

ENVIRONMENT

Downloaded from <https://www.canterburywellbeing.org.nz/our-wellbeing/environment/> on 09/12/2024 2:15 AM

In the context of this domain, environment comprises the natural environment and built environment. The natural environment encompasses all living and non-living things that occur naturally. The built environment includes the form and function, aesthetic qualities, and distribution across space of all human-made physical elements. These elements include: roads, footpaths, cycle paths, railway tracks, and bridges; residential, commercial, office, and industrial buildings; and public spaces and facilities [1]. The built elements are fundamentally influenced by urban design, land use, and transportation requirements. Nearly all elements of the built environment are shaped, to some extent, by planning rules and government policy [2].

Characteristics of the environment can influence health and wellbeing in direct and indirect ways [1-3]. For example, levels of air pollution, noise, and ease of access to untransformed landscapes are all factors that can directly influence human health and wellbeing. Access to natural environments with high recreational value can buffer stress [4], and visits to public conservation areas can improve mental health and wellbeing [5]. Indirect effects can come about through environmental features that influence health behaviours (for example the availability of sport and recreational facilities can influence the community's physical activity patterns). Transport systems are also highly relevant as they impact on health and wellbeing through commuting patterns [6] and by providing access to other important services such as education, social and health care services, as well as places of employment.

Climate change impacts such as extreme weather events, higher temperatures, sea-level rise and loss of biodiversity threaten both the natural and built environment, and are already being experienced in New Zealand [7]. Climate change has direct and indirect impacts on health and wellbeing, including through mental and physical health impacts, change to livelihoods, threats to housing and infrastructure, and changes to the natural environment [7, 8].

Key trends within environment

The greater Christchurch region has undergone a period of unprecedented environmental change as a consequence of the Canterbury earthquake sequence, which began on 4 September 2010. Some of the immediate impacts on the environment included substantial damage to land; damage to and substantial losses of dwellings, commercial properties, and workplaces; considerable disruption to transport systems; and the loss of sports, recreation, cultural and leisure facilities. More than a decade on from the devastating 2010 and 2011 earthquakes, many of the rebuild projects are now complete, and the city now has a (largely complete) modern, more compact and functional central city.

Overall, a large proportion of greater Christchurch respondents to the Canterbury Wellbeing Survey is satisfied with the available community facilities, and satisfied with their access to the natural environment. Although, there has been a statistically significant decrease in satisfaction with the ease of access to suitable transport, between the 2020 and 2022 Canterbury Wellbeing Surveys (most notably in Christchurch City, as well as in Selwyn District).

Previously, the alcohol licence density in greater Christchurch was lower than for New Zealand as a whole, across the three main licence types: on-licences, off-licences, and club licences (2016). However, the alcohol licence density in Christchurch City has increased in 2019 (time series data for New Zealand overall are not yet available for this indicator). Gambling machine density reduced markedly in greater Christchurch immediately following the Canterbury earthquakes (mainly due to the loss of premises), however, the decline has flattened in recent years (unchanged since 2020), and gambling machine density in greater Christchurch is now broadly in line with the density across New Zealand overall. Further, gambling machine spending per 10,000 population aged 15 years and over decreased slightly between 2021 and 2022. Air quality is an area in which substantial improvements have been made. The number of high-pollution days (PM10 exceedances per year) has generally

decreased within the three airsheds (geographical areas) in greater Christchurch since 2008.

A question about climate change preparedness was added to the Canterbury Wellbeing Survey in 2020 and shows a relatively low proportion of respondents (16.8% across greater Christchurch) agreeing that their community is moderately or very well prepared to plan for and respond to the impacts of climate change in 2022.

Key equity issues within environment

While many indicators within environment relate to geographical areas, rather than to people, a number of inequities are highlighted by Canterbury Wellbeing Survey data. Survey data show those with a long-term health condition or disability to be statistically significantly less satisfied with their ease of access to suitable transport and ease of access to the natural environment, at the available time-points (2017–2022).

