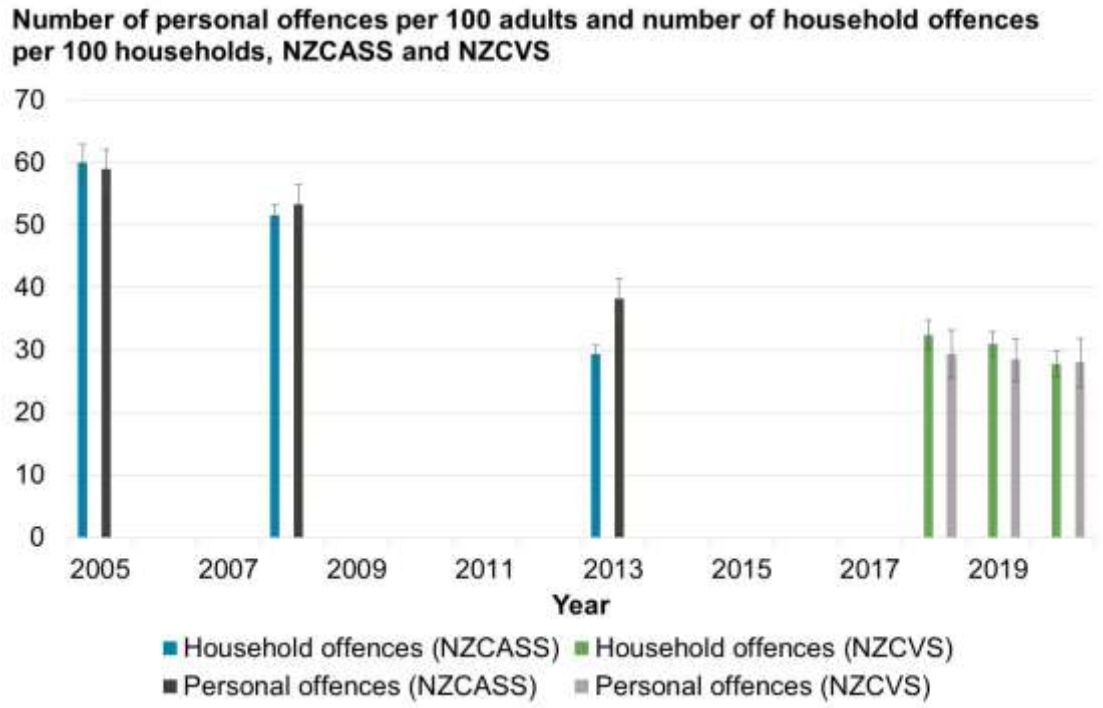
Source: Stats NZ and NZ Police

Another important data source is victimisation surveys where people self-report if they have experienced victimisation. These surveys do not face the problems of under-reporting that Police data does, but they do not have the same long-term time series, do not include child victims and do not include offences such as drug manufacture that do not have a named victim but rather cause more generalised harm.

There have been two victimisation surveys in Aotearoa New Zealand, each producing three data points. The earlier survey, the New Zealand Crime and Safety Survey (NZCASS), illustrated a big decrease in victimisation among both personal and especially household offences between 2005 and 2013. The more-recent survey, the New Zealand Crime and Victims Survey (NZCVS), has a slightly different methodology so is not completely comparable to the earlier survey even if it produces the same measures. NZCVS shows that victimisation has been flat or declining between 2018 and 2020.

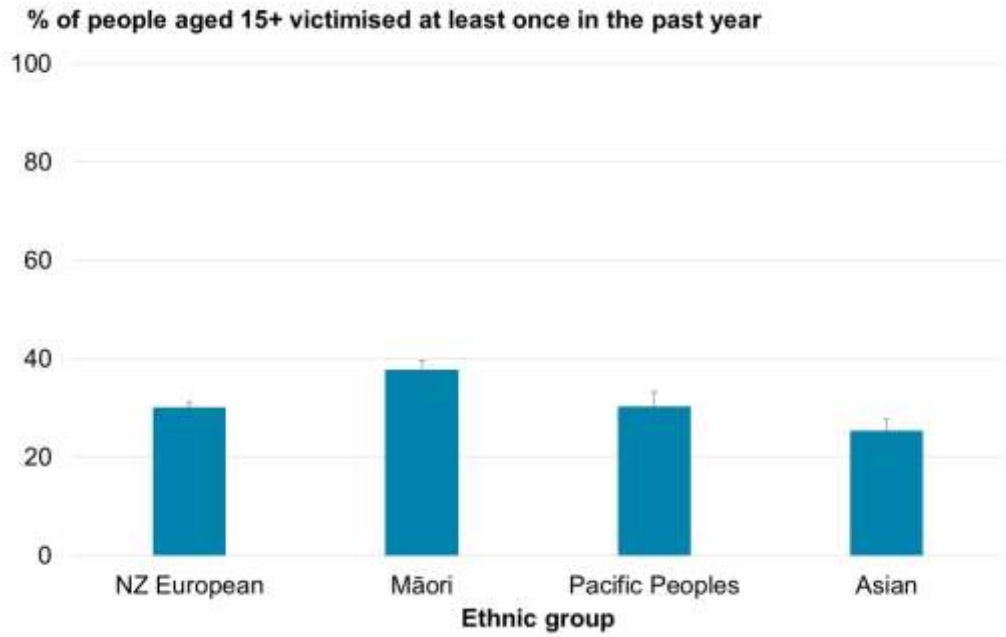
There are noticeable ethnic differences in victimisation rates, with Māori having the highest prevalence of victimisation and Asian people having the lowest.

Figure 131: Victimisation rates over time



Source: Ministry of Justice (NZCASS and NZCVS)

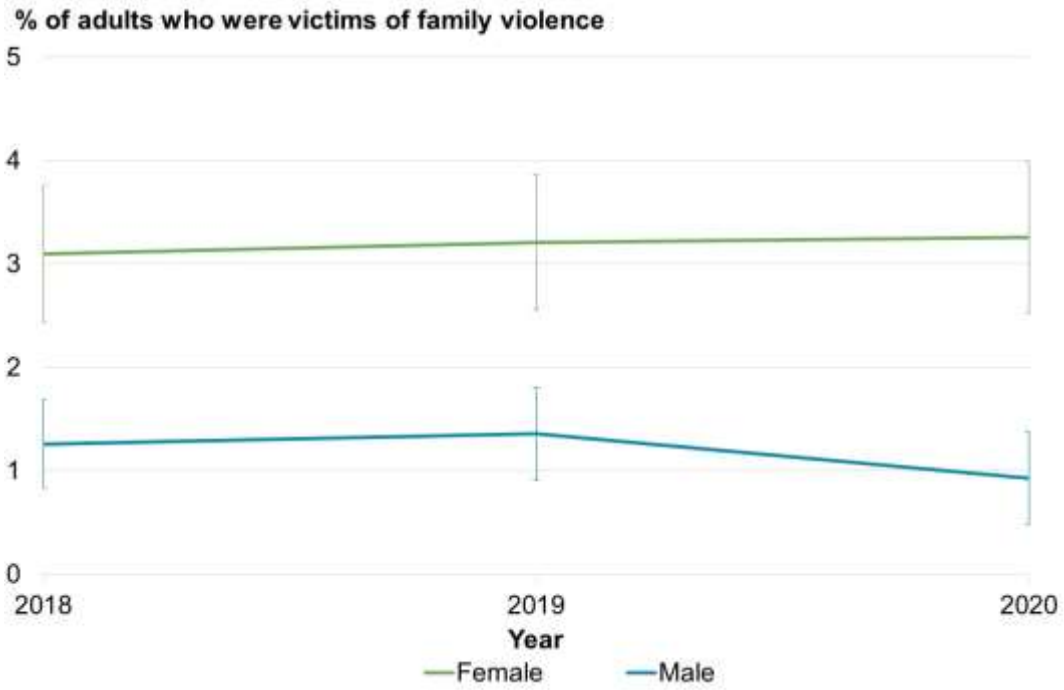
Figure 132: Victimisation rates by ethnicity, 2018-2020 pooled data



Source: Ministry of Justice (New Zealand Crime and Victims Survey)

Victimisation surveys are a particularly useful form of information for crimes with low reporting rates such as family violence. Over the three waves of NZCVS, family violence rates have been fairly steady. There is a large gender-based discrepancy, with female victimisation being about three times higher than male victimisation for this kind of offending.

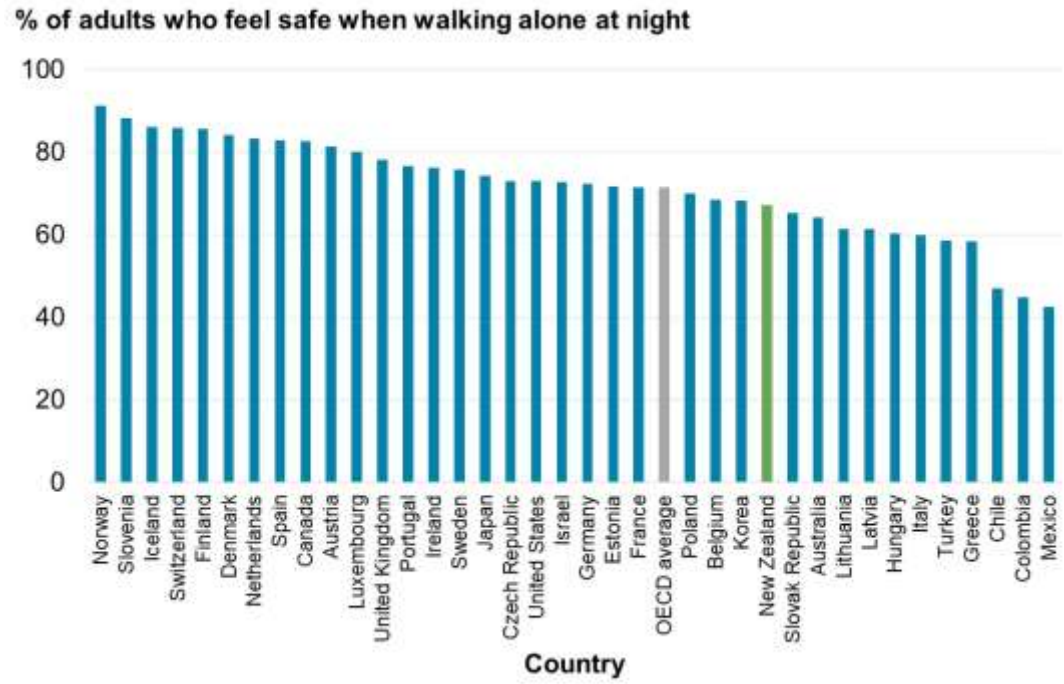
Figure 133: Family violence rates by gender over time (LSF Dashboard indicator)



Source: Ministry of Justice (New Zealand Crime and Victims Survey)

Safety and the feeling of safety are related but distinct concepts. Whether by coincidence or not, feelings of safety have improved slightly as well as safety itself. The proportion of people feeling safe when walking alone at night has increased over time, although we are still below the OECD median on this measure.

