

Understanding the State of our Housing: Housing in Aotearoa: 2020

Te Māramatanga ki te Tūnga o Ō Tātou Whare Noho: Ngā Whare Noho i Aotearoa 2020

ROSEMARY GOODYEAR*

ALAN BENTLEY, VICKI WHITE, CLAIRE BRETHERTON,
CASIMIR MACGREGOR, ROMAN JAQUES, DAVID DOWDELL,
JARRED BUTLER, ANGELA FABIAN, CHELSEA DICKSON

Abstract

This research note summarises key aspects of housing in Aotearoa which has been reported under the mandate of the Chief Statistician. *Housing in Aotearoa: 2020* was published in December 2020 and has a unique place in the provision of housing data and analysis. It brings together a comprehensive analysis of available housing information from official and government administrative statistics. In doing so, it addresses some of the key questions identified in the report *Review of Housing Statistics 2009* (Statistics New Zealand, 2009) which developed a framework of housing statistics, and highlighted the key information gaps in existing housing statistics.¹

The report addressed two key questions:

* Dr Rosemary Goodyear is a senior data analyst at Stats NZ.

Other author affiliations are as follows:

- Dr Claire Bretherton, Angela Fabian and Chelsea Dickson (Stats NZ).
- Alan Bentley (Ministry of Housing and Urban Development).
- Vicki White, Casimir Macgregor, Roman Jacques, David Dowdell and Jarred Butler (BRANZ).

He kaitātari raraunga matua a Tākuta Rosemary Goodyear i Tatauranga Aotearoa. E whai nei ngā hononga o ērā atu kaituhi:

- Tākuta Claire Bretherton rātou ko Angela Fabian ko Chelsea Dickson (Tatauranga Aotearoa).
- Alan Bentley (Te Tūāpapa Kura Kāinga).
- Vicki White rātou ko Casimir Macgregor ko Roman Jacques ko David Dowdell ko Jarred Butler (BRANZ).

Email/Īmēra: rosemary.goodyear@stats.govt.nz

- How well does New Zealand's housing stock provide suitable, affordable, warm, safe, and secure shelter for its citizens?
- Where are the gaps and inequalities in housing and who is affected by these?

Also included is a brief discussion on how housing interacts with the environment, and the relationship of housing with climate change.

Keywords: housing policy, housing standards, health inequalities, community trials, tenure

Whakarāpopotonga

E whakarāpopoto ana tēnei tuhipoka rangahau i ngā āhuetanga matua o ngā whare noho i Aotearoa kua pūrongotia i raro i te mana o te kaitatauranga kāwanatanga. He mea whakaputa Ngā Whare Noho i Aotearoa: 2020, i te tau 2020, ā, ka whai tūnga ahurei mō te whakarato i ngā raraunga me te tātaritanga ā-whare noho. Ka whakahiato i te tātaritanga matawhānui o ngā mōhiohio whare noho e wātea ana mai i ngā tauanga whaimana, kāwanatanga anō hoki. Mā te pērā ka whakatutuki i ētahi o ngā pātai matua i tautohutia i te pūrongo Arotake i ngā tauanga whare noho o te tau 2009 (Tatauranga Aotearoa, 2009) i whakawhaneketia ai he anga o ngā tauanga whare noho, i miramira hoki i ngā āputa mōhiohio matua i roto i ngā tauanga whare noho tae rā anō ki taua wā.

I tutuki i te pūrongo ētahi pātai matua e rua:

- He pēhea te kaha o te katoa o ngā whare noho i Aotearoa ki te whakarato i te whakaruruhau whaiutu, mahana me te haumaruru ki ōna kirirarau?
- Kei whea ngā āputa me ngā rerekētanga i te whakarato whare noho, ā, ka pāngia a wai mā e ēnei?

Kei roto hoki i *Ngā Whare Noho i Aotearoa: 2020* he matapakinga poro mō te āhua e pāhekoheko ai ngā whare noho ki te taiiao, me te pānga o ngā whare noho ki te panoni āhuarangi.

Ngā kupu matua: ratonga whare noho, āhuetanga o ngā whare noho, rangahau, whai whare noho, tatauranga whānui

Housing in Aotearoa: 2020 has been developed and released under the mandate of the Chief Statistician. It is the first substantive overview of the state of housing in New Zealand since *New Zealand Now: Housing* (Statistics New Zealand, 1998). It updates information from the housing stocktake report of 2018. It is also the first time that the recommendations of the *Review of Housing Statistics 2009*, (Statistics New Zealand, 2009) have been reflected in a comprehensive analysis of the housing statistics that have been developed over the last decade.

Review of Housing Statistics 2009

This report has been shaped by the report *Review of Housing Statistics 2009* (Statistics New Zealand, 2009), which identified the key areas of housing information required to better understand housing in Aotearoa New Zealand, after consultation with a range of agencies. The aim of the review was to provide a framework for housing statistics in order to “identify the enduring research and policy needs relating to housing statistics, [and] ascertain the extent to which housing statistics are adequate for current and prospective information needs” (Statistics New Zealand, 2009, p. iii).

The review drew on the work of the United Nations, which identified four elements as being crucial to the measurement of housing adequacy: affordability, suitability, habitability and tenure security. In addition, two further key areas were identified that needed better statistical information: housing supply and housing demand. The review set up a research agenda, which included better measurement of housing affordability and housing habitability and development of more information around crowding and homelessness.

In the decade since 2009, there has been considerable progress in the development of housing statistics. New streams of information have been created, through new and existing surveys, as well as the greater use of administrative data on housing. Habitability and

homelessness are two areas that have seen a substantial increase in information.

In 2009, there was very little information around housing habitability, and it was identified as an area for greater development in the 2009 Review. After 2009, developments include additional questions added to the 2018 Census and GSS, as well conceptual work around a definition and framework for housing quality (published in 2019).²

Likewise, before 2009, there was no real information on homelessness, but the development of a draft definition enabled the development of experimental estimates based on the census. Based on the 2018 Census and administrative data, it is estimated that nearly 0.9 per cent of the population was experiencing severe housing deprivation in 2018. In 2020, we have a better understanding of our housing and housing needs, although a number of gaps remain.

What is the state of housing in New Zealand?

Housing in Aotearoa: 2020 brought together information based on the themes identified by the *Review of Housing Statistics 2009* (Statistics New Zealand, 2009): tenure and tenure security, affordability, habitability and suitability. We have also looked at population growth, changing household composition and other pressures upon housing – such as the conversion into holiday rentals – to look at pressures on housing.

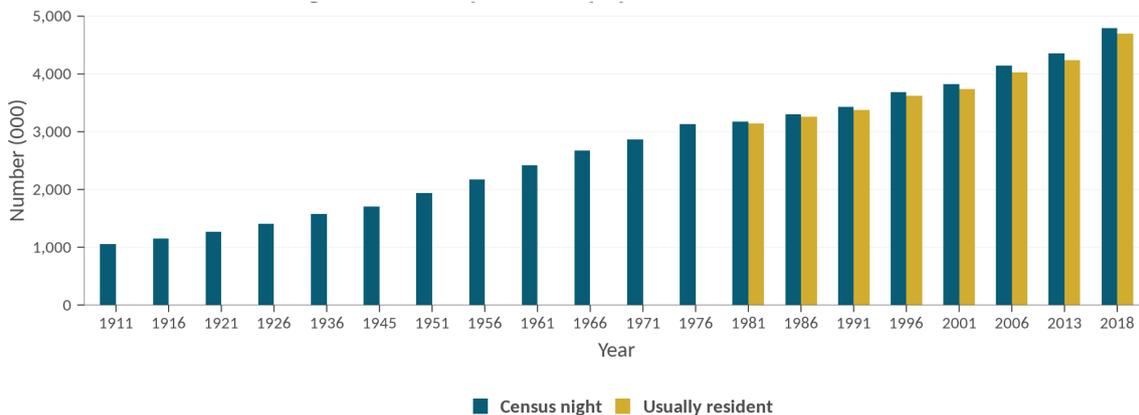
Population growth and housing supply

Between the 1981 and 2018 censuses, New Zealand grew by almost 2 million people, to reach a census usually resident population of just under 4.7 million people.³ Recently updated estimated resident population figures (where census numbers are adjusted to account for census undercount, natural increase and net migration) show a rapid increase in population between 2013 and 2018 (up by an estimated

458,000 people). As at 30 September 2020, New Zealand’s population is estimated to be over 5.1 million.

Census data shows that between 2013 and 2018, population growth was higher than growth in the number of private occupied dwellings. The number of private occupied dwellings increased on average by 1.3 per cent per year between 2013 and 2018. Figure 2 shows that, although the number of new dwellings consented has grown significantly in the last decade, the rate per capita is still much lower than in the 1970s, when New Zealand experienced a peak of house building.

Figure 1: Census night and usually resident population of New Zealand, 1911–2018



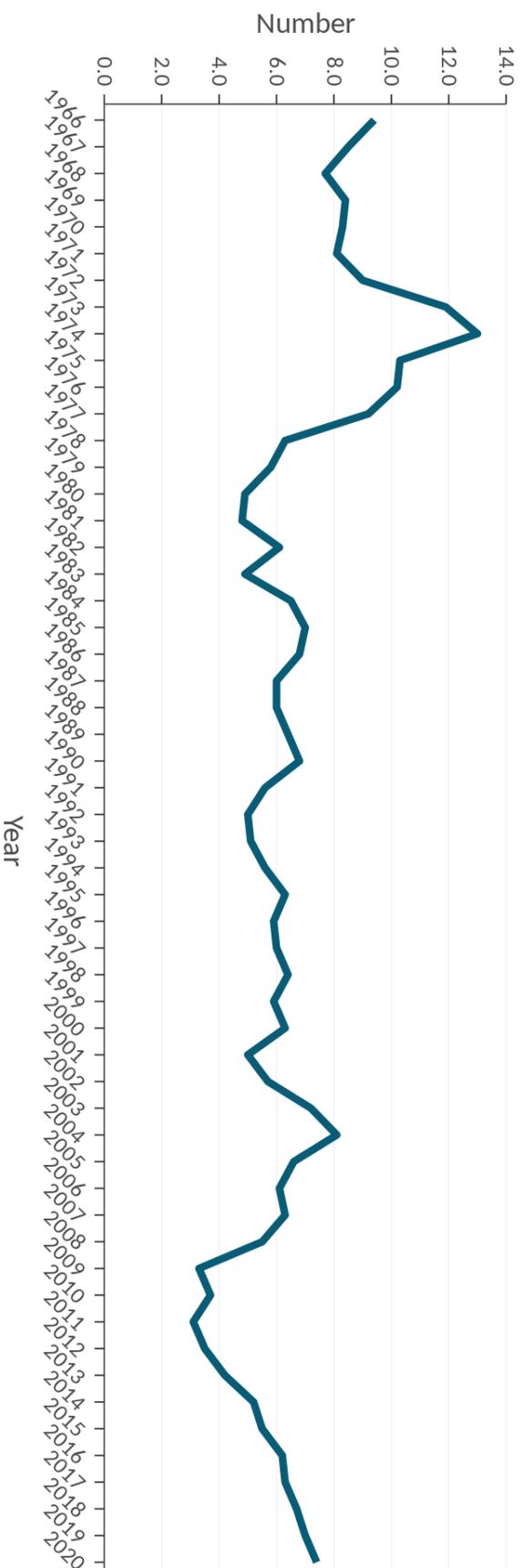
Source: Stats NZ, data from the 1911–2018 censuses.