Satisfaction with ease of access to transport, and ease of access to the natural environment, both show a weak gradient by income, with the difference between the lowest income (<\$30,000 household income) and highest income (\$100,000+ household income) groups being statistically significant for access to the natural environment from 2017 to 2022, and for access to transport in 2017, 2019, and 2022).

Perception of preparedness for climate change impacts varies notably by age, with a statistically significantly lower proportion of respondents agreeing that their community is moderately or very well prepared for each of the three younger age groups (18–24, 25–34, and 35–49 years) compared to the two oldest age groups (65–74 and 75+ years), in 2020 and 2022.

What this means for wellbeing

The environmental damage caused by the Canterbury earthquake sequence continues to diminish, with the pattern of change observed across many of the indicators in this domain being one of steady improvement. There are high levels of satisfaction across the measures of satisfaction with local community facilities, ease of access to transport, and ease of access to the natural environment. Other environment indicators - such as falling gambling machine density - have positive implications for wellbeing, as does improved air quality. However, perception of a lack of community preparedness for climate change impacts raises concerns about future wellbeing impacts.

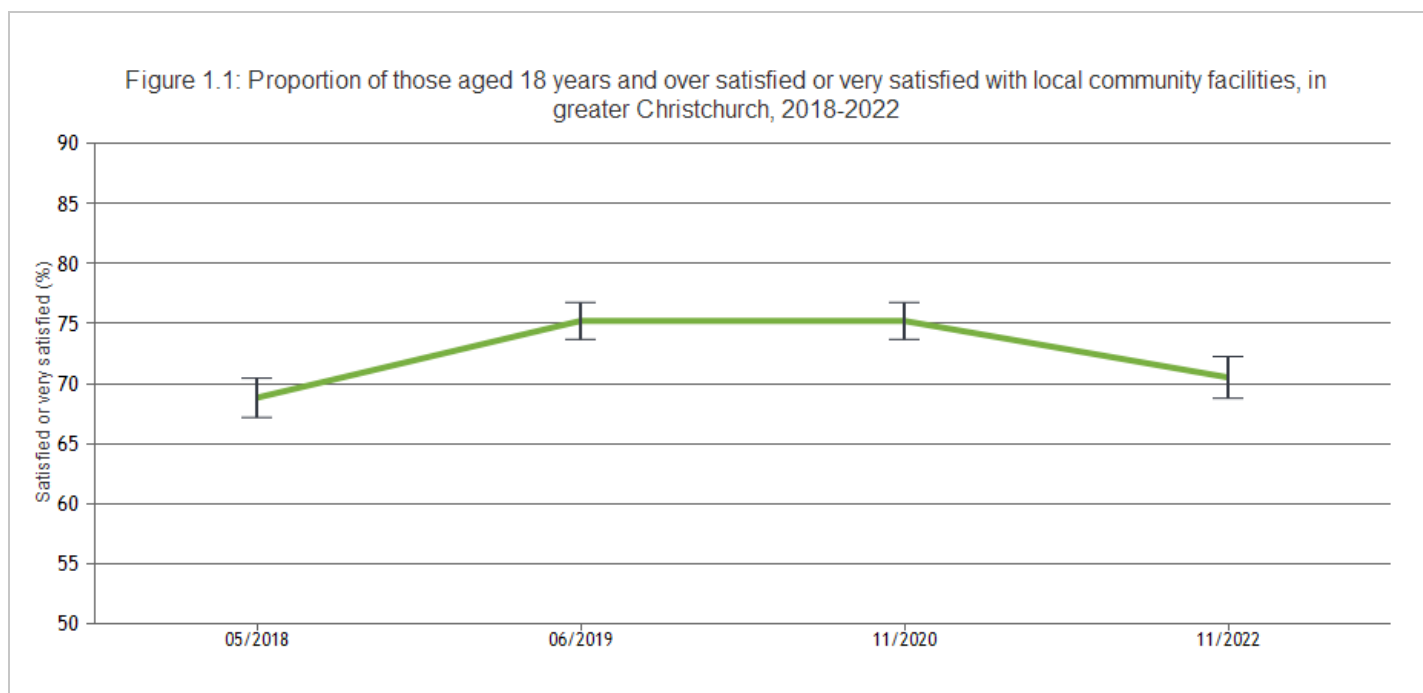
Indicators in this domain

- **Community facilities**
- **Access to transport**
- **Alcohol licences**
- **Gambling machines**
- **Access to natural environment**
- **Air quality**
- **Climate change preparedness**