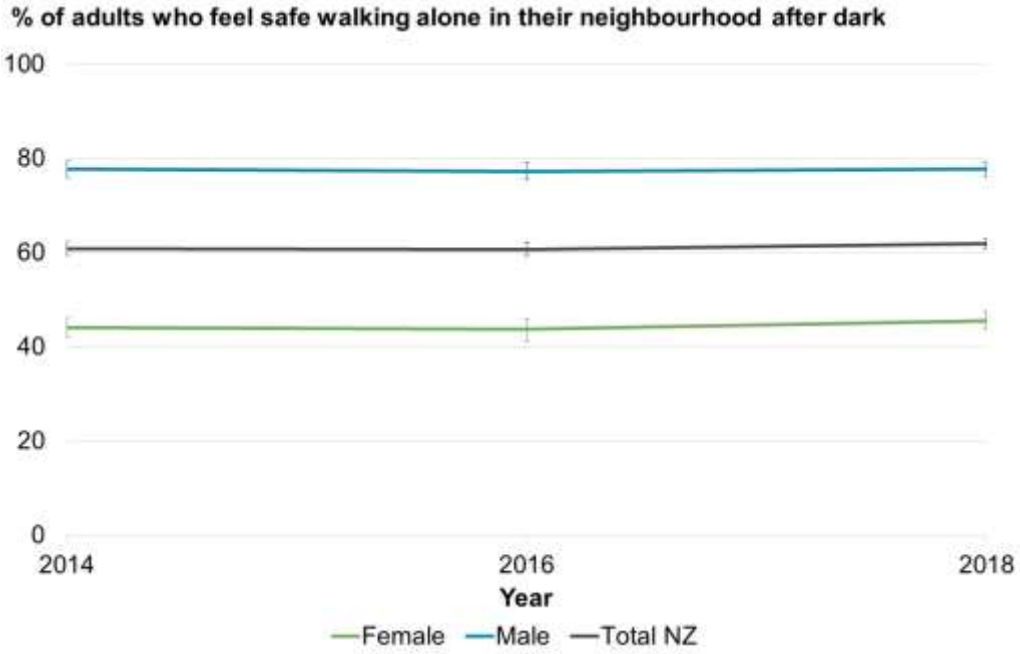
Figure 134: Perceived safety across the OECD, 2016-2018 (LSF Dashboard indicator)



Source: OECD

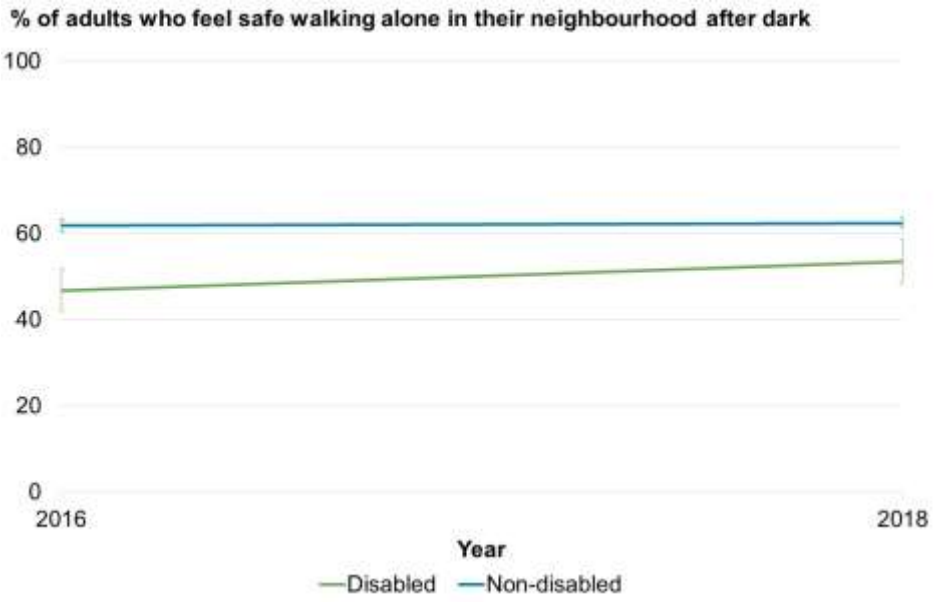
Feelings of safety are also strongly gendered, with men feeling much safer than women in general. Less than half of women feel safe walking alone after dark. Disabled people also feel less safe than non-disabled people.

Figure 135: Perceived safety by gender over time (LSF Dashboard indicator)



Source: Stats NZ (General Social Survey)

Figure 136: Perceived safety by disability status over time (LSF Dashboard indicator)



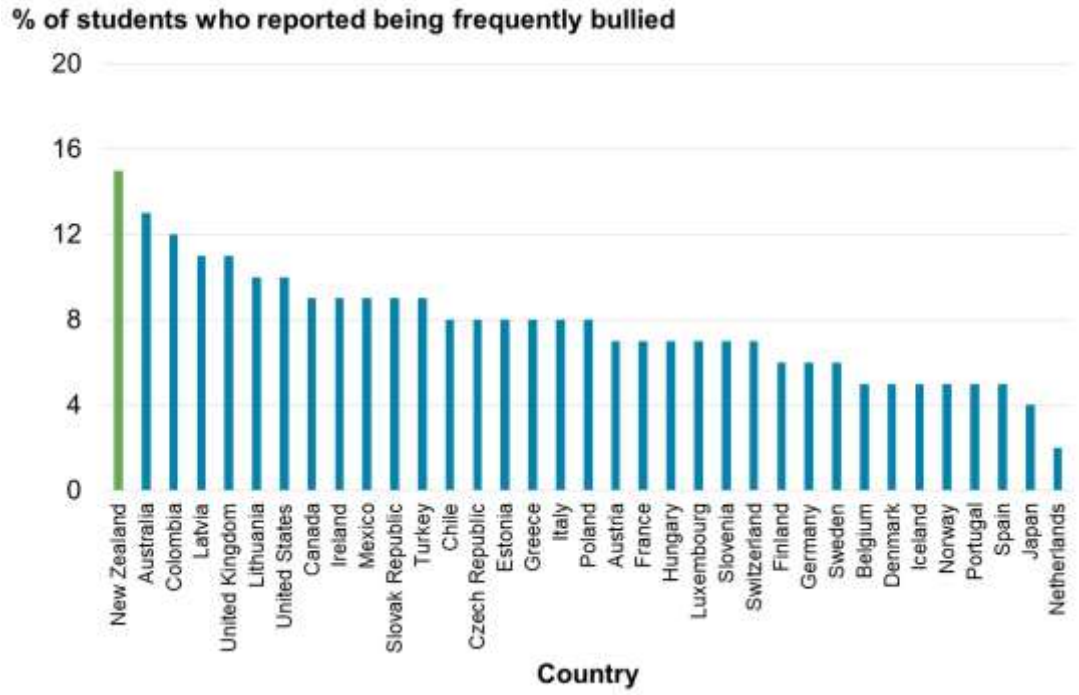
Source: Stats NZ (General Social Survey)

Safety at school and the home

Safety is particularly important for the wellbeing of children given their vulnerability, yet crime statistics can be misleading when it comes to the safety of children because of under-reporting and because many harms that can befall children are not classified as criminal.

For example, bullying is an important type of behaviour that can affect safety at school but is generally not present in crime statistics. International surveys have illustrated that Aotearoa New Zealand has perhaps the worst problem with bullying among OECD countries.

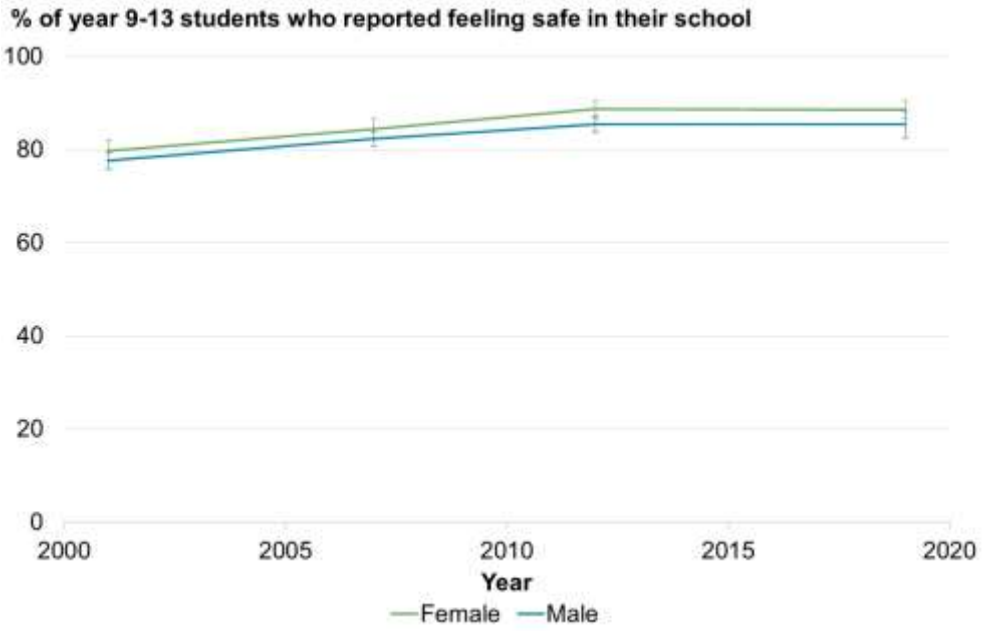
Figure 137: Frequent bullying rates across the OECD, 2018



Source: OECD

The bullying data does not paint a clear picture over time, so we do not know for sure if this problem is improving or getting worse. However, data from the Youth2000 survey series shows that secondary school students, at least, feel safer at school now than in 2001.