Variations in population growth and building is reflected in different alignments between population and occupied stock across the country. The usually resident population of Auckland increased by over 150,000 people between 2013 and 2018, the equivalent of a city around the size of Hamilton. Over that same period, there were an additional 26,745 private occupied dwellings in Auckland.

Figure 3 shows that most regions added at least three times as many people as private occupied dwellings, with increases particularly high in Gisborne, Hawke’s Bay, Auckland and Northland. Tauranga added an extra 21,924 people between 2013 and 2018, but the 2018 Census only counted an additional 5,556 private occupied dwellings in the same period. The contrast between

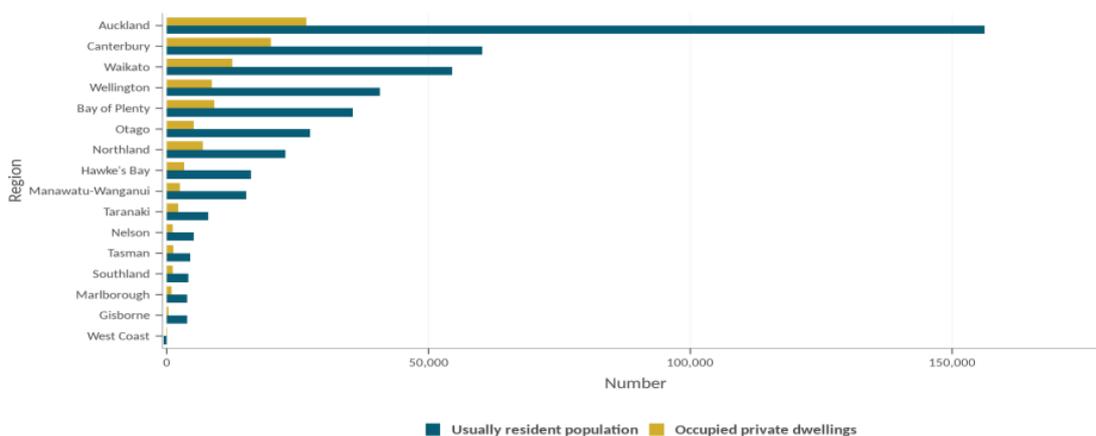
population and dwelling growth was greatest in Queenstown-Lakes district where there was a 38.7 per cent increase in the census usually resident population (an extra 10,929 people), but only a 22.6 per cent increase in private occupied dwellings (2,529). Not all New Zealanders live in private dwellings – but most do. Just under 2 per cent (around 74,600 people) were enumerated as living in a non-private dwelling at the time of the 2018 Census. Notably, unoccupied dwellings remain a feature in New Zealand.

Figure 2: Number of new residential building consents, per estimated 1000 population, year ended June 1966–2020



Source: Stats NZ, data from building consents issued statistics.

Figure 3: Numerical increase in usually resident population and occupied private dwellings, 2013-2018 censuses



Note: Private occupied dwellings are dwellings identified as occupied on census night and so are not a measure of the whole private dwelling stock. Not all New Zealanders live in private dwellings, as some may be living in institutions such as residential care for the elderly.

Source: Stats NZ, data from the 2013–2018 censuses.

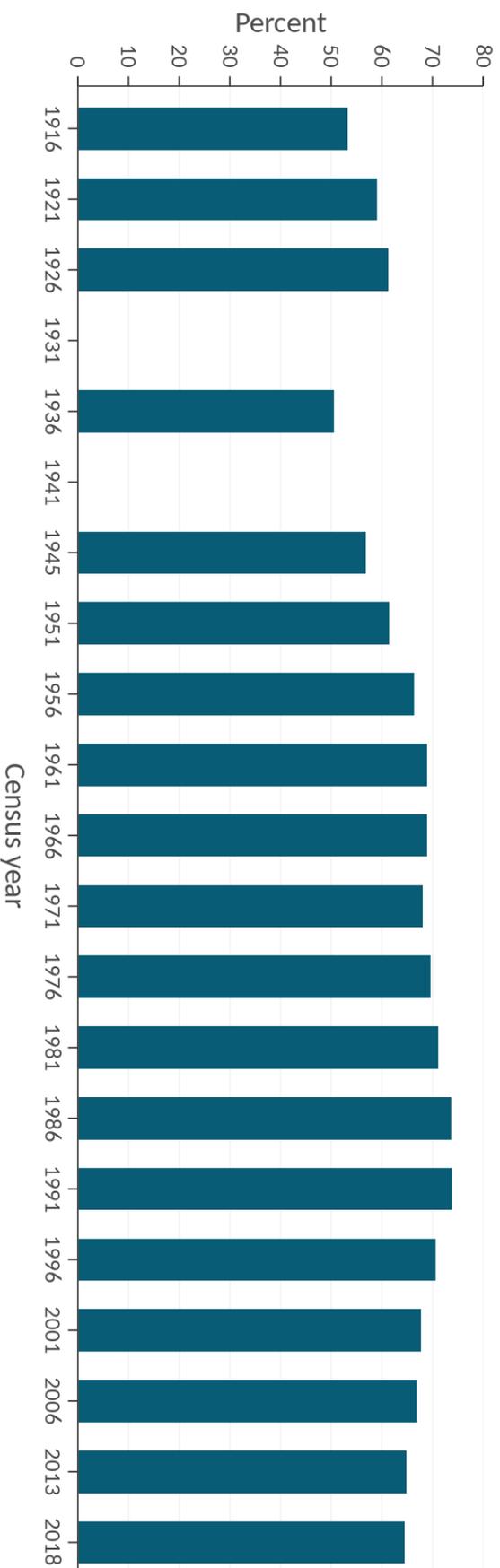
Housing tenure

Homeownership rates have fallen and are now at the lowest rate since the 1950s

Figure 4 shows that the decline in home ownership was sharpest in the 1990s.

Figure 5 shows falls in homeownership from the 1990s were greater for Māori and Pacific peoples than for people with European ethnicity. Between 2013 and 2018, rates of home ownership remained largely static. There was a small increase in the proportion of people with Māori ethnicity living in an owner-occupied housing between 2013 and 2018, but this finding should be treated with caution owing to well-documented issues around the 2018 Census, particularly for Māori and Pacific peoples. There were around 330,000 people who could not be placed in households in 2018. Almost half of these people who were not in households identified as Māori or Pacific. As a result, households with Māori or Pacific residents are under-represented in the census household data (Stats NZ, 2020d).

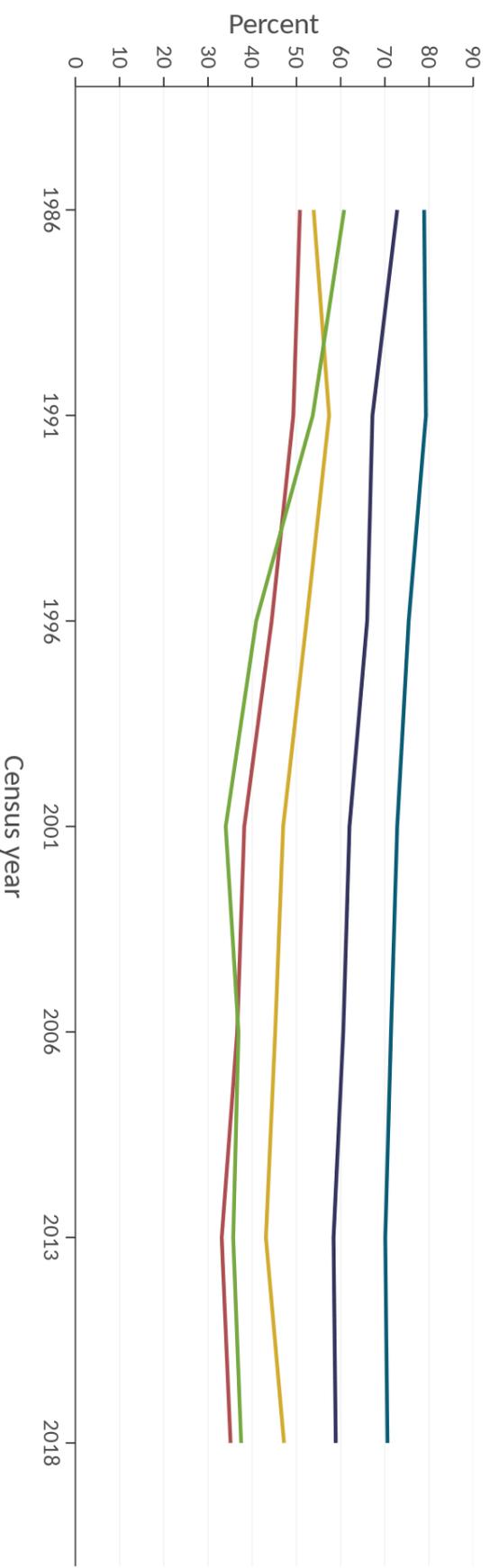
Figure 4: Proportion of households that own their own home, 1916–2018



Note: A census was not held in 1931 or 1941; the 2011 Census was delayed to 2013 because of the Canterbury earthquakes.

Source: Stats NZ, data from the 1916–2018 censuses.

Figure 5: Proportion of people living in an owner-occupied dwelling, by ethnicity, 1986–2018



Notes:

1. People with different ethnicities may be living within a single household.
2. MELAA – Middle Eastern, Latin American, African.

Source: Stats NZ, data from the 1986–2018 censuses.