COMMUNITY FACILITIES

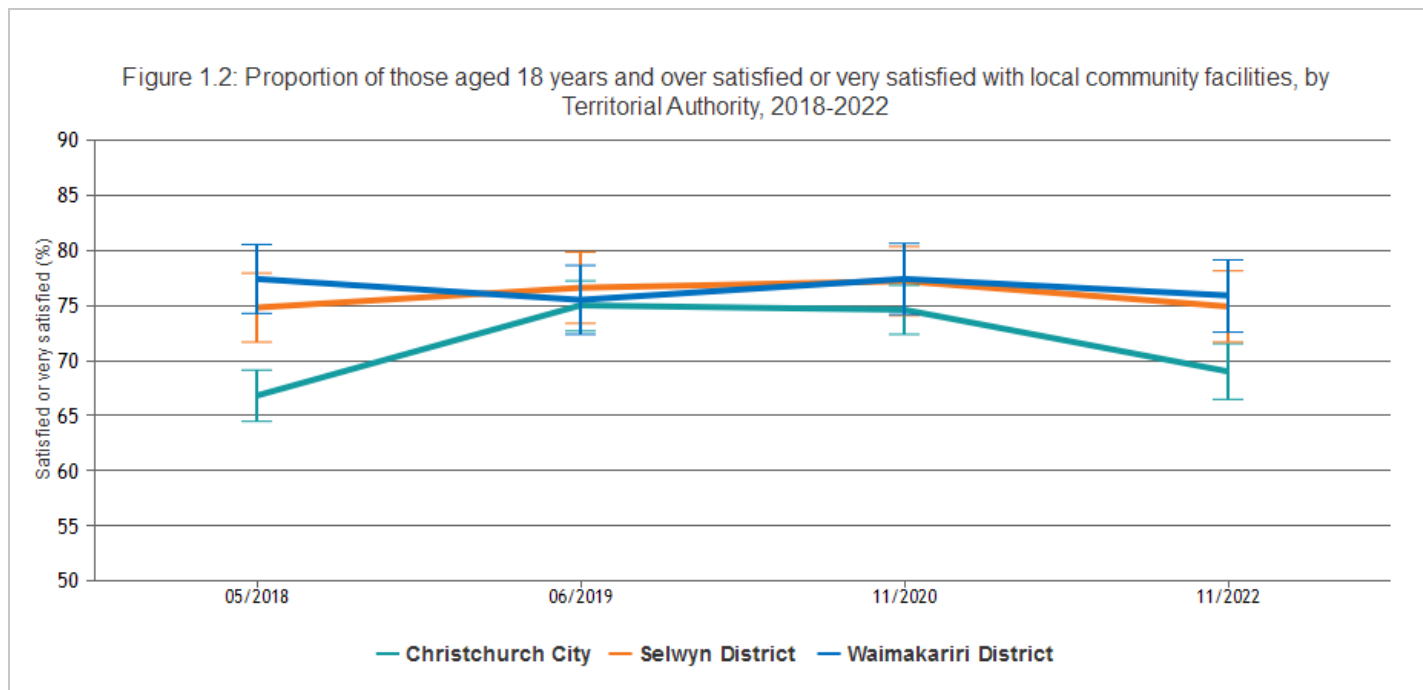
A number of questions included in the Canterbury Wellbeing Survey ask respondents about their satisfaction with various aspects of their everyday life. One of these questions asks survey respondents to rate their satisfaction with local community facilities.

This indicator presents the proportion of those 18 years and over satisfied or very satisfied with local community facilities, using Canterbury Wellbeing Survey data from 2018 to 2022.