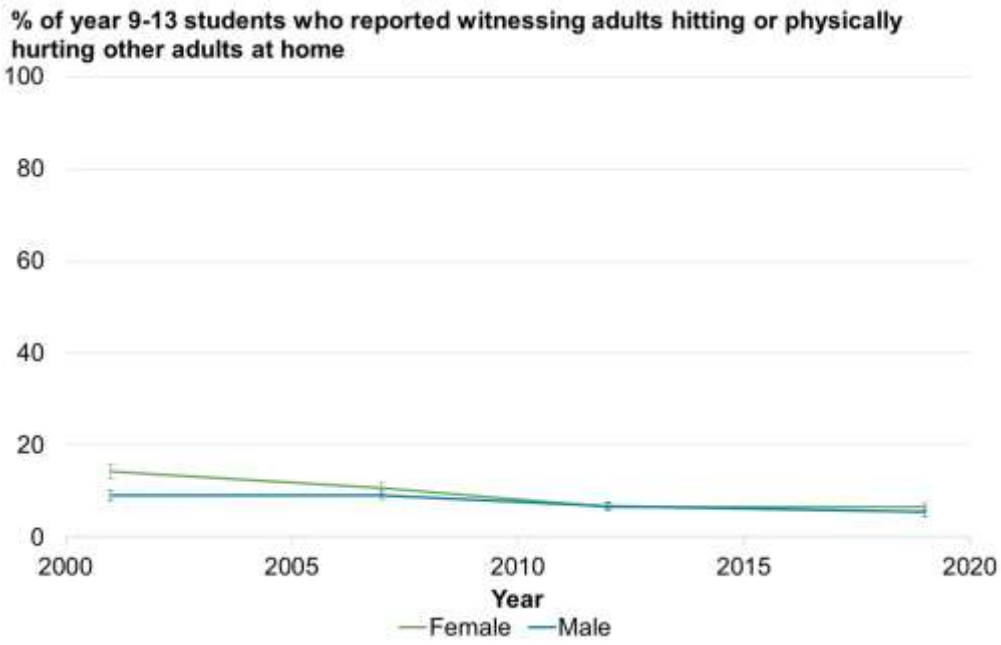
Figure 138: Reported safety at school among year 9-13 students by gender over time



Source: Youth2000 Survey

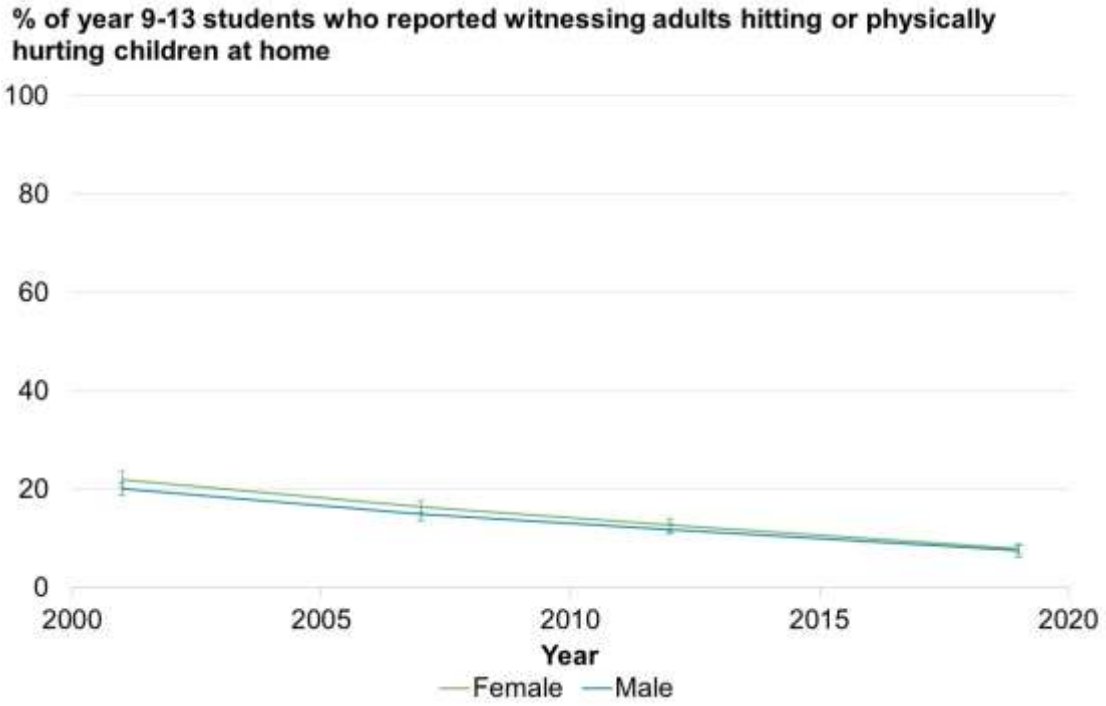
The same data source also suggests a big decline in assaults in the home over the same time period, both for assaults on children and for assaults on adults (which indirectly harm children too).

Figure 139: Reported violence against adults at home among year 9-13 students by gender over time



Source: Youth2000 Survey

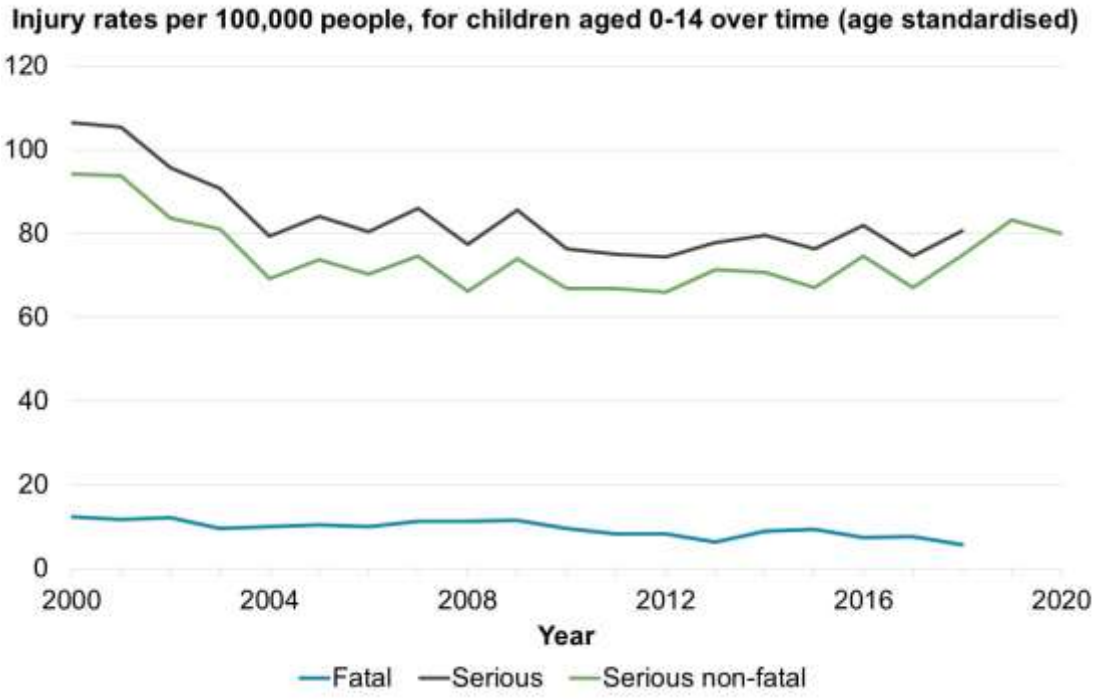
Figure 140: Reported violence against children at home among year 9-13 students by gender over time



Source: Youth2000 Survey

Injury statistics tell a similar story. Rates of serious injuries for children now appear lower than they did 20 years ago. This data source does not identify the source of the injury but does suggest that children have become somewhat safer over time.

Figure 141: Injury rates for children aged 0-14 over time, age standardised (LSF Dashboard indicator)[44]



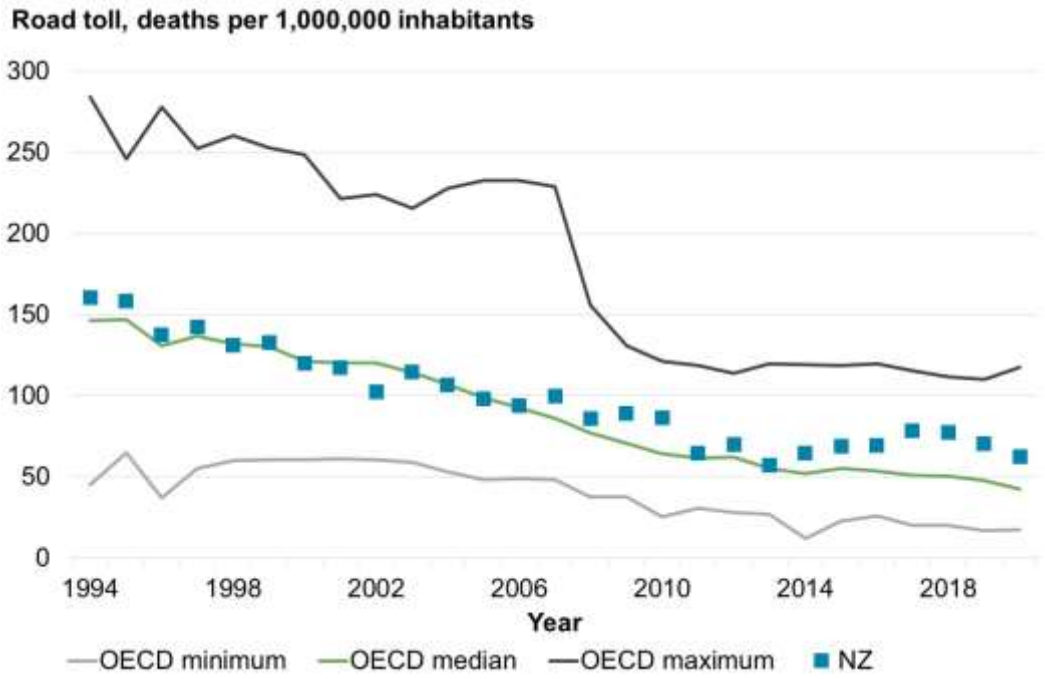
Source: Stats NZ (Serious injury outcome indicators)

Safety on the road and in the workplace

Two other important types of safety are road safety and workplace safety. Like in most OECD countries, the road toll has trended down over time. However, a period of rising fatal accidents between 2013 and 2017 means that we are now less safe on the roads than people in most OECD countries, even if the downwards trend has resumed over the past few years.

44 Fatal injuries are reported by the coroner on a different timeframe to non-fatal injuries, so the fatal and non-fatal series end before the serious injury series.