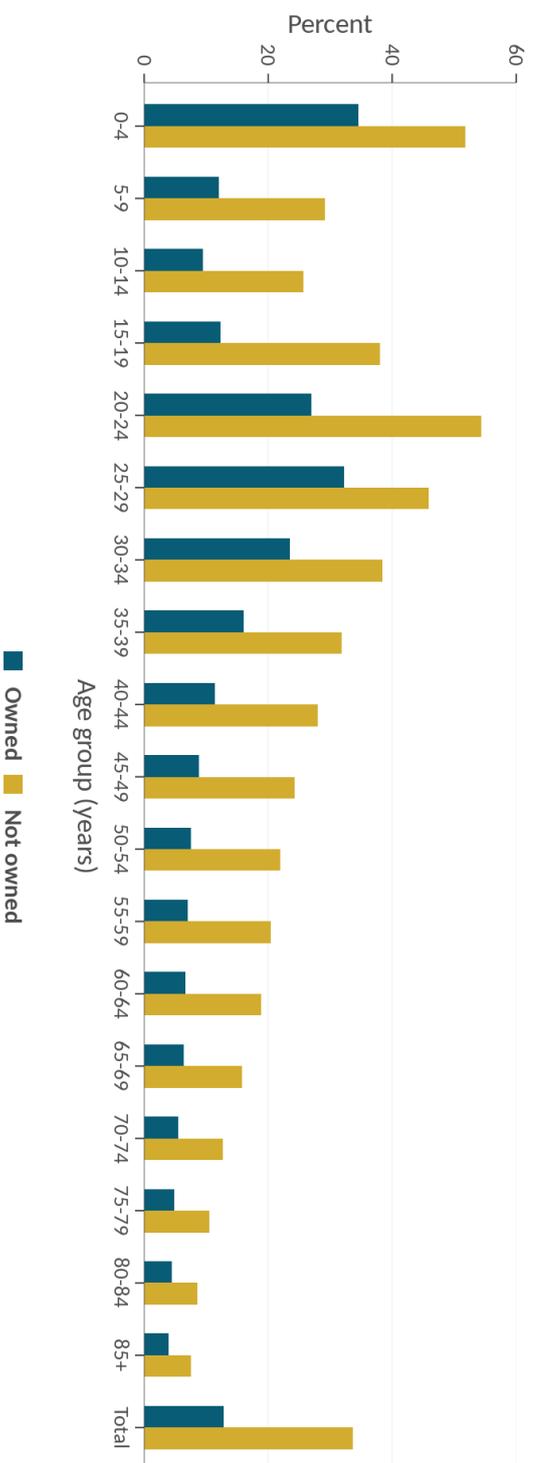
Note that the Figure 5 includes data for people with Asian, and Middle Eastern, Latin American and African ethnicity (MELAA). These are high-level groupings with diverse populations. As these populations have seen considerable change over the last few decades (Goodyear, 2009), some caution must be applied when looking at homeownership changes for these groups.

The decline in home ownership means that greater numbers of people are renting – around 1.4 million people at the time of the 2018 Census. Renting is often associated with tenure insecurity. Legally, tenure security refers to the “tenant’s right to remain in their dwelling providing certain conditions are met” (James & Saville-Smith, 2018). New Zealand’s residential tenancy market has been considered weakly regulated, with limited provision for tenure security. It is one of the few countries that allow termination without grounds (Martinet al., 2017, quoted in James & Saville-Smith, 2018), although recent changes in tenancy regulation, which came into effect in February 2021, give greater security to tenants. In particular, the new laws stipulate that landlords will not be able to end a periodic tenancy without cause by providing 90 days’ notice.

Insecure rental accommodation contributed to greater residential movement (Statistics New Zealand, 2008, 2015). Figure 6 shows that people living in non-owner-occupied housing were consistently less likely to be living at the same address as the previous year, regardless of age.

Data from the New Zealand General Social Survey also shows this pattern. People who lived in non-owner-occupied homes at the time of the survey had moved, on average, 1.9 times in the previous five years, compared with an average of 0.7 home moves for owner-occupiers. For every age group, owner-occupiers reported fewer moves, on average, than non-owner-occupiers.

Figure 6: Proportion of people not living at the same usual residence as a year ago, by tenure of house and age group, 2018



Note:

Excludes people who were overseas 1 year ago, not born, or who had no fixed abode.

Source:

Stats NZ, data from the 2018 Census.

Frequent moves can be detrimental to health and well-being (Howden-Chapman & Wilson, 1999). Research from the Growing Up in New Zealand study (Morton et al., 2014) found that between birth and nine months, “children born into families residing in private rental accommodation were the most likely to have experienced early [residential] mobility, with nearly 1 in 2 (49 per cent) having moved at least once, compared to fewer than 1 in 5 experiencing mobility if their families were homeowners”.

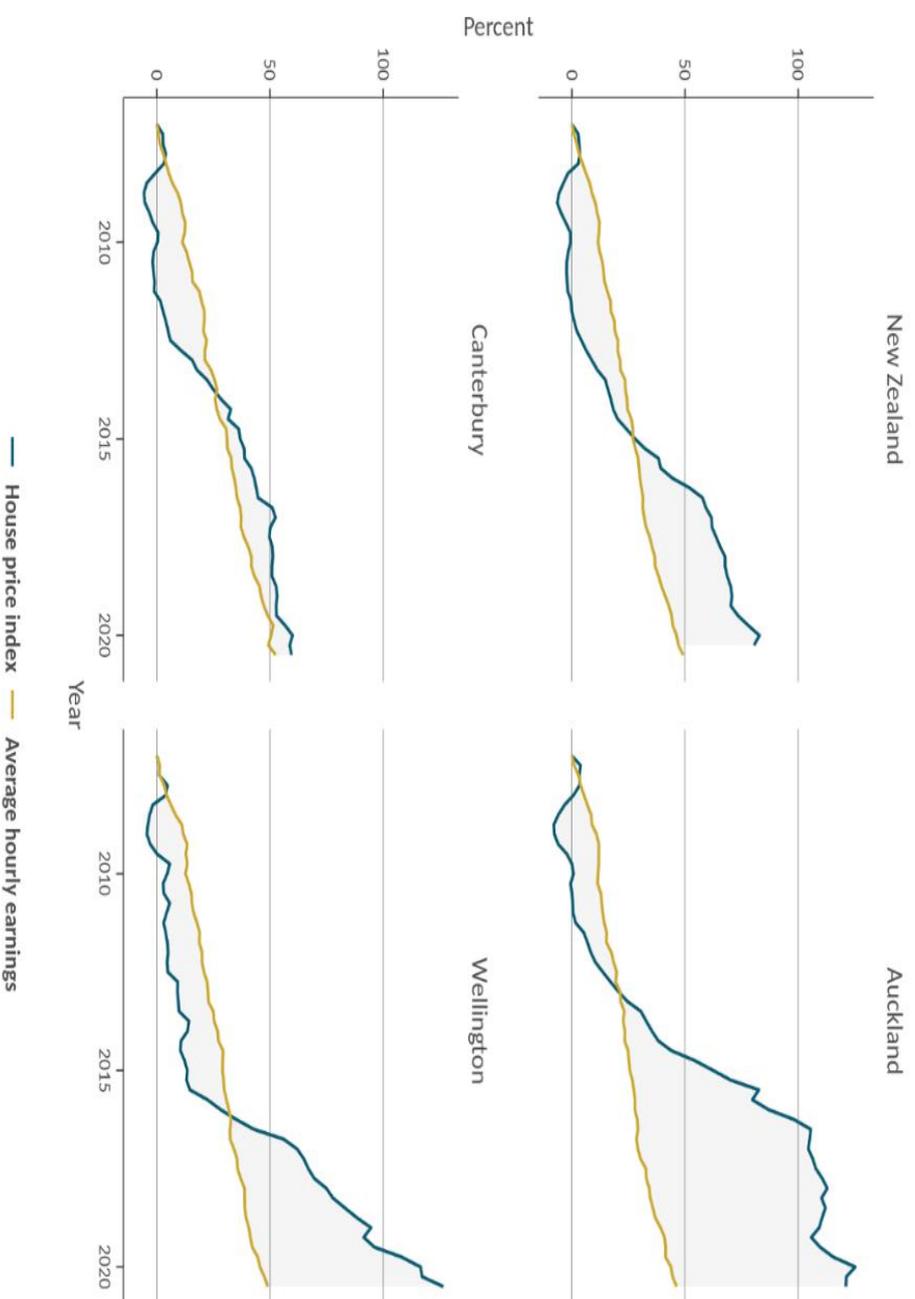
Fall in home ownership rates contributes to wealth inequality

While researchers have noted that this disparity in home ownership may exacerbate cleavages between older and younger generations (Fuller et al., 2019), it also may act to increase inequality among ethnic groups. Property is important for wealth accumulation; New Zealand owner-occupiers (who own or partly own their home) are typically 14 times wealthier than non-homeowners (Stats NZ, 2018). In 2018, owner-occupied households had a median net worth of \$558,000, compared with \$39,000 for non-owner-occupiers. Rapidly rising house prices between 2015 and 2019 mean that owner-occupiers and property investors have benefitted. Household net worth statistics (Stats NZ, 2018) showed that between June 2015 and 2018, the median property assets for people’s homes rose by almost \$100,000 (from \$350,000 to \$448,000).

Housing affordability

Using an index to control for changes in stock, Figure 7 shows that house prices have been rising at a faster rate than wages both nationally, and in Auckland and Wellington, over the past 5 years.

Figure 7: Cumulative house price inflation compared with increase in average hourly earnings, by selected regions, March quarter 2007–September quarter 2020



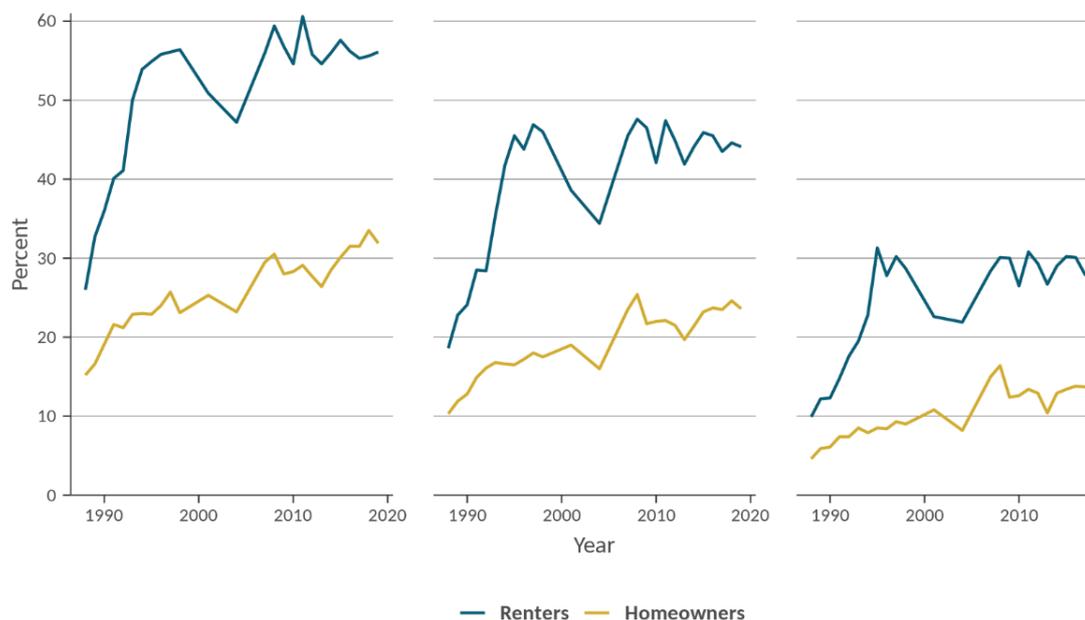
Sources: Stats NZ, data from quarterly employment survey; Ministry of Housing and Urban Development, regional property prices indexes; Corelogic, RBNZ, New Zealand house price index.