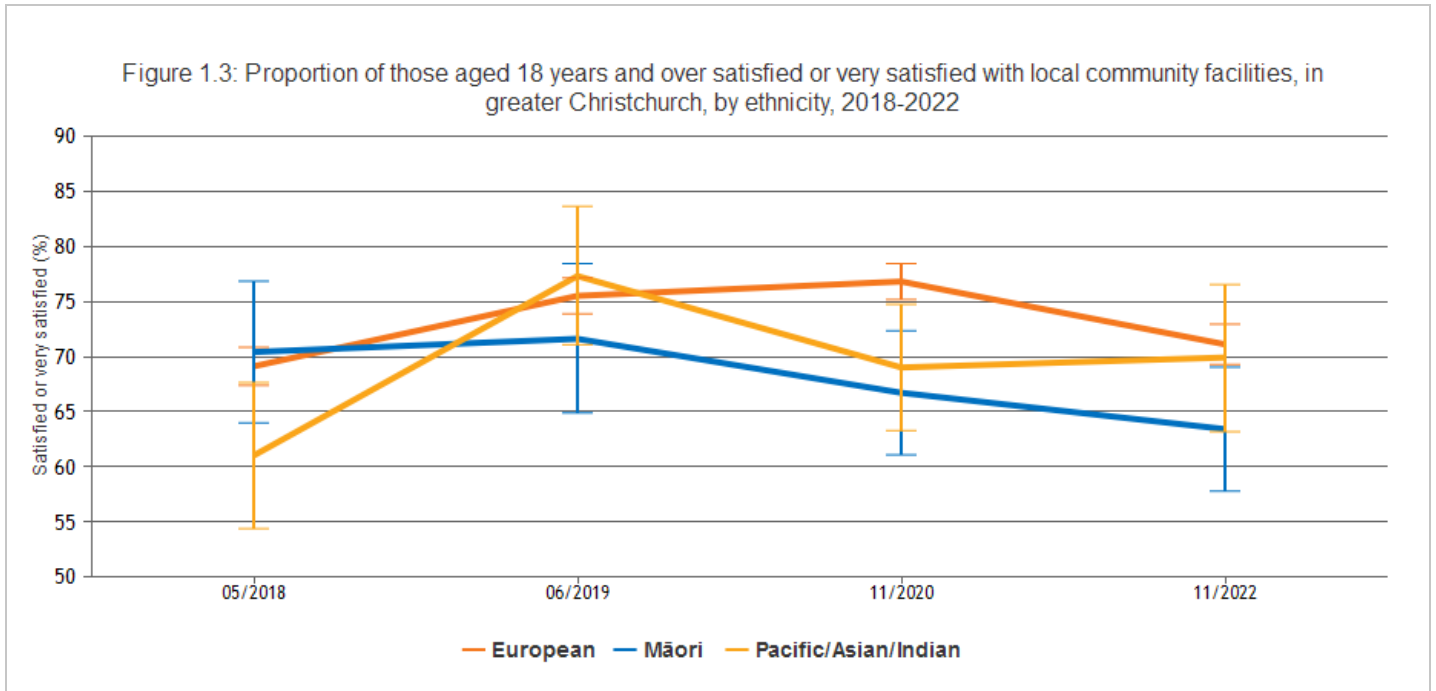
The figure shows that in both 2019 and 2020, 75.2 percent of all respondents to the Canterbury Wellbeing Survey indicated that they were satisfied or very satisfied with local community facilities. This proportion then decreased to 70.5% in 2022. This decrease of nearly 1 percentage point is statistically significant.