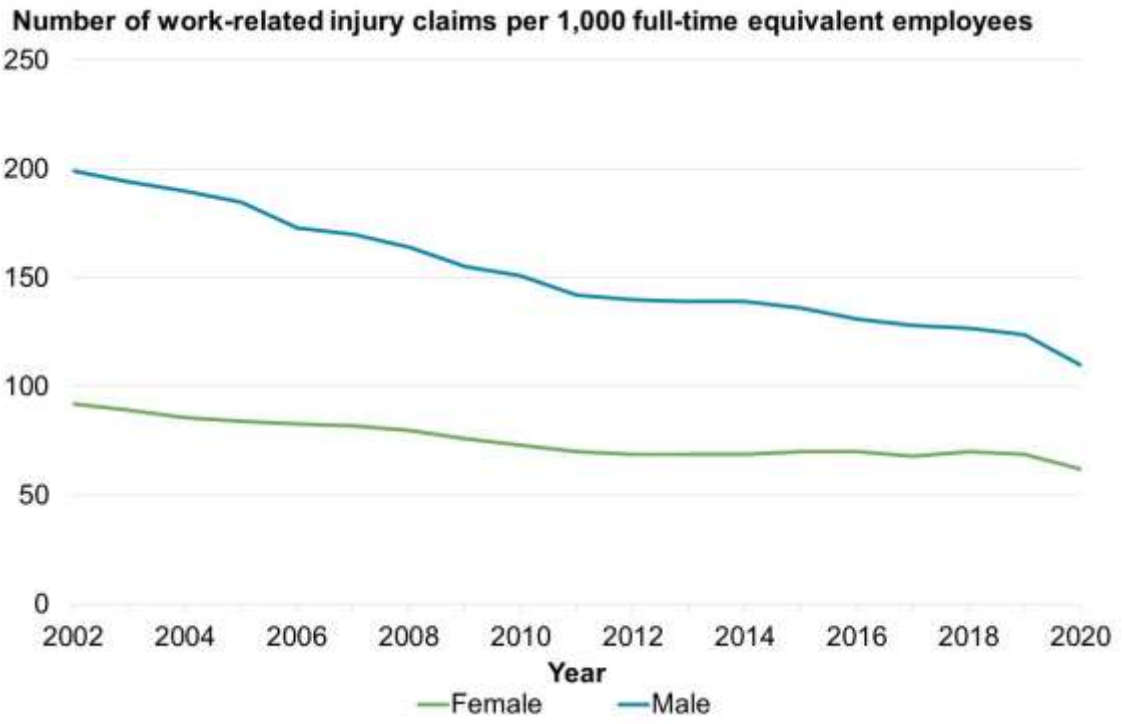
Figure 142: Road toll across the OECD over time (LSF Dashboard indicator)



Source: OECD

Another important area of safety is that of the workplace. Like other types of safety, workplace safety is strongly gendered, but in this case, men are more at risk. ACC data shows a steady decline in the rate of workplace accidents across both men and women over the past two decades.

Figure 143: Workplace injury rates by gender over time (LSF Dashboard indicator)



Source: Accident Compensation Corporation

Further reading and links:

New Zealand Crime and Victims Survey

He Whakaaro: What do we know about bullying behaviours in New Zealand? | Ministry of Education

Subjective wellbeing

Overview

Being satisfied with one's life overall, having a sense of meaning and purpose, feeling positive emotions such as happiness and contentment and not feeling negative emotions.

Wellbeing is a concept that can be defined in many ways. For some people, wellbeing is best understood as a single-dimensional concept best measured by life satisfaction as an overall summary of the state of someone's life. The LSF takes a more multifaceted view, treating subjective wellbeing as one among many important aspects of wellbeing.

The average life satisfaction of people in this country is relatively high by OECD standards but appears to have declined modestly over time. There are modest differences by age, with the oldest New Zealanders being the most satisfied. There are large differences by disability status, with life satisfaction being much lower among disabled people.

The pattern is similar for meaning and purpose, with most people reporting high levels of meaning and purpose in their lives, with a slight age gradient – older people are again the highest on this measure. Disability is strongly associated with lower levels of meaning and purpose.

The third measure we look at examines the extent to which people experience more negative than positive emotions. Relatively few people have a 'negative affect balance' compared to other countries, with older people doing particularly well on this measure. However, to the extent that people do have a negative affect balance, this is skewed disproportionately towards women.

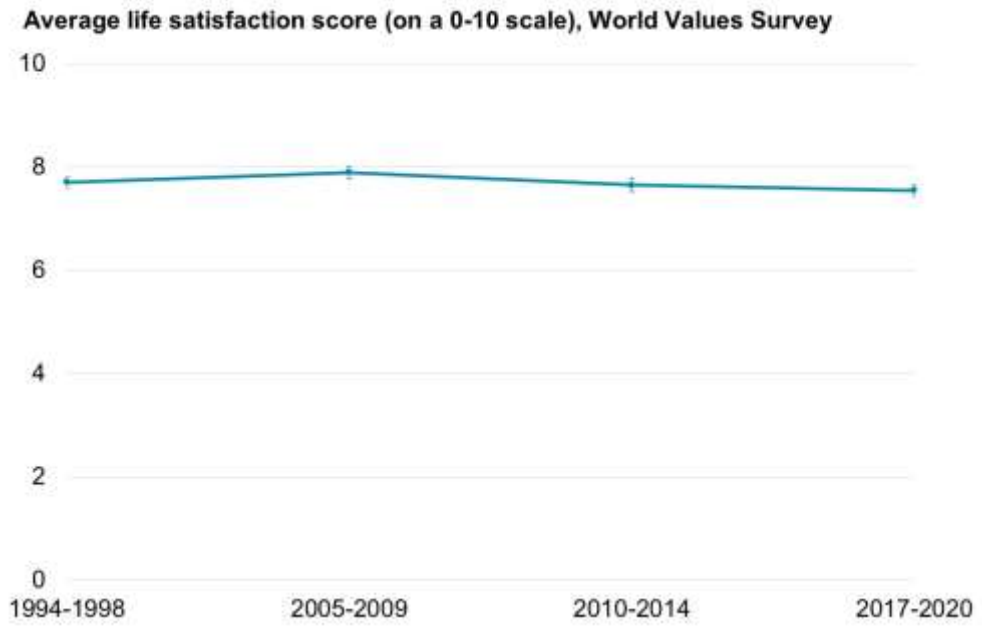
This section is in three parts relating to the three main measures of subjective wellbeing: life satisfaction, meaning and purpose and affect balance.

Life satisfaction

There are three key indicators for subjective wellbeing. Of these we have the best information for life satisfaction, from three separate data sources.

The World Values Survey has the longest time series, stretching back to 1998. There was a statistically significant fall in average life satisfaction between 2004 and 2019, but otherwise there has been no change between waves in the survey. Data (not shown) from the Gallup World Poll, used by scholars who produce the World Happiness Report, shows a very similar story.

Figure 144: Average life satisfaction over time (World Values Survey)

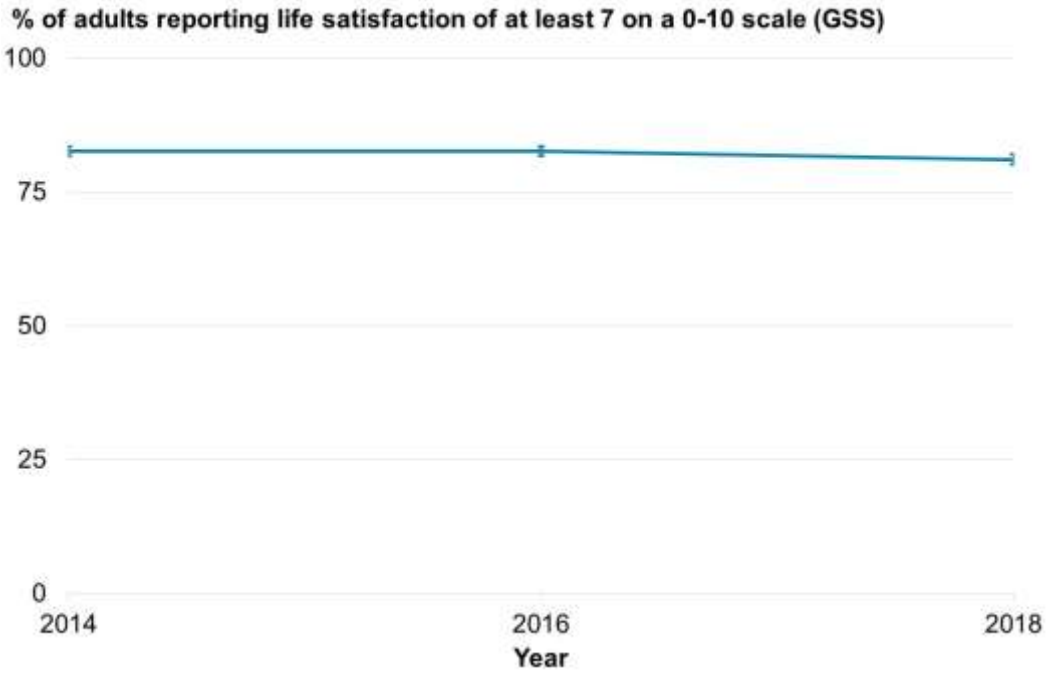


Source: World Values Survey

The General Social Survey (GSS) has a shorter time series than either the World Values Survey or Gallup World Poll but has the advantage of having a larger sample size. This allows us to investigate cross-sectional differences in more depth and with more statistical power. On average, there was a small but significant decrease in life satisfaction as measured by the GSS between 2014 and 2018, confirming the picture of slightly declining average satisfaction from the other two surveys.

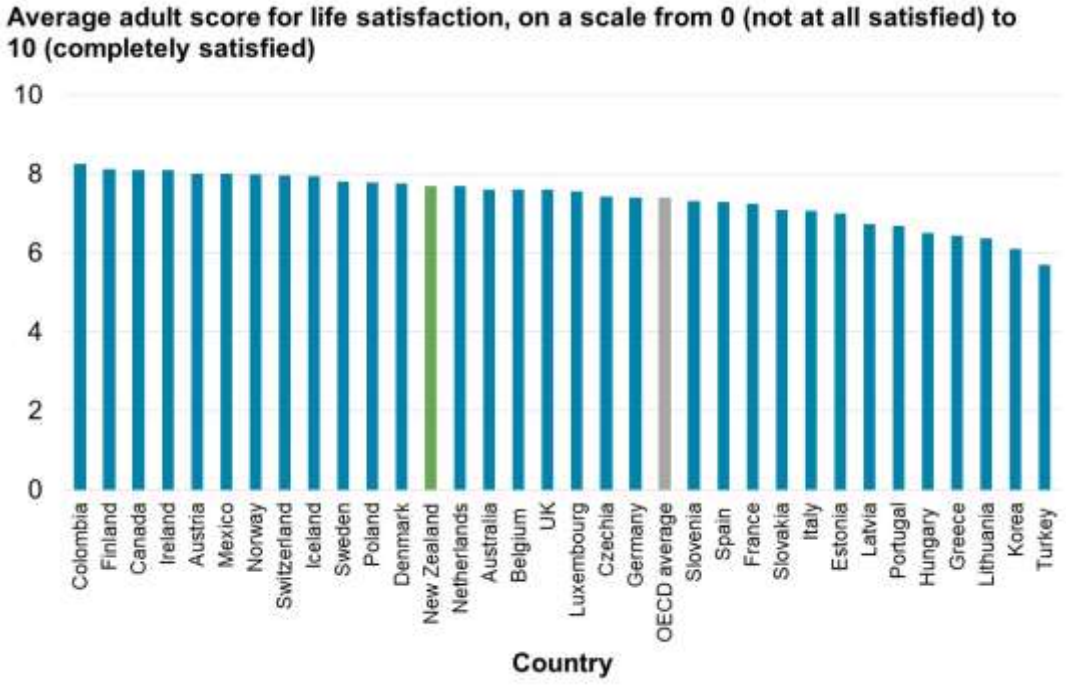
However, our levels of average life satisfaction are still high by OECD standards.