Auckland's property prices noticeably started to increase in 2013, with Wellington following suit in 2016. In contrast, Canterbury's house prices have broadly tracked wages since 2015, following the completion of most of the residential rebuild. The Auckland median sales price in mid-2020 was about \$900,000, compared with a median household disposable income of \$78,500 (for the year to June 2019). This means house prices in Auckland are about 11.5 times the household incomes. It would take a household that can save 20 per cent of their income about 11.5 years to save a 20 per cent deposit. In contrast, the Wellington median sales price in mid-2020 was about \$700,000, and median income about \$73,800 (for the same time periods), meaning house prices there are about 9.5 times the median income. In Canterbury, the median sales price was about \$490,000, around seven times the median income at about \$70,300.

The more a household spends on housing through mortgage payments or rents, the less is available for other expenditure. It also makes it more difficult to save for a deposit. Those spending above the chosen threshold may be described as having a housing cost 'overburden' (Barker, 2019). Moreover, households with low residual income after housing costs are at risk of experiencing relative poverty. Housing costs can therefore have a big impact on poverty rates. Those who are classified as below a given poverty threshold only after housing costs are taken into account are considered to experience 'housing-costs-induced poverty' (Tunstall et al., 2013).

Figure 8 shows the proportion of households with housing-costs-to-income ratios greater than 25 per cent, 30 per cent, and 40 per cent, for the period 1988–2019, by household tenure. At each of the thresholds considered, the proportion of renters is higher than owner-occupiers. The proportion of renters spending more than 30 per cent of income on housing costs increased from less than 20 per cent of renters in 1988 to about 45 per cent a decade later, before partially falling again in the early 2000s. Taking the sampling error

Figure 8: Proportion of households by housing costs to income ratio, by tenure, year ended June 1988–2019



Source: Stats NZ, data from Household Economic Survey, 1988–2019.

into account, trends are broadly flat over the period from 2007 to 2019.

When people were asked to self-rate the affordability of their housing in the 2018 GSS, sole parents reported the highest rate of unaffordable housing (defined as an affordability rating of 0–3 out of 10). Recent migrants, Māori, Pacific peoples, low-income earners, non-owner-occupiers, Aucklanders, the unemployed, disabled people, and those with no qualifications also reported high rates of unaffordable housing.

Most comprehensive picture of housing habitability

Poor housing conditions are one of the mechanisms through which social and environmental inequality translates into health inequality, which further affects quality of life and well-being. (World Health Organization, 2018)

Both national and international research has shown strong relationships between poor-quality housing and physical and mental health. Poor health leads to increased hospital admissions and more

absences from school and work, with implications for the economy. An evaluation of the Warm Up New Zealand: Heat Smart programme (Grimes et al., 2012) showed a 5:1 cost-benefit ratio for insulation. A study of 58,000 children in various countries showed “indoor mould exposure was consistently associated with adverse respiratory health outcomes in children” (Antova et al., 2008). Antova et al. (2008) also demonstrated a relationship between crowded living conditions and asthma. In New Zealand, Keall et al. (2012) estimated, using their Respiratory Hazard Index, that for each increase in the hazard index, there was a corresponding rise in the experience of wheezing or asthma. Cold, damp housing can result in higher seasonal mortality rates and higher incidence of both cardiovascular and respiratory disease (Barnard, quoted in Canterbury District Health Board, 2012; Healy, 2004; Howden-Chapman et al., 2009). Clark (2009) notes that damp housing affects physical health because it has the potential to increase dust mites and moulds, both of which are allergenic. Randomised control trials have found that improvements to home heating can result in benefits to child health (Howden-Chapman et al., 2008).

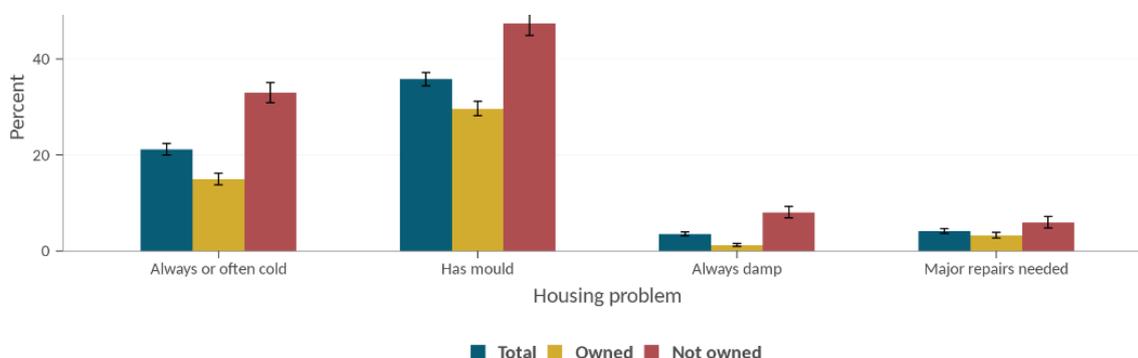
As a result of concern around the effects of poor housing on health, additional questions were added to both the census and the General Social Survey (GSS) in 2018. The 2018 Census included questions on dampness and mould, access to basic amenities, and home heating appliances for the first time; previously people had been asked what fuels were used in the dwelling. The 2018 GSS included a supplement that focused on housing and the physical environment. This included additional information around housing quality (damp, mould and cold), information on home heating, ventilation, repairs and maintenance, as well as some additional health indicators, including the number of times the person had had a flu-like illness or a cold in the last 12 months, or whether they had asthma or other chronic respiratory illnesses. A temperature measurement was also included, where agreed to by participants, providing an objective snapshot of temperatures in the homes of New

Zealanders. Additionally, Stats NZ and the Ministry of Business Innovation and Employment (MBIE) partnered with the Building Research Association of New Zealand (BRANZ) to carry out around 800 housing inspections, to provide robust objective data in addition to the subjective housing quality questions in the GSS. The results of the Pilot Housing Survey are discussed by White et al. (pages 107–144 in this issue of the *NZPR*).

The evidence from a range of sources, the Census, the GSS, and the Pilot Housing Survey, creates a consistent picture of disparities in housing between rented and owned dwellings, and between ethnic groups. Figure 9 shows self-reported housing problems in the GSS by tenure, which indicates that housing that was not owner-occupied was more likely to be often or always cold, always damp, to have mould, and to need major repairs.

The 2018 Census showed that Māori and Pacific peoples were more likely to live in homes affected by dampness or mould than other ethnic groups. More than two in five Māori and Pacific peoples lived in damp housing (40.3 per cent and 45.9 per cent, respectively), compared with 21.3 per cent of people of European ethnicity, and 22.5 per cent of people of Asian ethnicity. Pacific peoples were also the most likely to live in homes with visible mould over A4 size at least some of the time, at 41.8 per cent, compared with 33.0 per cent

Figure 9: Proportion of dwellings, by selected housing problems and tenure, 2018



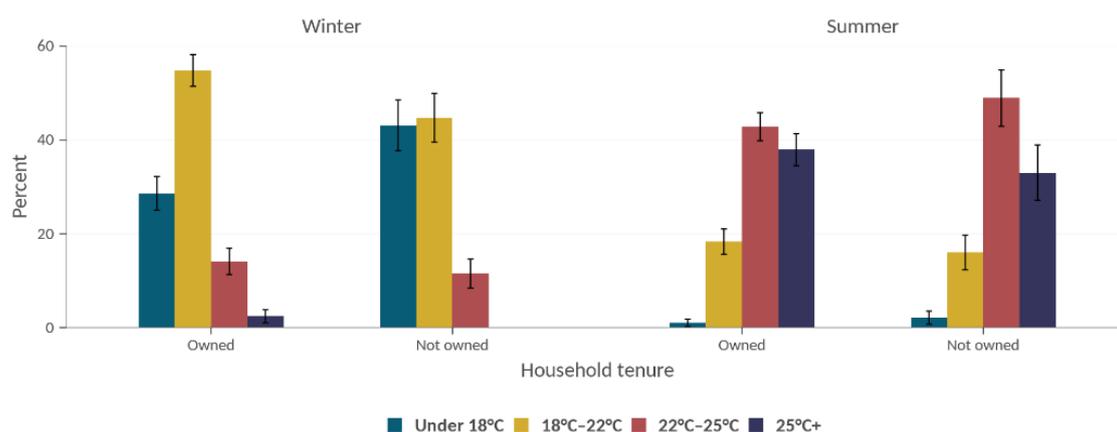
Note: Error bars represent variability in estimates.

Source: Stats NZ, data from the General Social Survey 2018.

of Māori and 16.7 per cent of Europeans (see Stats NZ (2020c) for more information).

Around one in five people in the GSS said that their house was always or often cold, and around that number could see their breath inside in winter. This rose to around one in three for renters. Alongside subjective measures of cold, 2018 GSS respondents were also asked for permission to take an on-the-spot temperature reading. This took place in approximately 6700 homes (see Stats NZ (2020c) for more information). In winter, 33 per cent of the temperature readings were under the minimum 18 °C recommended by the World Health Organization’s (2018) *Housing and health guidelines*. Figure 10 shows that dwellings that were not owner-occupied were much more likely to record winter temperatures below 18 °C. Over a third of houses in summer (36.2 per cent) were over 25 °C (Stats NZ, 2020b). BRANZ’s Household Energy End User Project (HEEP) study rated 20–25 °C as a comfortable indoor temperature (Isaacs et al., 2006).

Figure 10: Proportion of dwellings, by temperature inside in winter and summer, and household tenure, 2018



Note: Error bars represent variability in estimates.

Source: Stats NZ, data from the General Social Survey 2018.