Breakdown by Territorial Authority



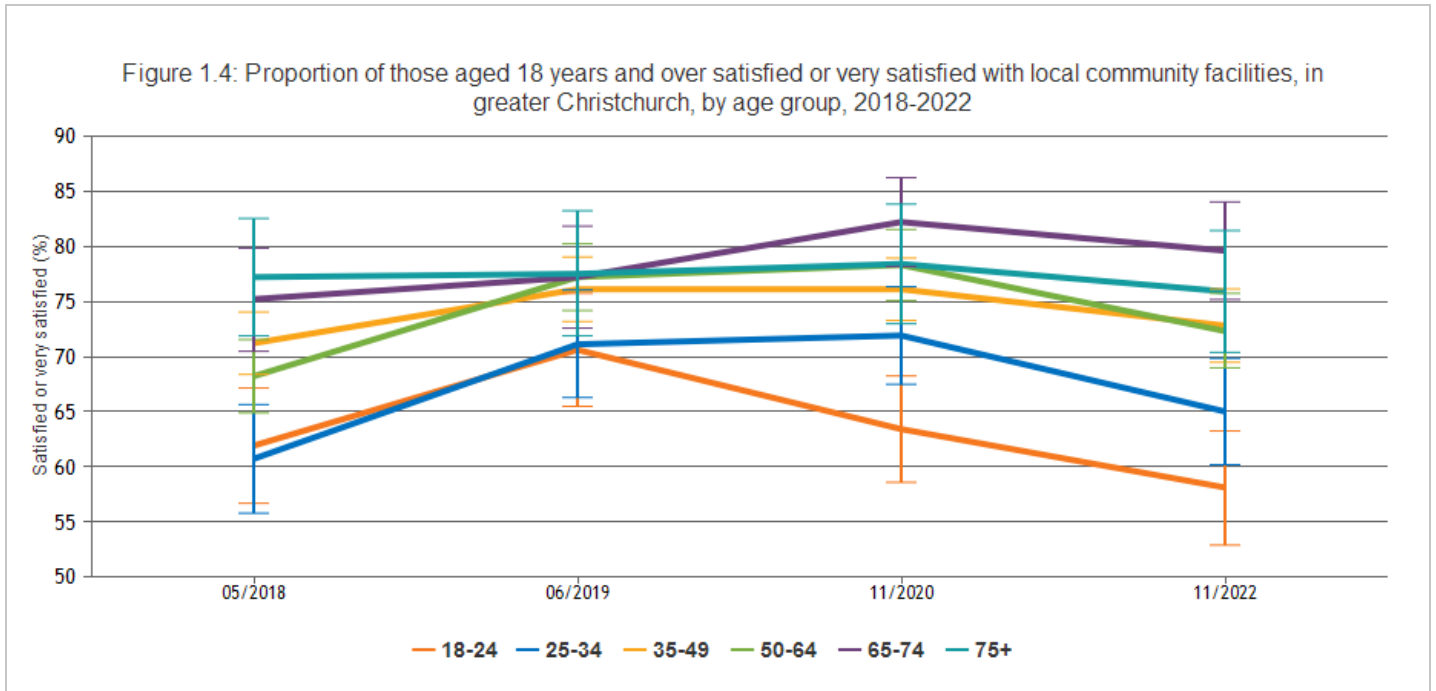
The figure shows that the levels of satisfaction with local community facilities in Waimakariri District, Selwyn District, and Christchurch City were similar in 2019 and 2020 (77.4%, 77.2%, and 74.6% respectively, 2020). However, the 2022 results show decreased satisfaction levels for Christchurch City, with levels of satisfaction with community facilities now statistically significantly lower in Christchurch City compared with Selwyn District and lower than Waimakariri District (although not statistically significantly lower).