Figure 145: Life satisfaction over time (GSS – LSF Dashboard indicator)



Source: Stats NZ

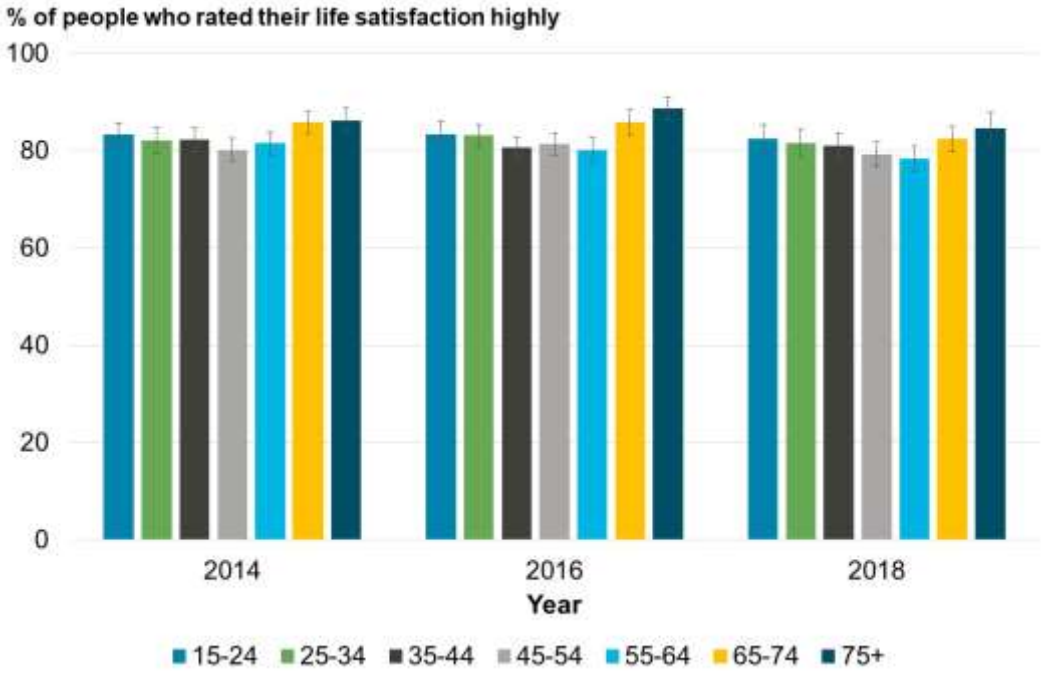
Figure 146: Life satisfaction across the OECD, 2018 or latest available year (LSF Dashboard indicator)



Source: OECD

The GSS data reveals the familiar u-shaped relationship between age and life satisfaction from international studies, with life satisfaction being highest among the over-75s and lowest among those in mid-life.

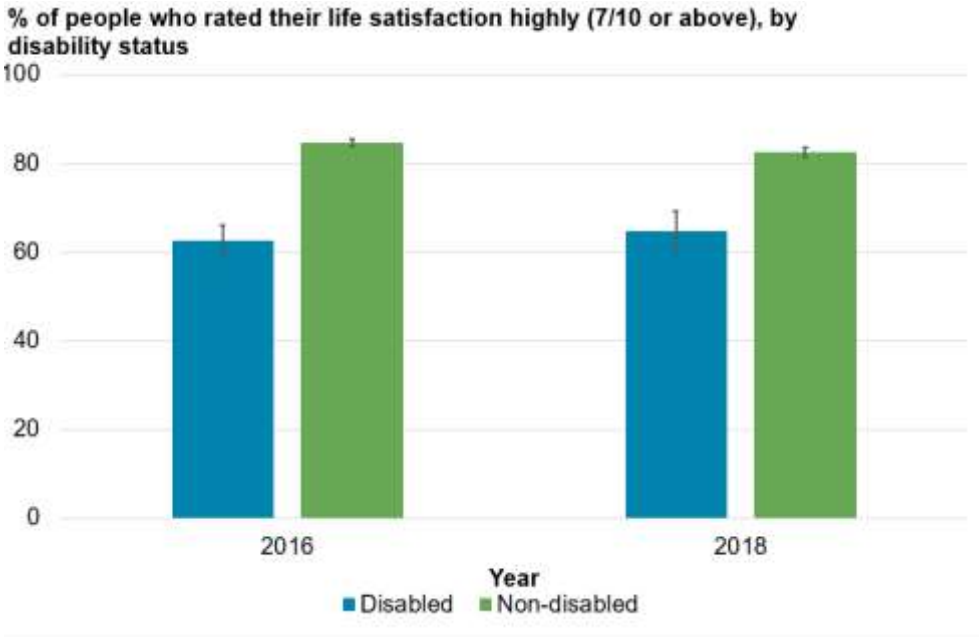
Figure 147: Life satisfaction by age group over time (LSF Dashboard indicator)



Source: Stats NZ (General Social Survey)

However, the relationship with age is modest indeed compared to the relationship with disability. Even though disability is more prevalent among older age groups where life satisfaction tends to be higher, disabled people are far less satisfied with life than non-disabled people.

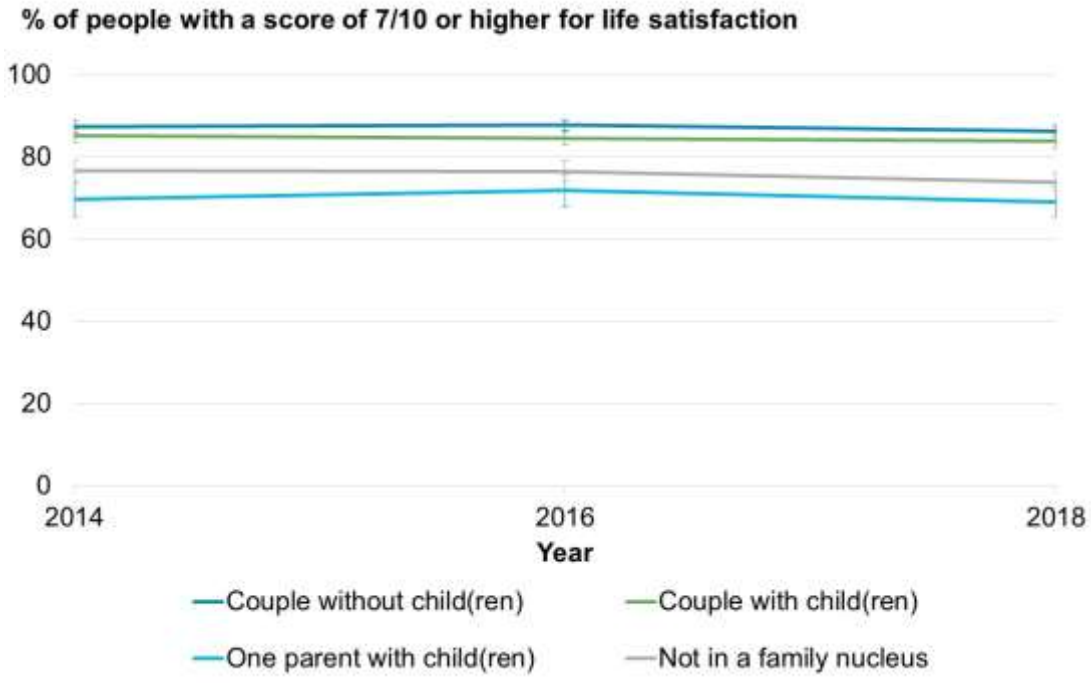
Figure 148: Life satisfaction by disability status over time (LSF Dashboard indicator)



Source: Stats NZ (General Social Survey)

While not as large as the disability gap, there is also a large gap between the life satisfaction of people in different kinds of family units. Couples without children are the most satisfied, with singletons and especially sole parents being the least satisfied.

Figure 149: Life satisfaction by family type over time (LSF Dashboard indicator)

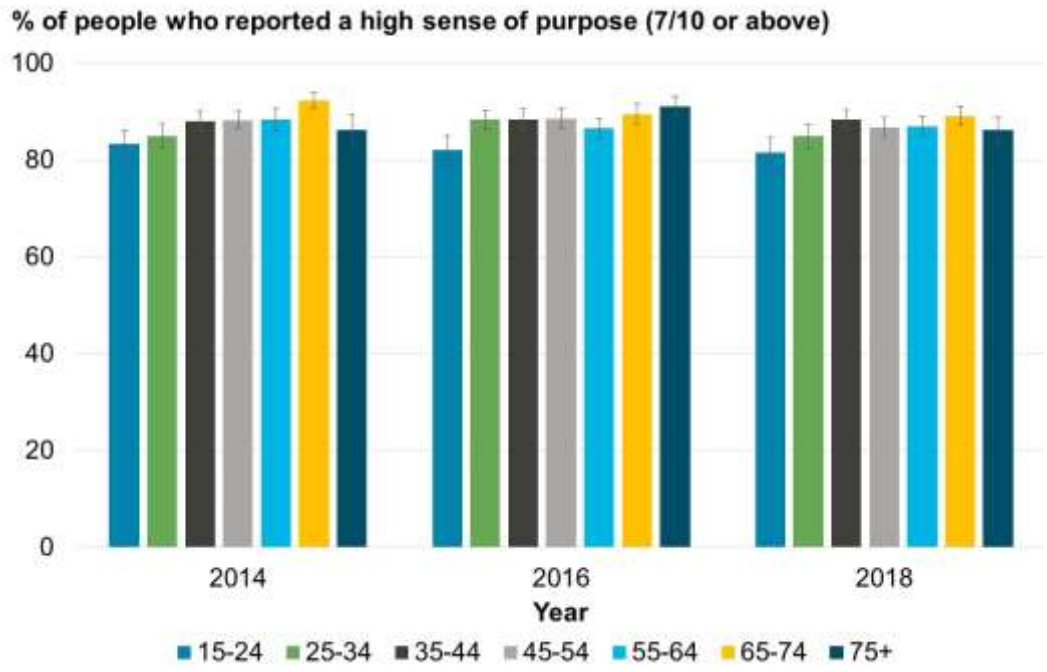


Source: Stats NZ (General Social Survey)

Sense of purpose

The second key indicator for subjective wellbeing is a sense of meaning and purpose or what is sometimes referred to as 'eudaimonic' wellbeing, with a nod to Aristotle's idea of the eudaimon or flourishing life. There is no good internationally comparable data source for this indicator, so we are restricted to Aotearoa New Zealand data. The best source of local data for this indicator is the General Social Survey question about the extent to which people find their life worthwhile. Stats NZ reports on the proportion of people scoring 7 or more on this scale, who they define as having a high sense of purpose. On average, a high proportion of New Zealanders find their lives worthwhile on this measure, although the proportion increases slightly with age.