Most New Zealand households have good access to basic amenities

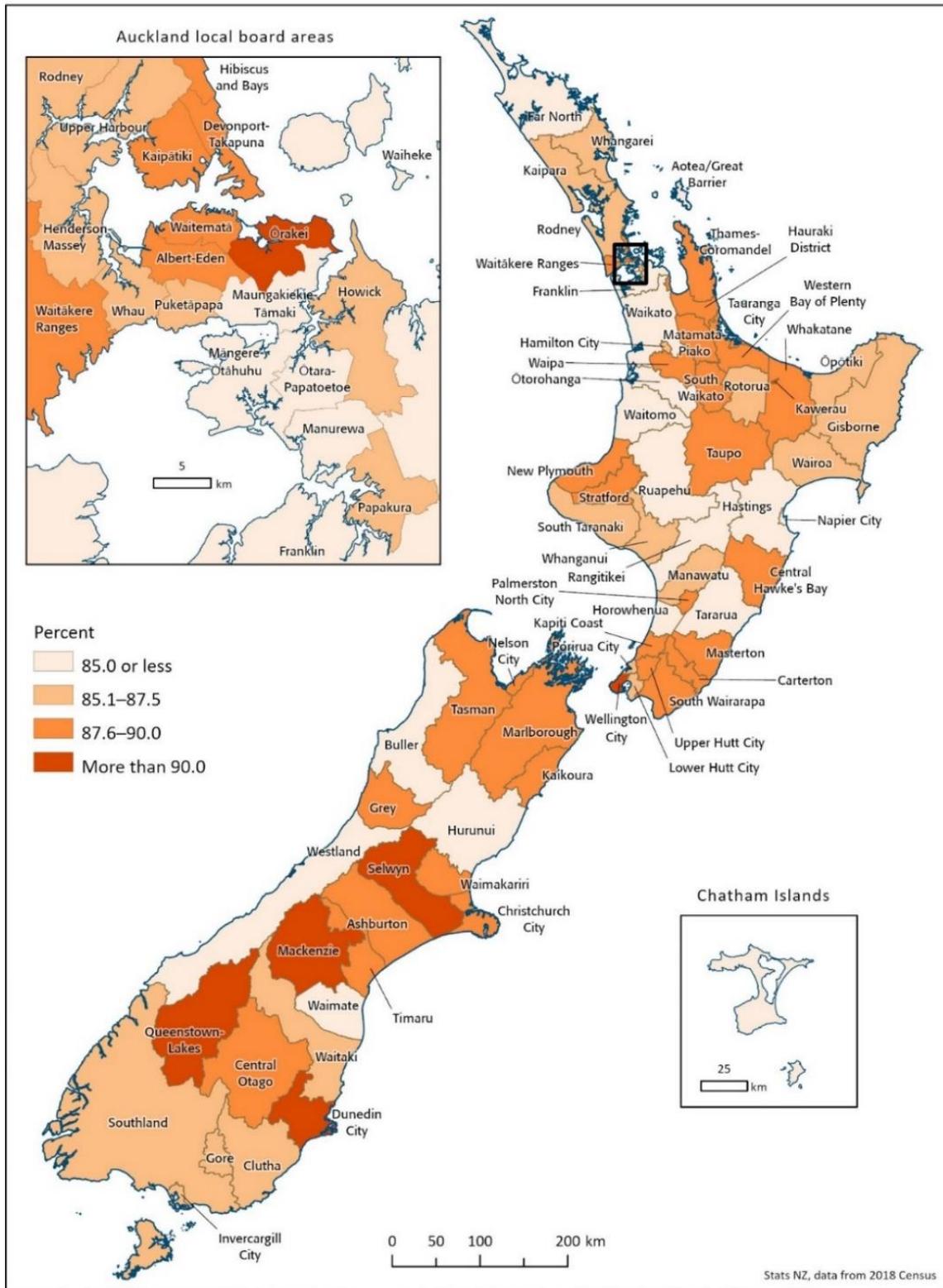
In the 2018 Census, respondents were asked about access to seven basic amenities inside their dwelling: cooking facilities, tap water that is safe to drink, kitchen sink, refrigerator, bath or shower, toilet, and electricity supply. These amenities had to be in working order to be counted. Ninety-three per cent of all households (1,414,590) said they had access to the seven basic amenities, and fewer than 6000 households (5844 households) had no access to any basic amenities. However, there was considerable difference by tenure, with only 87.2 per cent of households that did not own their dwelling having access to all seven basic amenities, compared with 95.9 per cent of owner-occupied households.

For those households that were not owner-occupied, having access to all seven basic amenities was least likely in Hawke's Bay, West Coast, Manawatū -Whanganui and Gisborne regions.

Nationally, the two amenities most likely to be missing were tap water that was safe to drink and a refrigerator – on average, around 97 per cent of households had access to these amenities. Households that did not own their dwelling were less likely to have access – just 92.3 per cent had a refrigerator and 95.0 per cent had tap water that was safe to drink. Access to tap water that was safe to drink was lowest for non-owner-occupied households in Buller, Ruapehu and Hastings districts (at 83.8, 87.1, and 88.3 per cent, respectively).

However, less than 90 per cent of non-owner-occupied households had access to all seven basic amenities in every region. Figure 11 maps the proportion of non-owner-occupied households that that access to all seven basic amenities. Access was lowest in South Auckland local board areas and some of New Zealand's more rural districts, such as Far North and Westland Districts.

Figure 11: Proportion of non-owner-occupied households with access to all seven basic amenities, 2018



Note: Basic amenities measured are cooking facilities, tap water that is safe to drink, kitchen sink, refrigerator, bath or shower, toilet and electricity supply.

Source: Stats NZ, data from the 2018 Census.

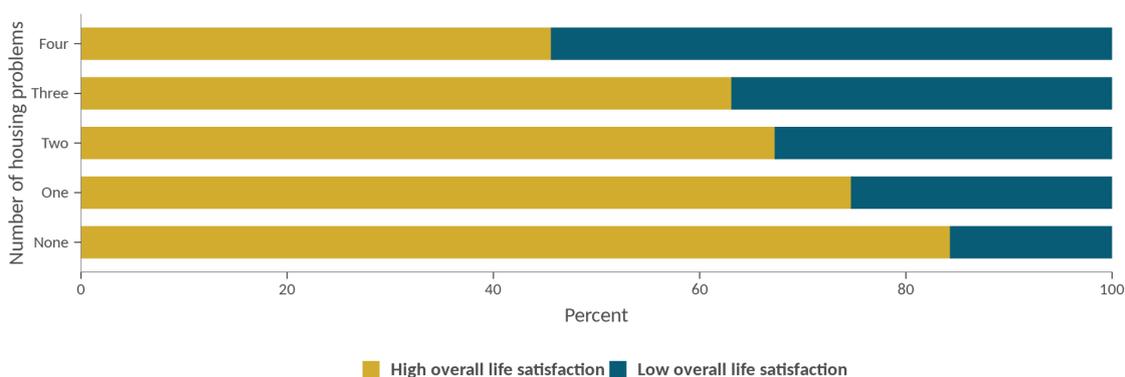
Housing problems associated with poorer health and well-being

Four key housing problems were measured in the 2018 GSS – living in a home that: (1) was always damp, (2) was always or often too cold, (3) had mould that was always larger than an A4 sheet of paper, and (4) required major repairs or maintenance. The four measures appear to have a strong relationship with overall life satisfaction.

Figure 12 shows that self-rated overall life satisfaction was lower for those with multiple housing problems, and higher for those with fewer housing problems. For people who reported four key housing quality problems, just over half (54.3 per cent) rated their overall life satisfaction as 6 or below (on a 0–10 scale). For those with no key housing quality problems, 84.4 per cent rated their overall life satisfaction as 7 or more out of 10.

Housing suitability also has an impact on people’s well-being. GSS data show that people who thought their housing was unsuitable or very unsuitable rated their life satisfaction worse, on average, than those with suitable or very suitable housing (see Figure 13). When we looked at different population groups, people in crowded households

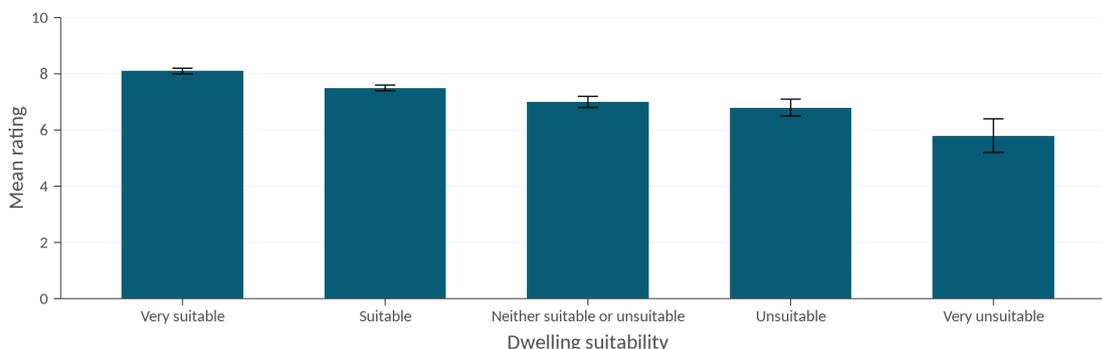
Figure 12: Proportion of people reporting high (7–10) and low (0–6) life satisfaction, by number of housing problems reported, 2018



Note: Four key aspects of housing quality were measured – the dwelling: (1) is always damp, (2) is always or often too cold, (3) had mould that was always larger than an A4 sheet of paper, and (4) required major repairs or maintenance.

Source: Stats NZ, data from the General Social Survey 2018.

Figure 13: Proportion of people, by mean (average) overall life satisfaction rating and suitability of dwelling, 2018



Note: Error bars represent variability in estimates.

Source: Stats NZ, data from the General Social Survey 2018.

were the least likely to rate their house as suitable, with just under a quarter rating it as very suitable compared with 44 per cent of the total population aged 15 and over.

Precarious housing and crowding

The World Health Organization (2018) notes that “Crowding is considered to be stressful to health and well-being across different cultures and aspects of life in low-, middle- and high-income countries”. According to the 2018 Census, household size in New Zealand ranges from 1 (for one-person households) to an average of 9.0 people for three-or-more-family households. Housing of different sizes is needed to cater for the variety of households. Crowding may reflect young people living at home longer.

Nearly 6 per cent of New Zealand households are crowded

Crowding has been measured using the Canadian National Occupancy Standard (CNOS) since the 1986 Census, the first time all the necessary variables for calculating the index were available. In the 2018 Census, 5.7 per cent of households were crowded. Of these, 65,540 required one additional bedroom, and 24,620 were severely crowded, requiring two or more additional bedrooms. While this represents an increase from 2013, a change in methodology for the

2018 Census means that these proportions are only broadly comparable, and care should be taken when interpreting change over time.⁴

Almost 1 in 9 people (10.8 per cent) lived in a crowded household at the time of the 2018 Census. Figure 14 shows that the percentage of people living in crowded households fell through the 1980s and 1990s but has remained largely static since the turn of the century. While rates have fallen since 1986, Pacific peoples and Māori have consistently been more likely to experience crowding than the total population. In the 2018 Census, almost 2 in 5 Pacific peoples and around 1 in 5 Māori were living in a crowded home.