Breakdown by ethnicity



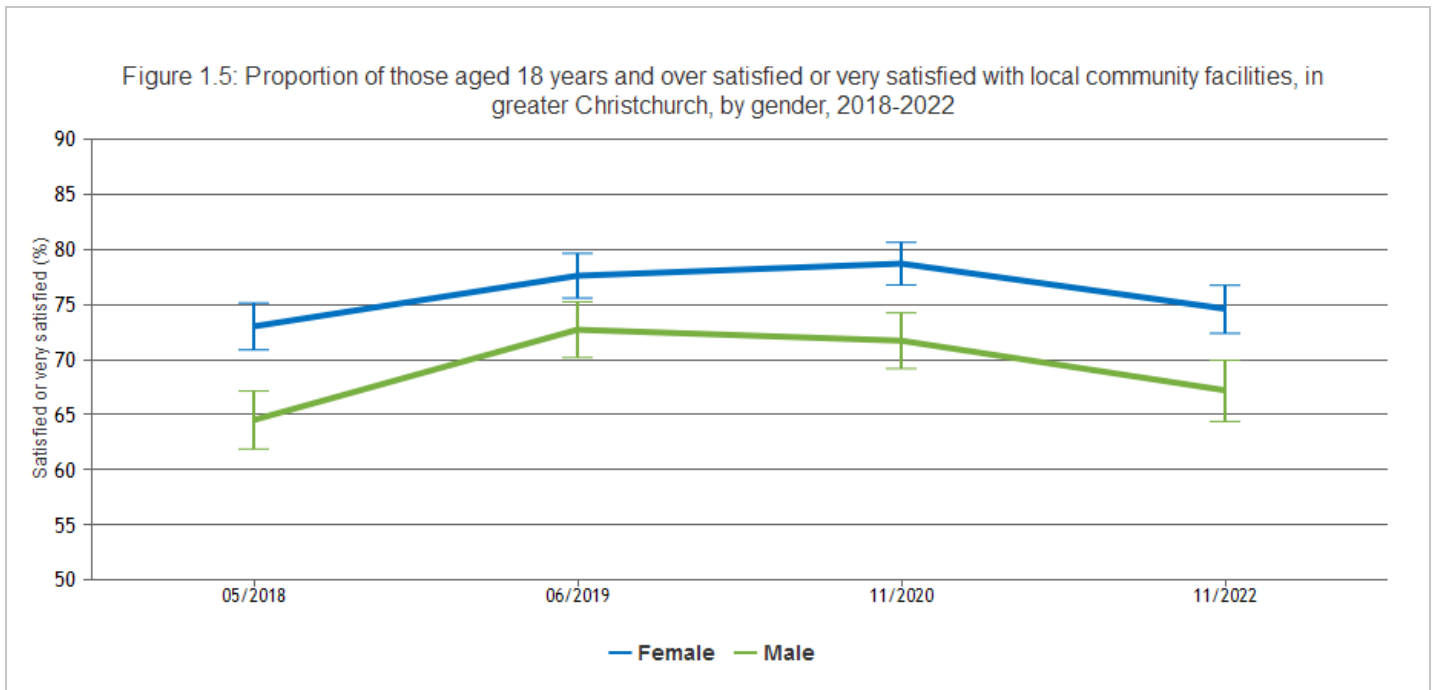
The figure shows differences by ethnicity in the proportion of respondents who indicated that they were satisfied or very satisfied with local community facilities in greater Christchurch. The proportion of European and Pacific/Asian/Indian respondents who indicated that they were satisfied or very satisfied with local community facilities increased significantly between 2018 and 2019 and remained stable in 2020. However, there was no significant change for Māori respondents during this time and the 2022 result suggests an overall pattern of decline in satisfaction with local community facilities for Māori. The level of satisfaction in 2022 for European respondents is statistically significantly higher than for Māori respondents (71.1% and 63.4% respectively) although similar to Pacific/Asian/Indian respondents (69.9%).