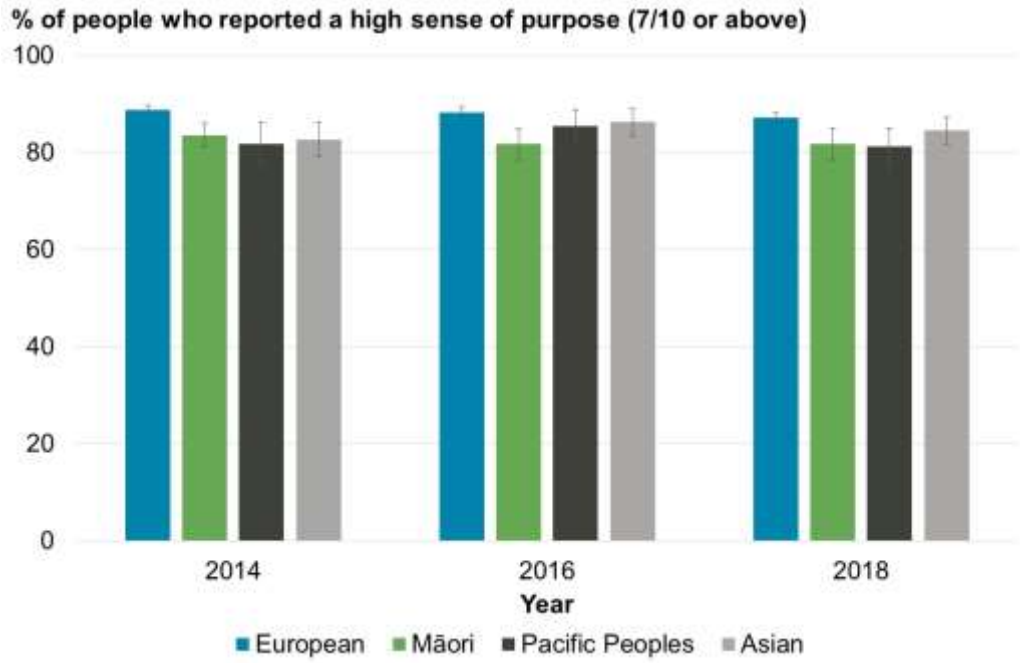
Figure 150: Sense of purpose by age group over time (LSF Dashboard indicator)



Source: Stats NZ (General Social Survey)

There are modest differences between ethnicities, although these are not consistently statistically significant between waves of the General Social Survey. To the extent there are differences, Pākehā and Asian New Zealanders seem to have a slightly higher sense of purpose, although that may just reflect the older age structure of these population groups.

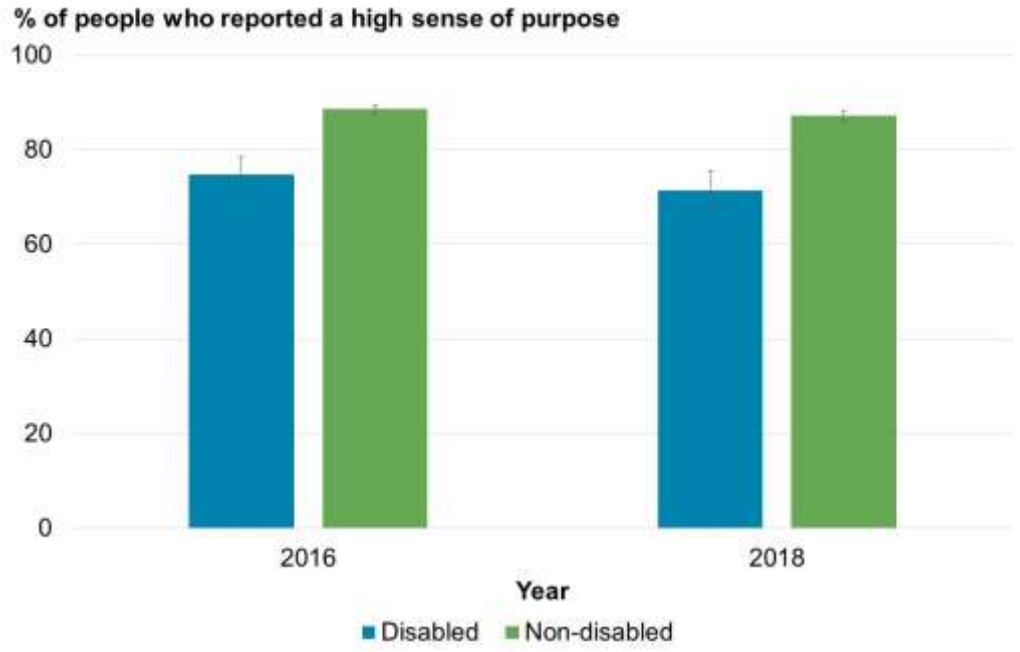
Figure 151: Sense of purpose by ethnic group over time (LSF Dashboard indicator)



Source: Stats NZ (General Social Survey)

Like for life satisfaction, there is a much more substantial difference between disabled and non-disabled people, with disabled people being less likely to find life worthwhile.

Figure 152: Sense of purpose by disability status over time (LSF Dashboard indicator)



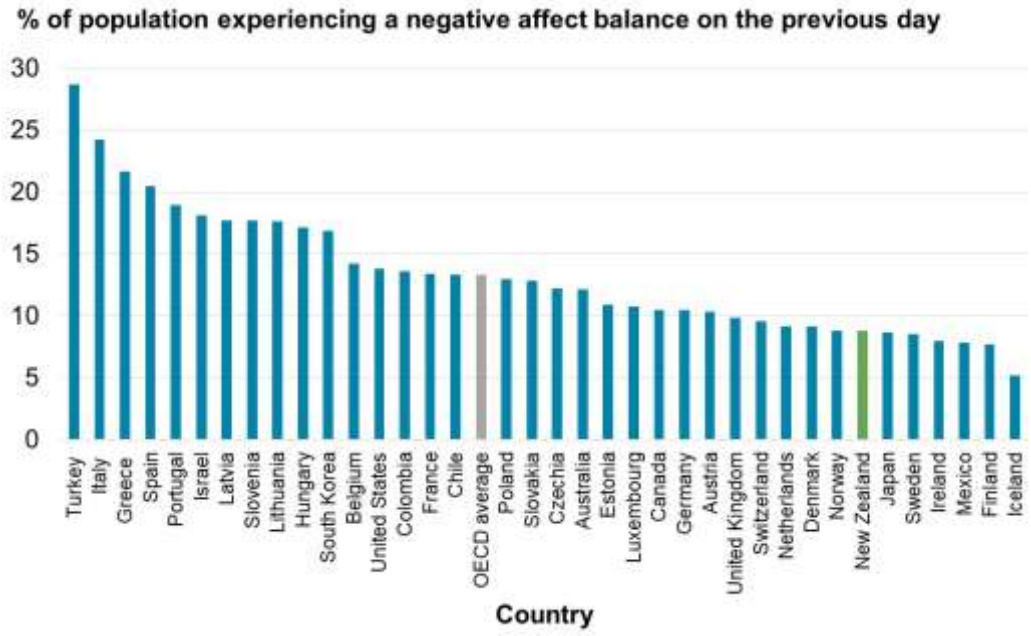
Source: Stats NZ (General Social Survey)

Affect balance

The final measure of subjective wellbeing considers the prevalence of positive and negative emotions. This is a more contentious indicator as some people rightly question the oversimplified view of some emotions as positive and others as negative (Moore, 2019). Emotions such as anger, grief and sadness are entirely appropriate in some circumstances, and many things in life that are worthwhile may require a degree of suffering to achieve. However, it is also the case that a systematic excess of so-called negative emotions over positive emotions in our day-to-day life is likely evidence of less than ideal wellbeing. It is this idea that motivates the 'affect balance' measure that subtracts the number of negative emotions experienced in a day from the number of positive emotions.

On this measure, relatively few New Zealanders experience a negative affect balance on any given day according to data collected in the Gallup World Poll. Only six OECD countries rank higher than us on this measure.

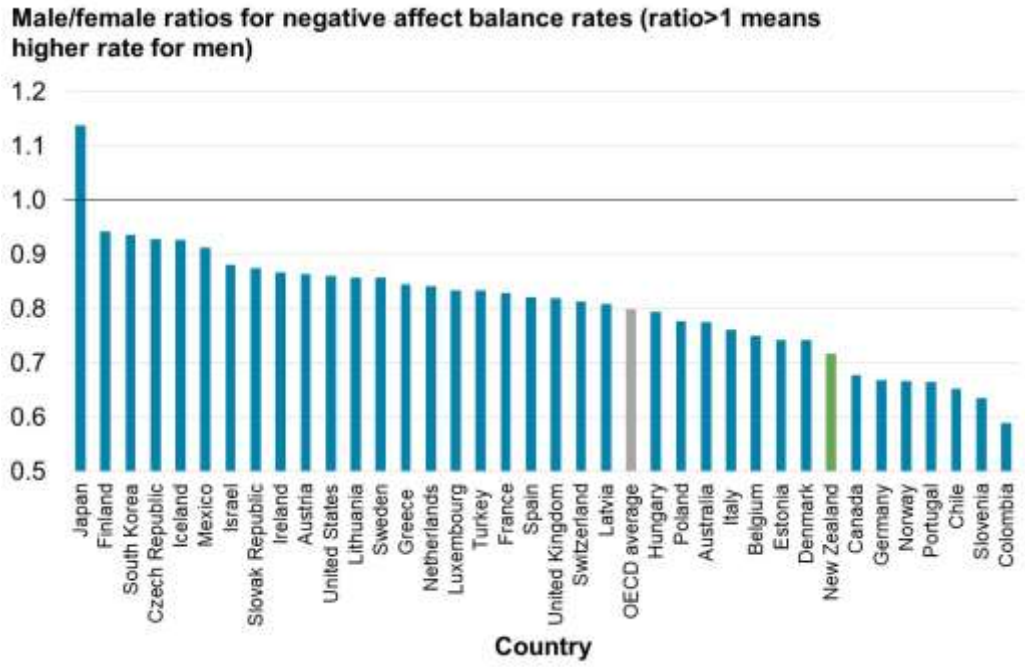
Figure 153: Affect balance across the OECD, 2016-2018



Source: OECD

A negative affect balance is more common among women, and the gender gap is larger in New Zealand than in most other OECD countries.