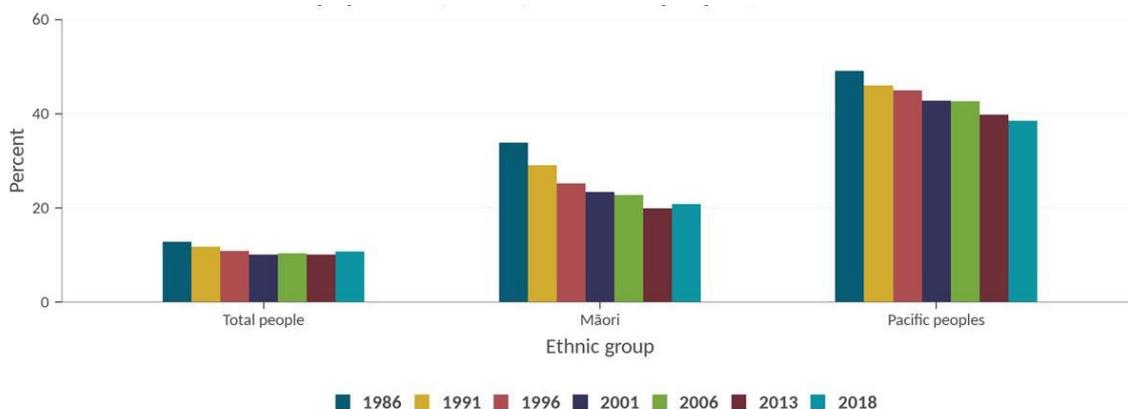
Constraints around housing, as well as affordability issues,

To be a ‘child in a family nucleus’, a person must be usually resident with at least one parent and have no partner or child(ren) of their own living in the same household.

may result in younger people taking longer to leave their parental home and set up home by themselves. To investigate this question, we looked at the role individuals in their family, and whether they were counted as a

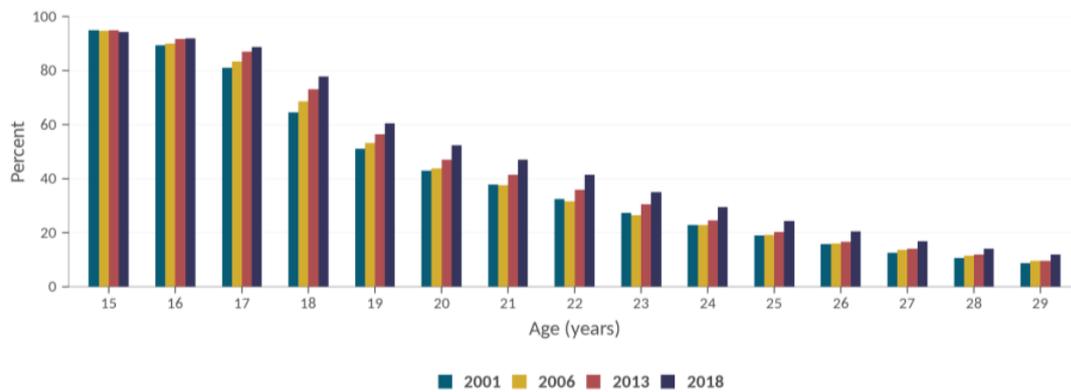
‘child in a family nucleus’.

Figure 14: Proportion of people living in crowded households, for total population, Māori, and Pacific peoples, 1986–2018



Source: Stats NZ, data from the 2001–2018 censuses.

Figure 15: Proportion of people aged 15–29 years in a ‘child’ role in a family nucleus, by age, 2001–2008



Note: To be a ‘child in a family nucleus’, a person must be usually resident with at least one parent, and have no partner or child(ren) of their own living in the same household

Source: Stats NZ, data from the 2001–2018 censuses.

Figure 15 shows that while there has been little change in the proportion of 15-year-olds and 16-year-olds living with their parent(s), the proportion of young people aged 17 years and over who still live at home has increased. For example, the proportion of people aged 18 years living with their parent(s) rose from 64.6 per cent in 2001 to 77.7 per cent in 2018.

When you don’t have a place to call home

When trying to understand the extent of homelessness in America (Cowan et al., 1988), researchers found “counting the homeless population is extremely difficult because of the lack of a clear definition of homelessness, the mobility of the population, and the cyclical nature of homelessness for many individuals”. New Zealand has made significant strides in measuring homelessness.

In 2009, Stats NZ, in conjunction with Housing New Zealand and the Ministry of Social Development, developed a definition of homelessness that was updated and formalised as the official definition of homelessness in New Zealand in 2015 (Stats NZ, 2015c).

The definition is a New Zealand adaptation of the European Observatory on Homelessness (ETHOS) framework (Stats NZ, 2015c). It recognises living situations that may not be immediately identifiable as homelessness (compared with rough sleeping), such as people who have no other option but to share someone else's accommodation temporarily, or who are living in uninhabitable housing.

Homelessness is defined by Stats NZ as:

- a living situation where people with no other options to acquire safe and secure housing are: without shelter; in temporary accommodation; sharing accommodation with a household; or living in uninhabitable housing.

New Zealand definition of homelessness: 2015 update
(Stats NZ, 2015c)

University of Otago researchers Amore et al. (2013) have developed a methodology to estimate the homeless population using census and administrative data. They first published homelessness estimates for 2001 and 2006 (Amore et al., 2013) and later updated this to include figures from the 2013 Census (Amore, 2016). In 2020, the methodology was further refined, and figures based on the 2018 Census were published, and the figures for 2013 were revised (Amore et al., 2020).

The researchers adapted the New Zealand definition of homelessness in order to operationalise it. They define severe housing deprivation, or homelessness as:

...people living in severely inadequate housing due to a lack of access to minimally adequate housing (Amore et al., 2013). This means not being able to access a private dwelling to rent or own that has all basic amenities. Housing that lacks at least two of the three core dimensions of housing adequacy – habitability, security of tenure, and privacy and control – is deemed severely inadequate.

Using the New Zealand definition of homelessness (Stats NZ, 2015c), this population is organised into three groups: 'Without shelter', 'Temporary accommodation', and 'Sharing accommodation'.

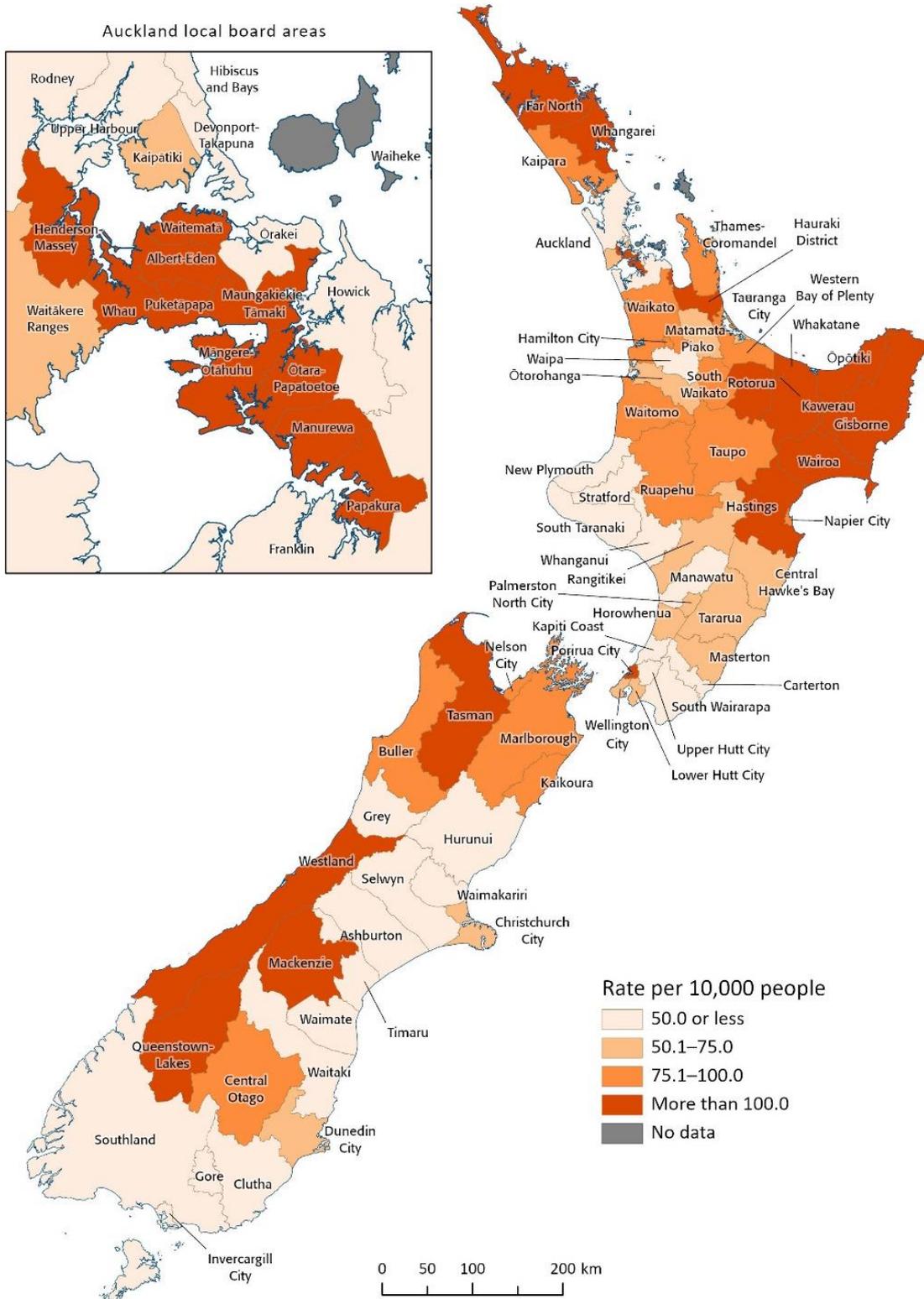
Further work is planned to use information on access to basic amenities to develop estimates of the number of people living in uninhabitable housing.

Just under one per cent of the population were severely housing-deprived in 2018 (first three categories)

On Census night 2018, some 41,724 people were identified as being severely housing-deprived, which was nearly 0.9 per cent of the population (Amore et al., 2021).⁵ However, this should be regarded as a lower limit, due to the challenges around the 2018 Census, and the inherent difficulty in counting this population. In particular, there is likely an undercount of Māori and Pacific peoples experiencing severe housing deprivation. Severe housing deprivation was more prevalent amongst the young, with almost a half of severely housing-deprived people being under 25 years old. Overall, Māori and Pacific peoples saw severe housing deprivation rates close to four and six times the European rate, respectively. The prevalence rate for Māori was 166.0 per 10,000 people and 245.5 for Pacific peoples, compared with 41.2 for people with European ethnicity.

Figure 16 shows the prevalence rate by for cities and districts within New Zealand. Kawerau, Ōpōtiki and Far North districts had high rates of severe housing deprivation at 230.9, 207.0, and 202.1 per 10,000 people, respectively. Within Auckland, Māngere-Ōtāhuhu, Ōtara-Papatoetoe, Manurewa, and Waitemata all had severe housing deprivation rates of above 200 per 10,000 people.

Figure 16: Severe housing deprivation – first three categories, rates per 10,000 people, 2018



Source: *Severe housing deprivation in Aotearoa New Zealand, 2018: June 2021 update* (Amore et al., 2021).