Breakdown by age



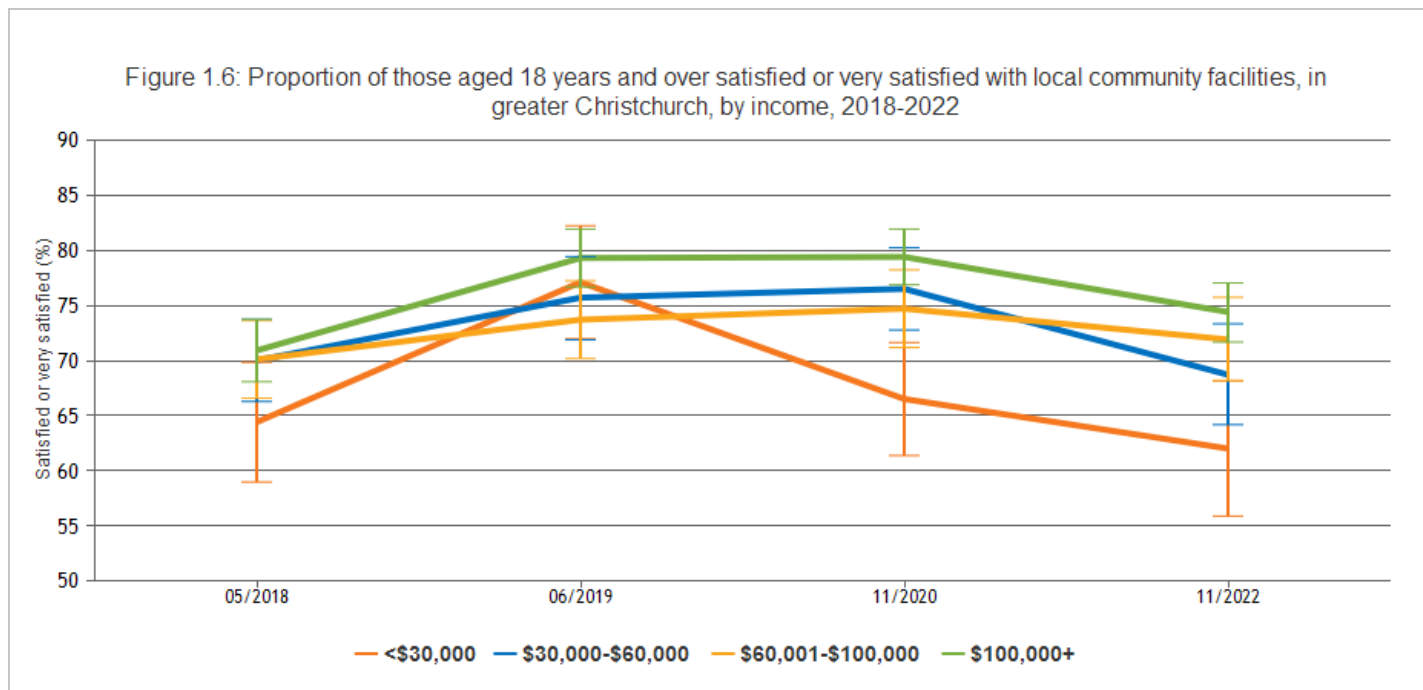
The figure shows some differences by age group in the proportion of respondents who indicated that they were satisfied or very satisfied with local community facilities in greater Christchurch between 2018 and 2022. Broadly, the figure indicates a positive age gradient, with increasing age being associated with higher levels of satisfaction. In 2022 a significantly lower proportion of young people (18 to 24 years, 58.1%) indicated that they were satisfied or very satisfied with local community facilities compared to all other age groups (such as 65-74 years, 79.6%), with the exception of 25 to 34-year-olds (65%).