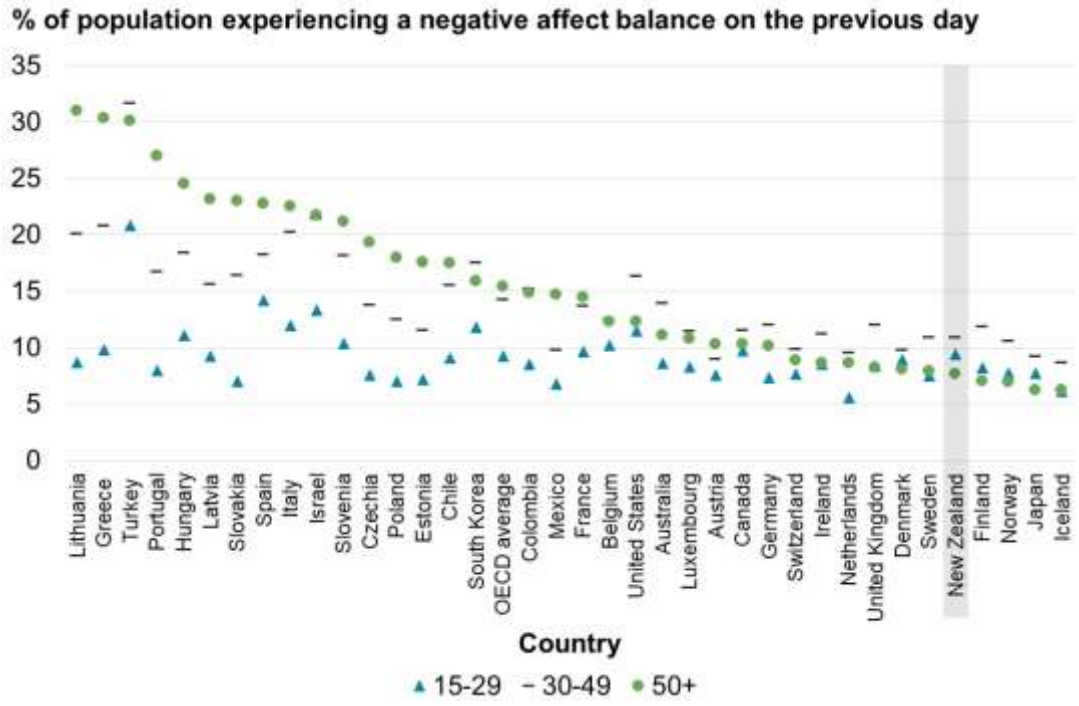
Figure 154: Affect balance by gender across the OECD, 2010-2018 (pooled data)



Source: OECD

There is also a slight age gradient, but this is much flatter than in other countries. Aotearoa New Zealand really stands out in comparison to most OECD countries in how low the prevalence of a negative affect balance is among people aged 50+.

Figure 155: Affect balance by age across the OECD, 2010-2018 (pooled data), ordered by 50+ rate



Source: OECD

Further reading and links:

World Happiness Reports

Appendix: Future data and research opportunities

The Treasury does not produce its own statistics. For a synthesis paper such as this, we are very reliant on data and insights produced by others across a distributed network of agencies and researchers. That this paper was relatively straightforward to assemble is a testament to the work done by statisticians over many years to develop robust measures and collect data on them as well as the general willingness to make data available to us.

Our particular thanks go to the teams in Stats NZ and other organisations responsible for crucial data sources and platforms such as Ngā Tūtohu, the General Social Survey, Household Economic Survey, Household Labour Force Survey, Census, the New Zealand Health Survey and the New Zealand Crime and Victims Survey. Our thanks also to international organisations such as the OECD, the Institute for Health Metrics and Evaluation and the TIMSS and PIRLS International Study Center.

As the Treasury looks forward to producing the Wellbeing Report every four years, we will be reliant on the continued efforts of individuals and teams across these organisations to continue producing existing series. There are also opportunities to enhance the data system to support wellbeing analysis and reporting. We ask that the relevant agencies bear these opportunities in mind when considering their own investment priorities for their data systems.

Data

These are some of the main gaps and opportunities for improvement we identified in producing this paper in no particular order:

- **Unpaid work and leisure:** The last Time Use Survey was in 2010, and there are no plans for another. Although some insight into patterns of unpaid work and leisure can be gained from other sources, we are not currently in a position to comprehensively understand changes in patterns of time use, which particularly limits our ability to analyse issues of gender equity. More information about time use would improve our ability to monitor this important issue.
- **Shared care and 'modern family' statistics:** This paper, like those that have gone before it, has shown that wellbeing is much higher among some kinds of families than others. However, our ability to explore this further is hampered by the simplistic way in which families are defined across the census and the various surveys that produce wellbeing statistics. In future, more information about the prevalence of shared care and other flows of support between households would help us understand in more detail the circumstances that make sole parents, for example, more or less resilient.

- **Increasing sample sizes:** The nature of wellbeing means that, in many cases there is no substitute for surveys as the key source of information. Unfortunately, in many cases, the sample size for key surveys is too small to allow us to, for example:
  - examine wellbeing at the level of small local communities
  - zoom in on the wellbeing of small groups defined by more than one variable (eg, young men) or for other small groups (such as people of a particular Pacific or Asian ethnicity, or a Middle Eastern, Latin American or African ethnicity) because of the large sampling errors associated with small groups
  - be definitive about whether wellbeing has gone up or down over time for a particular group or whether wellbeing is higher for one group than another, unless the change or difference is very large, because of the modest statistical power associated with small sample sizes.
- **Cultural capability:** As part of the recent changes to the LSF, we expanded the conceptualisation of the old cultural identity domain to capture cultural capability and belonging, but the data available for this domain is still quite limited. Constructing and adding new questions to existing surveys on this important topic would help us monitor it more closely in future.
- **Rainbow communities and disabled people:** There are important differences in wellbeing across many different types of subpopulation, but in comparison to variables such as age, gender and ethnicity, sexual identity and disability are more inconsistently included in various surveys, making it more difficult to explore the wellbeing of these groups.
- **Wealth:** Like in many countries, data on the distribution of wealth is more limited than data for income and consumption. Data is particularly lacking at the top end of the distribution. Improvements in data collection would allow us to more accurately track changes in the distribution of wealth and the subsequent impact this has on the wellbeing of households.

Research

There are also opportunities to make more-sophisticated use of the data that is produced. Single-dimension indicators have many merits, such as simplicity, but also come with many limitations. To the extent possible, the Treasury may seek to conduct some research itself before the 2026 Wellbeing Report, but with the broad remit of our work and limited capacity as an agency, the more that other researchers are able to make sophisticated use of existing data, the more thoroughly we as a community will understand our wellbeing.

These are some key research questions:

- **Within-person change over time:** In wellbeing research and analysis, there is no shortage of cross-sectional associations, but causal directions are less well understood. To move from monitoring to improving wellbeing, understanding those factors that can drive future improvements in wellbeing across multiple dimensions would be extremely useful. As such, we look forward to analysis of the data that will be produced by the new Living in Aotearoa survey and ongoing research using the Growing Up in New Zealand study.

- **Multivariate/multidimensional analysis:** Techniques such as clustering and regression analysis have the potential to provide deeper insight into the complex realities of people's lives than the simple one-dimensional analysis presented in this paper.

- **Age standardisation:** Many wellbeing variables would be more readily interpreted if they were age standardised by the owners of the data. Where variables have a strong relationship with age (such as home ownership, income, victimisation and so on), changes over time can often be explained at least partly by changes in the age composition of the population. Comparison of a raw and age-standardised figure can illuminate where this is the case. Age standardisation would also make it easier to make meaningful comparisons between the ethnicities given the large differences in age structure between the major ethnic groups in this country.

- **Indices of wellbeing:** In multidimensional wellbeing analysis, there is always the risk that the wood will be lost for the trees. We have attempted to be selective in this paper and to assemble a coherent narrative, but it is likely that it is still too dense for many readers and it is also likely that different authors would have shaped the narrative somewhat differently. Although indices come with many of their own challenges, they also hold out the prospect, if carefully constructed, of allowing a more systematic approach to analysing trends and understanding the relative importance of different drivers.

- **Identification of leading indicators and projections:** Social indicators work of this kind is invariably backwards-facing, looking at how we have got here from there. In many cases, though, there may be sufficient information available to make sensible projections for where wellbeing trends may be heading. Where sensible projections can be developed, these could prove invaluable in seeking to improve wellbeing in the future.

Bibliography

Amore, K., Viggers, H., & Howden-Chapman, P. (2021). *Severe housing deprivation in Aotearoa New Zealand, 2018*. Wellington: Ministry of Housing and Urban Development. Retrieved from https://www.hud.govt.nz/assets/News-and-Resources/Statistics-and-Research/2018-Severe-housing-deprivation-estimate/Severe-Housing-Deprivation-2018-Estimate-Report.pdf

Attanasio, O. P., & Pistaferri, L. (2016). Consumption inequality. *Journal of Economic Perspectives, 30(2)*, 3-28. Retrieved from https://pubs.aeaweb.org/doi/pdfplus/10.1257/jep.30.2.3

Balestra, C., & Tonkin, R. (2018). *Inequalities in household wealth across OECD countries: Evidence from the OECD Wealth Distribution Database* (Working Paper No. 88). Paris: OECD. Retrieved from https://www.oecd.org/officialdocuments/publicdisplaydocumentpdf/?cote=SDD/DOC(2018)1&docLanguage=En

Ball, C., & Creedy, J. (2015). *Inequality in New Zealand 1983/84 to 2013*/14 (New Zealand Treasury Working Paper 15/06). Wellington: The Treasury. Retrieved from https://www.treasury.govt.nz/sites/default/files/2015-06/twp15-06.pdf

Carver, T., & Grimes, A. (2016). *Income or consumption: Which better predicts subjective wellbeing?* (Motu Working Paper 16/12). Wellington: Motu Economic and Public Policy Research. Retrieved from https://motu-www.motu.org.nz/wpapers/16_12.pdf

Cook, D., Evans, P., Ihaka-McLeod, H., Nepe-Apatu, K., Tavita, J., & Hughes, T. (2020). *He Kāhui Waiora: Living Standards Framework and He Ara Waiora COVID-19: Impacts on wellbeing*. Wellington: The Treasury. Retrieved from https://www.treasury.govt.nz/publications/dp/dp-20-02

CoreLogic. (2022). *Housing affordability report, Q4 2021*. Wellington: CoreLogic. Retrieved from https://www.corelogic.co.nz/sites/default/files/2022-02/2202_CoreLogicNZ_Housing-Affordability_Q42021_Report_Final.pdf

Fleming, T., Archer, D., King-Finau, T., Dewhirst, M., & Clark, T. (2021). *Youth19 Safety and Violence Brief*. Auckland and Wellington: Youth19 and The Adolescent Health Research Group.