Housing and climate change

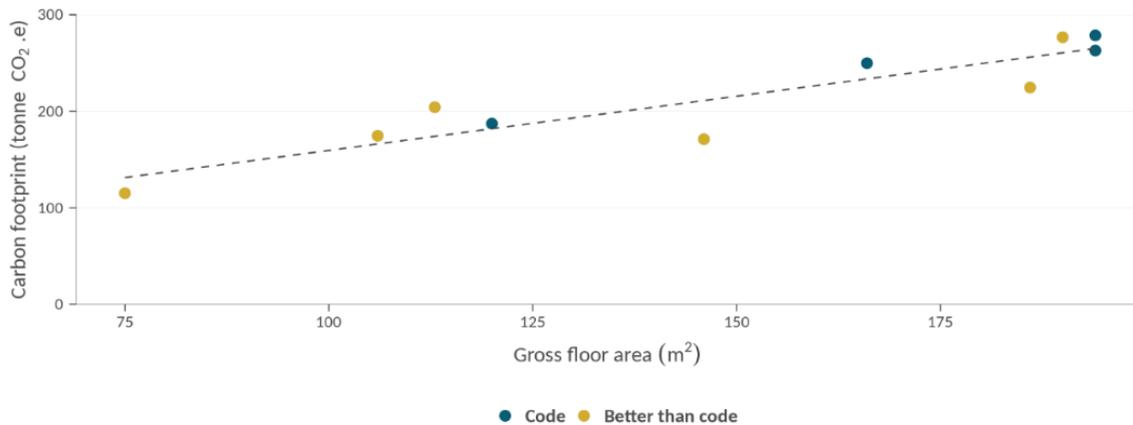
Buildings, especially housing, have an important role to play in addressing the impacts of climate change (MacGregor et al., 2018). This is because buildings are accountable for more than 40 per cent of global energy consumption and approximately 30 per cent of global greenhouse gas emissions worldwide (IPCC, 2007). The New Zealand construction sector is a dominant contributor to New Zealand's consumption-based greenhouse gas emissions (which takes into account greenhouse gas emissions from products and services imported into New Zealand), representing 16 per cent of total emissions (Chandrakumar, McLaren, Dowdell, et al., 2019).

Challenges caused by inadequate housing and larger house sizes

Despite opportunities to reduce greenhouse gas emissions from our housing due to the high use of timber and large proportion of renewable energy, there are a number of challenges. BRANZ has conducted studies of New Zealand's building stock since the 1990s and has found that it is largely inadequate, especially in relation to insulation, ventilation and cost-effective heating options (White & Jones, 2017). The Pilot Housing Survey reinforced these findings. This means that New Zealand households require more energy to heat (or cool) their housing to the 18 °C minimum temperature advised by the World Health Organization's *Housing and health guidelines* (2018).

A major factor influencing a building's contribution to greenhouse gas emissions is size. House size and occupancy rates are, therefore, important issues when addressing a building's environmental impact.

Within New Zealand, house sizes have progressively increased. The average house size of in the 1960s was 128 m², compared with 205 m² in 2010 (MacGregor et al., 2019). Research by Dowdell et al. (2021) highlights that larger houses have larger carbon

Figure 17: House size in relation to carbon footprint

Source: Stats NZ, data from BRANZ.

Note: CO₂.e = carbon dioxide equivalent

footprints. Figure 17 shows that this is true of code minimum as well as high-performance houses. However, this is based on an assessment by BRANZ of only 10 stand-alone houses, so care must be taken in extrapolating to all New Zealand homes.

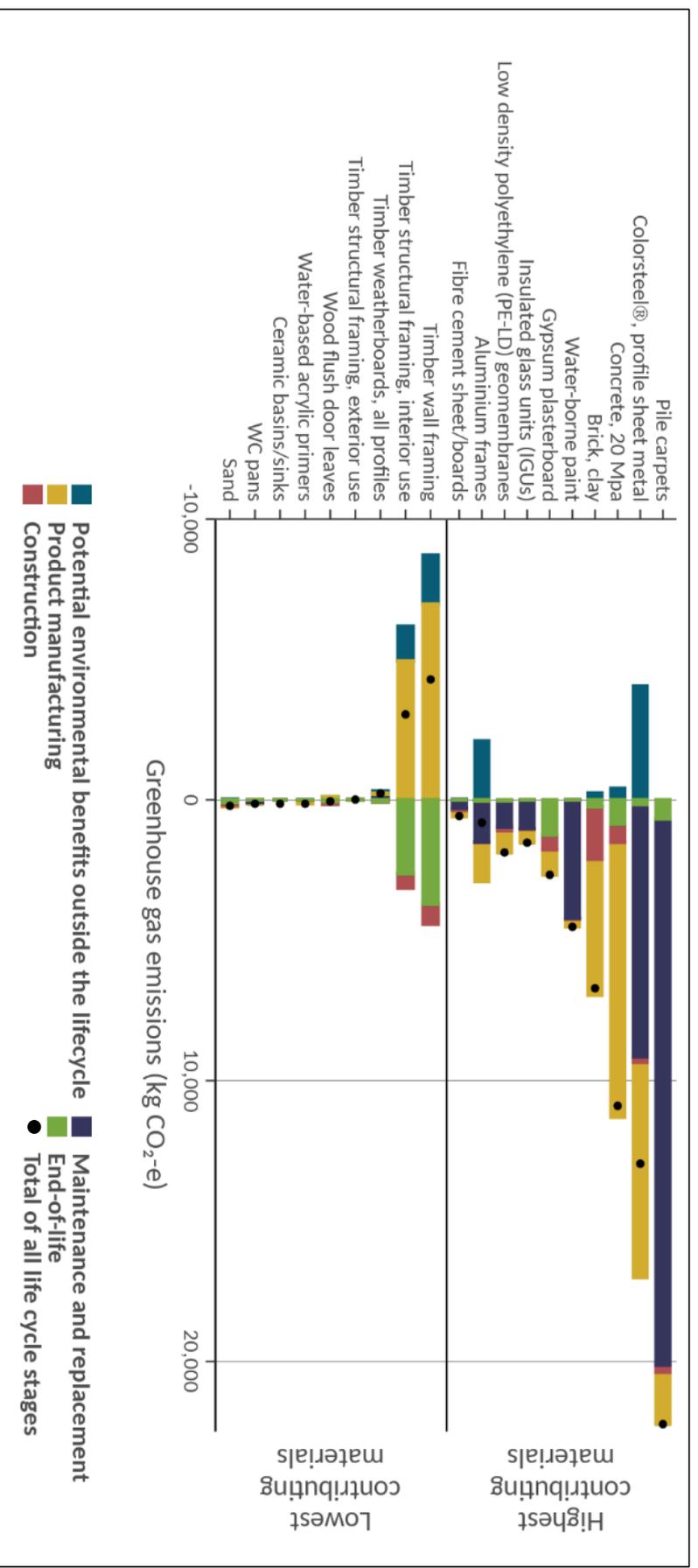
Contribution of household materials to CO₂ emissions

Figure 18 shows the materials in the house that contribute the most and least to greenhouse gas emissions over the life cycle of a house. For the purposes of this figure, timber products are assumed to be carbon neutral (that is they will not add to greenhouse gas emissions). The level of greenhouse gas emissions depends on the amount of material in the house, the emissions arising from manufacture, and how often the material is maintained or replaced during the 90-year service life.

New Zealand housing set to exceed carbon budget

There is a finite amount of greenhouse gases that humans can emit to have a reasonable chance of holding global temperature rise to no more than 1.5 °C above pre-industrial levels. Research undertaken by BRANZ and Massey University outlines that the carbon budget of a

Figure 18: Highest and lowest lifetime CO₂ contributors, by material, for a simulated case study house in Auckland



Source: Stats NZ, data from BRANZ.

198 m² stand-alone house is 35 tonnes equivalent carbon dioxide emissions (Chandrakumar, McLaren, Malik, et al., 2019; Chandrakumar et al., 2020).

BRANZ research has also found that newly contracted houses contributed 66 per cent, and newly built detached houses contributed 34 per cent of the projected climate impact for New Zealand's detached housing sector for the period 2018–2050 (Chandrakumar, McLaren, Malik et al., 2019; Chandrakumar et al., 2020). It has been estimated that, based on the current building code, and also on high performance housing (examined in the study), New Zealand housing often exceeds the building carbon budget of 35 tonnes equivalent of carbon dioxide emissions by 7 to 10 times (Dowdell et al., in press).

New Zealand's allowable carbon budget to 2050 is concentrated on existing detached houses, as they contribute 66 per cent, while newly built detached houses contributed 34 per cent of the projected climate impact for New Zealand's detached housing sector for the period 2018–2050 (Chandrakumar, McLaren, Malik et al., 2019; Chandrakumar et al., 2020).

BRANZ research suggests future house design needs to limit our carbon footprint by reducing house size, selecting lower-carbon materials, and allowing for low-carbon water and space heating. However, occupant behaviour also influences greenhouse gas emissions. For example, energy behaviours, such as the way appliances are used, can have an important impact on a building's carbon footprint. In Auckland and Wellington, almost half of the energy demand is from the use of appliances such as refrigerators. New Zealanders need to think about the way we interact and live within our houses to enable zero carbon living.

Population and diversity: Implications for housing

The growing diversity of New Zealand households suggests that there may be an increasing demand for both larger properties that accommodate extended family living, as well as smaller one- and two-

bedroom properties and dwellings more suitable for the ageing population. Smaller household size, however, does not necessarily mean that demand for smaller houses has increased markedly. Indeed, house size increased from an average of 135 m² in 1991, before peaking at 200 m² in 2010.

Although population growth will increase housing demand, a complex interplay of forces also shapes the interaction between demand and supply. Growing diversity (of people and households), an ageing population, changing needs and preferences, and the impact of climate change will affect the housing of the future. When housing is scarce or expensive, young people may stay at home longer or people will crowd in together. As building regulations improve, building materials change and dwelling intensification increases, there will be a difference in the types of homes that Kiwis live in.

Throughout this report, tenure remains one of the most significant markers of inequality in housing. People who do not own their house have less tenure security, poorer affordability and worse housing conditions. Problems with housing have an impact on well-being – both mental and physical. And a significant number of people experience very poor housing conditions, such as severe crowding, or lack a place that they can call home.

Notes

- 1 The purpose of the 2009 review was to identify the enduring research and policy needs relating to housing statistics and ascertain the extent to which housing statistics are adequate for current and prospective information needs.
- 2 These questions were developed by Stats NZ, in conjunction with the Ministry for Business, Innovation and Employment (MBIE), and the Building Research Association of New Zealand (BRANZ).
- 3 New Zealand residents counted at each census, excluding overseas visitors.
- 4 There were around 357,000 people who could not be placed into households in the 2018 data. As a result, the number of people, including

Māori and Pacific peoples, who lived in a crowded house may be undercounted.

5. Analysis by Viggers, Amore and Howden-Chapman of housing lacking basic amenities (2021), and minor method improvements have resulted in a revised version (June 2021 update) of the 2018 Severe Housing Deprivation Estimate (Amore et al., 2021). This identified a further 60,399 people as living in severe housing deprivation through uninhabitable housing, bringing the total to 102,123, or just under 2.2 per cent (217.3 per 10,000 people).