Global Burden of Disease Study. (2020). Global burden of 369 diseases and injuries in 2014 countries and territories, 1990-2018: a systematic analysis for the Global Burden of Disease Study 2019. *The Lancet, 396(10258)*, 1204-1222. doi:https://doi.org/10.1016/S0140-6736(20)30925-9

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.

Greaves, L., Oldfield, L., Von Randow, M., Sibley, C., & Milne, B. (2021). How low can we go? Declining survey response rates to New Zealand electoral roll mail surveys over three decades. *Political Science, 72(3)*, 228-244. doi:https://doi.org/10.1080/00323187.2021.1898995

Grundke, R., Marcolin, L., Nguyen, T. L., & Squicciarini, M. (2018). *Which skills for the digital era? Returns to skills analysis* (OECD Science, Technology and Industry Working Papers 2018/09). Paris: OECD Publishing. doi:https://dx.doi.org/10.1787/9a9479b5-en

Health Promotion Agency. (2019). *Wellbeing and mental health among rainbow New Zealanders*. Wellington: Health Promotion Agency. Retrieved from https://www.hpa.org.nz/sites/default/files/Mental-wellbeing-among-rainbow-adults-factsheet.pdf

Hughes, T. (2021). *Towards a Living Standards Framework for all Aotearoa: Culture, children and wellbeing*. Wellington: The Treasury. Retrieved from https://www.treasury.govt.nz/publications/dp/dp-21-01

Hughey, K., Kerr, G., & Cullen, R. (2019). *Public perceptions of New Zealand's environment: 2019*. Christchurch: EOS Ecology. Retrieved from https://research.lincoln.ac.nz/resources/general/Public-Perceptions-of-New-Zealands-Environment-2019_2021-01-25-032756.pdf

Inglehart, R., Haerpfer, A., Moreno, C., Welzel, K., Kizilova, K., Diez-Medrano, J., & Puranen, B. (2020). *World Values Survey: All rounds – country-pooled datafile version*. Madrid: JD Systems Institute. Retrieved from https://www.worldvaluessurvey.org/WVSDocumentationWVL.jsp

Johnson, A., Howden-Chapman, P., & Eaqub, S. (2018). *A stocktake of New Zealand's housing*. Wellington: Ministry of Business, Innovation and Employment.

Martin, C., Hulse, K., & Pawson, H. (2018). *The changing institutions of private rental housing: an international review* (AHURI Final Report No. 292). Melbourne: Australian Housing and Urban Research Institute. doi:10.18408/ahuri-7112201

May, S., Jang-Jones, A., & McGregor, A. (2019). *PISA2018: New Zealand summary report – system performance & equity*. Wellington: Ministry of Education. Retrieved from https://www.educationcounts.govt.nz/__data/assets/pdf_file/0006/196629/PISA-2018-NZ-Summary-Report.pdf

Ministry for Pacific Peoples. (2020). *Pacific Aotearoa status report: A snapshot.* Wellington: Ministry for Pacific Peoples. Retrieved from https://www.mpp.govt.nz/assets/Reports/Pacific-Peoples-in-Aotearoa-Report.pdf

Ministry for the Environment. (2021). *Our air 2021*. Wellington: Ministry for the Environment. Retrieved from https://environment.govt.nz/publications/our-air-2021/

Ministry of Education & Ministry of Business, Innovation and Employment. (2016a). *Skills in New Zealand and around the world: Survey of Adult Skills (PIAAC).* Wellington: Ministry of Education & Ministry of Business, Innovation and Employment. Retrieved from https://www.educationcounts.govt.nz/__data/assets/pdf_file/0003/173514/Skills-in-New-Zealand-and-Around-the-World.pdf

Ministry of Education & Ministry of Business, Innovation and Employment. (2016b). *Skills at work: Survey of Adult Skills (PIAAC)*. Wellington: Ministry of Education & Ministry of Business, Innovation and Employment. Retrieved from https://www.educationcounts.govt.nz/__data/assets/pdf_file/0007/173572/Skills-at-Work.pdf

Ministry of Health. (2020). *Health and Independence Report 2019: The Director-General of Health's annual report on the state of public health*. Wellington: Ministry of Health. Retrieved from https://www.health.govt.nz/system/files/documents/publications/health-and-independence-report-2019-25feb2021.pdf

Ministry of Justice. (2021). *New Zealand Crime and Victims Survey*. Wellington: Ministry of Justice. Retrieved from https://www.justice.govt.nz/justice-sector-policy/research-data/nzcvs/#survey-results

Ministry of Social Development. (2016). *The Social Report 2016: Te pūrongo oranga tangata*. Wellington: MSD. Retrieved from https://socialreport.msd.govt.nz/documents/2016/msd-the-social-report-2016.pdf

Moore, K. (2019). *Wellbeing and aspirational culture*. Cham, Switzerland: Palgrave MacMillan.

Mullis, I. V., Martin, M. O., Foy, P., & Hooper, M. (2016). *PIRLS 2016: International results in reading*. Boston: Boston College. Retrieved from http://timssandpirls.bc.edu/pirls2016/international-results/wp-content/uploads/structure/CompletePDF/P16-PIRLS-International-Results-in-Reading.pdf

Mullis, I. V., Martin, M. O., Foy, P., Kelly, D., & Fishbein, B. (2019). TIMSS 2019: *International results in mathematics and science*. Boston: Boston College. Retrieved from https://timss2019.org/reports/wp-content/themes/timssandpirls/download-center/TIMSS-2019-International-Results-in-Mathematics-and-Science.pdf

OECD. (2017). *CO4.4: Teenage suicides (15-19 years old)*. Paris: OECD. Retrieved from https://www.oecd.org/els/family/CO_4_4_Teenage-Suicide.pdf

OECD. (2019a). *PISA 2018 Results (Volume 1)*: What students know and can do. Paris: OECD Publishing. doi:https://doi.org/10.1787/5f07c754-en

OECD. (2019b). *PISA 2018 Results (Volume II)*: Where all students can succeed. Paris: OECD Publishing. doi:https://doi.org/10.1787/b5fd1b8f-en

OECD. (2019c). *Skills Matter: Additional results from the Survey of Adult Skills*. Paris: OECD. doi:https://doi.org/10.1787/1f029d8f-en

OECD. (2020). *How's Life*. Paris: OECD. Retrieved from https://doi.org/10.1787/23089679

Perry, B. (2019). *Household incomes in New Zealand: Trends in indicators of inequality and hardship*. Wellington: MSD. Retrieved from https://www.msd.govt.nz/about-msd-and-our-work/publications-resources/monitoring/household-incomes/household-incomes-1982-to-2018.html

Perry, B. (2021). *Housing affordability for renters and owners: International comparisons*. Wellington: Ministry of Social Development. Retrieved from https://www.msd.govt.nz/documents/about-msd-and-our-work/publications-resources/monitoring/household-income-report/2021/international-comparisons-of-housing-affordability.docx

Perry, P., & Yeung, P. (2021). Keeping New Zealand in the World Values Survey, 1985-2019: A brief project history and selected New Zealand social trends from the world's largest non-commercial social survey. *Aotearoa New Zealand Journal of Social Issues, 1*. doi:https://doi.org/10.24135/anzjsi.v1i.52

Piketty, T. (2020). *Capital and ideology*. Cambridge, MA: Harvard University Press.

Satherley, P. (2021). *Education and two social trust indicators*. Wellington: Ministry of Education. Retrieved from https://www.educationcounts.govt.nz/publications/tertiary_education/beyond-study/social-outcomes/education-and-two-social-trust-indicators

Scott, D. (2021). *Education and health*. Wellington: Ministry of Education. Retrieved from https://www.educationcounts.govt.nz/publications/tertiary_education/beyond-study/social-outcomes/education-and-health

Stats NZ. (2019). *Indicators Aotearoa New Zealand – Ngā Tūtohu Aotearoa: Key findings from consultation and engagement*. Wellington: Stats NZ. Retrieved from https://www.stats.govt.nz/assets/Uploads/Indicators-Aotearoa-New-Zealand-Nga-Tutohu-Aotearoa-Key-findings-from-consultation-and-engagement/Downloads/indicators-aotearoa-new-zealand-nga-tutohu-aotearoa-key-findings-from-consultation-and-engagement.pdf

Stats NZ. (2020). *Housing in Aotearoa: 2020*. Wellington: Stats NZ. Retrieved from https://www.stats.govt.nz/reports/housing-in-aotearoa-2020

Stats NZ. (2022). *Net worth statistics year ended June 2021 – information and improvements*. Wellington: Stats NZ. Retrieved from https://www.stats.govt.nz/methods/net-worth-statistics-year-ended-june-2021-information-and-improvements

Stevenson, B., & Wolfers, J. (2013). *Subjective well-being and income: Is there any evidence of satiation?* Cambridge, MA: NBER. Retrieved from https://www.nber.org/papers/w18992.pdf

Symes, L. (2021). *The wealth ladder: House prices and wealth inequality in New Zealand* (Analytical Note 21/01). Wellington: The Treasury. Retrieved from https://www.treasury.govt.nz/sites/default/files/2021-11/an-21-01.pdf

The Treasury. (2021a). *He Tirohanga Mokopuna*. Wellington: The Treasury. Retrieved from https://www.treasury.govt.nz/publications/ltfp/he-tirohanga-mokopuna-2021

The Treasury. (2021b). *The Living Standards Framework (LSF) 2021*. Wellington: The Treasury. Retrieved from https://www.treasury.govt.nz/publications/tp/living-standards-framework-2021

The Treasury. (2022). *The Living Standards Framework Dashboard*. Wellington: The Treasury. Retrieved from https://www.treasury.govt.nz/publications/tp/living-standards-framework-dashboard-april-2022

Vink, M. (2014). *Intergenerational developments in household saving behaviour* (New Zealand Treasury Working Paper 14/23). Wellington: The Treasury. Retrieved from https://www.treasury.govt.nz/sites/default/files/2014-11/twp14-23.pdf

Vowles, J., & Curtin, J. (2020). *A populist exception? The 2017 New Zealand General Election*. Canberra: ANU Press. doi:http://doi.org/10.22459/PE.2020

Waring, M. (2018). *Still counting: Women's work and policy-making*. Wellington: Bridget William Books.