References

- Amore, K. (2016). *Severe housing deprivation in Aotearoa/New Zealand: 2001–2013*. <http://www.healthyhousing.org.nz/wp-content/uploads/2016/08/Severe-housing-deprivation-in-Aotearoa-2001-2013-1.pdf>
- Amore, K., Viggers, H., Baker, M.G., & Howden-Chapman, P. (2013). *Severe housing deprivation: The problem and its measurement* (Official Statistics Research Series, 6). Available on request from info@stats.govt.nz
- Amore, K., Viggers, H., & Howden-Chapman, P. (2021). *Severe housing deprivation in Aotearoa New Zealand, 2018*. He Kāinga Oranga / Housing & Health Research Programme Department of Public Health University of Otago, Wellington. June 2021 update: <https://www.hud.govt.nz/assets/News-and-Resources/Statistics-and-Research/2018-Severe-housing-deprivation-estimate/Severe-Housing-Deprivation-2018-Estimate-Report.pdf>
- Antova, T., Pattenden, S., Brunekreef, B., Heinrich, J., Rudnai, P., Forastiere, F., Huttmann-Gibson, H., Grize, L., Katsnelson, B., Moshhammer, H., Nikiforov, B., Slachtova, H., Slotova, K., Zlotkowska, R., & Fletcher, T. (2008). Exposure to indoor mould and children's respiratory health in the PATY study. *Journal of Epidemiological Community Health*, 62(8), 708–14. <http://dx.doi.org/10.1136/jech.2007.065896>
- Barker, A. (2019). *Improving well-being through better housing policy in New Zealand* (Economics Department Working Papers No. 1565). OECD. https://www.oecd-ilibrary.org/economics/improving-well-being-through-better-housing-policy-in-new-zealand_b82d856b-en
- Bentley, A. (2019). Homeownership in New Zealand: Trends over time and generations. Paper presented at the New Zealand Population Conference 2019, Wellington, New Zealand. June 2019.
- Canterbury District Health Board. (2012). *Housing, home heating and air quality: A public health perspective* (Briefing paper for the Canterbury District Health Board). <https://www.nelson.govt.nz/assets/Environment/Downloads/air-quality/woodburner-plan-change-2016/references/Housing-home-heating-and-air-quality-a-public-health-perpective-Canterbury-District-Health-Board-2012.pdf>

- Chandrakumar, C., McLaren, S., Dowdell, D. & Jaques, R. (2019). *A top-down approach for setting climate targets for buildings: The case of a New Zealand detached house*. Paper presented at Sustainable Built Environment D-A-CH Conference, 11–14 September, Graz, Austria.
- . (2020). A science-based approach to setting climate targets for buildings: The case of a New Zealand detached house. *Building and Environment*, *169*, 106560. <https://doi.org/10.1016/j.buildenv.2019.106560>
- Chandrakumar, C., McLaren, S., Malik, A., Ramilan, T., & Lenzen, L. (2019). Understanding New Zealand’s consumption-based greenhouse gas emissions: an application of multi-regional input-output analysis. *International Journal of Life Cycle Assessment*, *25*, 1323–1332. [https://link.springer.com/article/10.1007/s11367-019-01673-z#:~:text=1323%E2%80%931332%20\(2020\).-https%3A//doi.org/10.1007/s11367-019-01673-z,-Download%20citation](https://link.springer.com/article/10.1007/s11367-019-01673-z#:~:text=1323%E2%80%931332%20(2020).-https%3A//doi.org/10.1007/s11367-019-01673-z,-Download%20citation)
- Clark, E. J. (2009). *The Housing Quality Questionnaire: A new self-report measure for public health assessment* (PhD thesis). University of Illinois, Chicago. <http://gradworks.umi.com/> (accessed December 2014).
- Dowdell, D., MacGregor, C., Jaques, R., Berg, B. & Butler, J. (2021). The greenhouse gas emissions of stand-alone residential houses in New Zealand: Challenges and opportunities. In L. Grant, P. Howden-Chapman, & H. Viggers (Eds.), *Improving buildings, cutting carbon* (pp. 39–48). Steele Roberts Aotearoa.
- Fuller, G. W., Johnston, A., & Regan, A. (2020). Housing prices and wealth inequality in Western Europe. *West European Politics*, *43*(2), 297–320. <https://doi.org/10.1080/01402382.2018.1561054>
- Goodyear, R. K. (2009). *The differences within, diversity in age structure between and within ethnic groups*. Statistics New Zealand.
- Grimes, A., Denne, T., Howden-Chapman, P., Arnold, R., Telfar-Barnard, L., Preval, N., & Young, C. (2012). *Cost benefit analysis of the Warm Up New Zealand: Heat Smart Programme (revised)*. http://www.healthyhousing.org.nz/wp-content/uploads/2012/05/NZIF_CBA_report-Final-Revised-0612.pdf
- Healy, J. D. (2004). *Housing, fuel poverty and health: A pan-European analysis*. Ashgate Publishing.
- Howden-Chapman, P., & Wilson, N. (1999). Chapter 7: Housing and Health. In P. Howden-Chapman & M. Tobias (Eds.), *Social inequalities in health: New Zealand 1999* (pp. 133–146). Wellington: Ministry of Health. PDF [https://www.moh.govt.nz/notebook/nbbooks.nsf/0/F6338BF7171E3F904C25696D001318EE/\\$file/SIHch7.pdf](https://www.moh.govt.nz/notebook/nbbooks.nsf/0/F6338BF7171E3F904C25696D001318EE/$file/SIHch7.pdf)
- Howden-Chapman, P., Pierse, N., Nicholls, S., Gillespie-Bennet, J., Viggers, H., Cunningham, M., Phipps, R., Boulic, M., Fjällström, P., Free, S., Chapman, R., Lloyd, B., Wickens, K., Shields, D., Baker, M., Cunningham, C., Woodward, A., Bullen, C., & Crane, J. (2008). Effects of improved home heating on asthma in community dwelling children: randomised controlled trial. *BMJ*; *337*:a1411. <https://doi.org/10.1136/bmj.a1411>
- Howden-Chapman, P., Viggers, H., Chapman, R., O’Dea, D., Free S., & O’Sullivan, K. (2009). Warm homes: Drivers of the demand for heating in the

- residential sector in New Zealand. *Energy Policy*, 37(9), 3387–3399.
<https://doi.org/10.1016/j.enpol.2008.12.023>
- IPCC. (2007). *AR4 Climate change 2007: Synthesis report*. (Contribution of working groups I, II and III to the fourth assessment report of the Intergovernmental Panel on Climate Change).
<https://www.ipcc.ch/report/ar4/syr/>
- Isaacs N. P., Camilleri, M., French, L., Pollard, A., Saville-Smith, K., Fraser, R., Rossouw, P., & Jowett, J. (2006). *Energy use in New Zealand households: Report on the Year 10 Analysis for the Household Energy End-use Project (HEEP)* (BRANZ study report 155). BRANZ.
<https://www.branz.co.nz/pubs/research-reports/sr155/>
- James, B., & Saville-Smith, N. (2018). *Tenure insecurity and exclusion: Older people in New Zealand's rental market*. Paper presented to European Network of Housing Researchers Conference, Uppsala, Sweden, 27–29 June 2018.
https://www.buildingbetter.nz/publications/homes_spaces/adm/James_Saville-Smith_2018_tenure_insecurity_exclusion.pdf
- Keall, M., Crane, J., Baker, M., Wickens, K., Howden-Chapman, P., & Cunningham, M. (2012). A measure for quantifying the impact of housing quality on respiratory health: a cross-sectional study. *Journal of Environmental Health*, 11, 33. <https://doi.org/10.1186/1476-069x-11-33>
- MacGregor, C., Blackwell, S., McChesney, I., & Jaques, R. (2019). *Research and regulatory responses to the role of buildings in mitigating and adapting to climate change: A literature review*. Ministry for Business, Innovation and Employment.
- MacGregor, C., Dowdell, D., Jaques, R., Bint, L. & Berg, B. (2018). *The built environment and climate change: A review of research, challenges and the future* (BRANZ study report 403).
https://d39d3mj7qio96p.cloudfront.net/media/documents/SR403_The_built_environment_and_climate_change.pdf
- Morton, S. M. B., Atatoa Carr, P. E., Berry, S. D., Grant, C. C., Bandara, D., Mohal, J., & Tricker, PJ (2014). *Residential Mobility Report 1: Moving house in the first 1000 days* (Report 5 from Growing up in New Zealand).
<https://cdn.auckland.ac.nz/assets/growingup/research-findings-impact/report05.pdf>
- Statistics New Zealand. (1998). *New Zealand Now: Housing*.
 ———. (2008). *Family net worth in New Zealand*. Available on request from info@stats.govt.nz
 ———. (2009). *Review of housing statistics report 2009*.
<https://statsnz.contentdm.oclc.org/digital/collection/p20045coll1/id/2704/>
 ———. (2015). *New Zealand definition of homelessness: 2015 update*.
<https://www.stats.govt.nz/assets/Uploads/Retirement-of-archive-website-project-files/Methods/New-Zealand-definition-of-homelessness/nz-definition-homelessness-2015-update.pdf>
- Stats NZ (2020a). *Almost 1 in 9 people lives in a crowded household*.
<https://www.stats.govt.nz/news/almost-1-in-9-people-live-in-a-crowded-house>

- . (2020b). *Around a third of homes too cold in winter and too warm in summer*. <https://www.stats.govt.nz/news/around-a-third-of-homes-too-cold-in-winter-and-too-warm-in-summer#:~:text=warm%20in%20summer-.Around%20a%20third%20of%20homes%20too%20cold,and%20too%20warm%20in%20summer&text=Temperatures%20in%20winter%2C%20however%2C%20were,30oC%20in%20others>.
- . (2020c). *More than 2 in 5 Māori and Pacific people live in a damp house – corrected*. <https://www.stats.govt.nz/news/more-than-2-in-5-maori-and-pacific-people-live-in-a-damp-house-corrected>
- . (2020d). *Families and households in the 2018 Census: Data sources, family coding, and data quality*. <https://www.stats.govt.nz/methods/families-and-households-in-the-2018-census-data-sources-family-coding-and-data-quality>
<https://doi.org/10.1080/10511482.2006.9521564>
- Tunstall, R., Bevan, M., Bradshaw, J., Croucher, K., Duffy, S., Hunter, C., Jones, A., Rugg, J., Wallace, A., & Wilcox, S. (2013). *The links between housing and poverty: An evidence review*. Joseph Rowntree Foundation.
- Viggers, H., Amore, K., & Howden-Chapman, P. (2021). *Housing that lacks basic amenities in Aotearoa New Zealand, 2018. A supplement to the 2018 Census estimate of severe housing deprivation*. <https://www.healthyhousing.org.nz/wp-content/uploads/2021/05/Housing-that-Lacks-Basic-Amenities-in-Aotearoa-New-Zealand-2018.pdf>
- White, V., & Jones, M. (2017). *Warm, dry, healthy? Insights from the 2015 House Condition Survey on insulation, ventilation, heating and mould in New Zealand houses* (BRANZ study report 372). BRANZ. <https://www.branz.co.nz/pubs/research-reports/sr372/>
- World Health Organization (WHO). (2018). *WHO Housing and health guidelines*. <https://www.who.int/publications/i/item/9789241550376>