Breakdown by gender



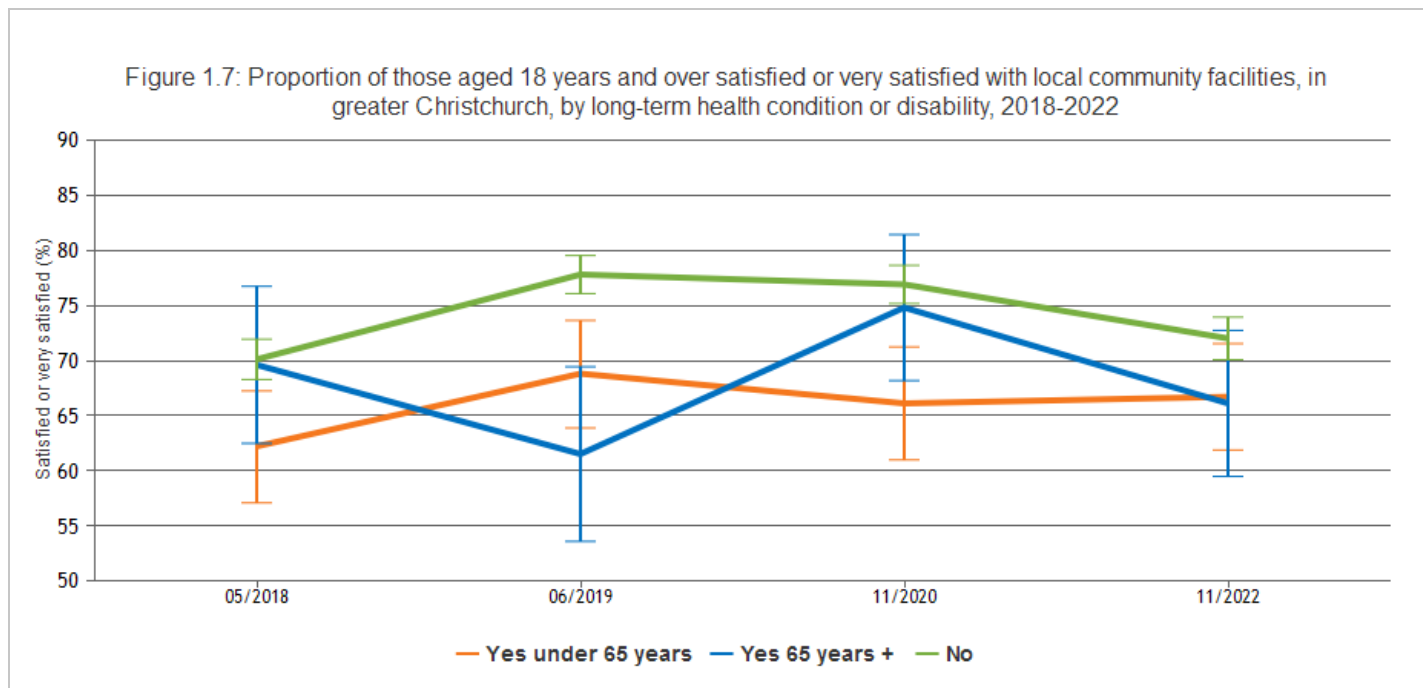
The figure shows that a statistically significantly higher proportion of female respondents in greater Christchurch indicated that they were satisfied or very satisfied with local community facilities, over the time series shown, compared with male respondents (74.6% and 67.2% respectively in 2022).

Breakdown by income



The figure shows that in 2020 and 2022, a significantly lower proportion of those in the lowest income group (<\$30,000, 62%, 2022) indicated that they were satisfied or very satisfied with local community facilities compared with those in the highest income group (\$100,000+, 74.4%, 2022). Broadly, the figure indicates a positive income gradient, with increasing income being associated with higher levels of satisfaction. Between 2018 and 2019, the proportion of respondents in greater Christchurch who indicated that they were satisfied or very satisfied with local community facilities increased significantly among those in the lowest and highest income groups. The proportion satisfied or very satisfied decreased most notably for the lowest income group, between 2019 and 2022 (from 77.1% in 2019 to 62% in 2022).

Breakdown by disability



The figure shows that the proportion of respondents aged under 65 years with a long-term health condition or disability in greater Christchurch who indicated that they were satisfied or very satisfied with local community facilities, was significantly lower in 2018, 2019, and 2020 than for those without a long-term health condition or disability and lower (but not statistically significantly lower) in 2022. Respondents aged 65 years and older with a long-term health condition or disability also had significantly lower satisfaction levels compared to those without a long-term health condition or disability in 2019, but not at any other timepoints.

Overall, there was no significant difference in satisfaction levels between those with a long-term health condition or disability who were aged under 65 years and those aged 65 years and over, at any timepoint. Note that the wide confidence intervals for both groups limit the interpretation of these comparisons.

Data Sources

Source: Te Whatu Ora Waitaha Canterbury - formerly the Canterbury District Health Board.

Survey/data set: Canterbury Wellbeing Survey to 2022. Access publicly available data from Te Mana Ora | Community and Public Health website www.cph.co.nz/your-health/wellbeing-survey/

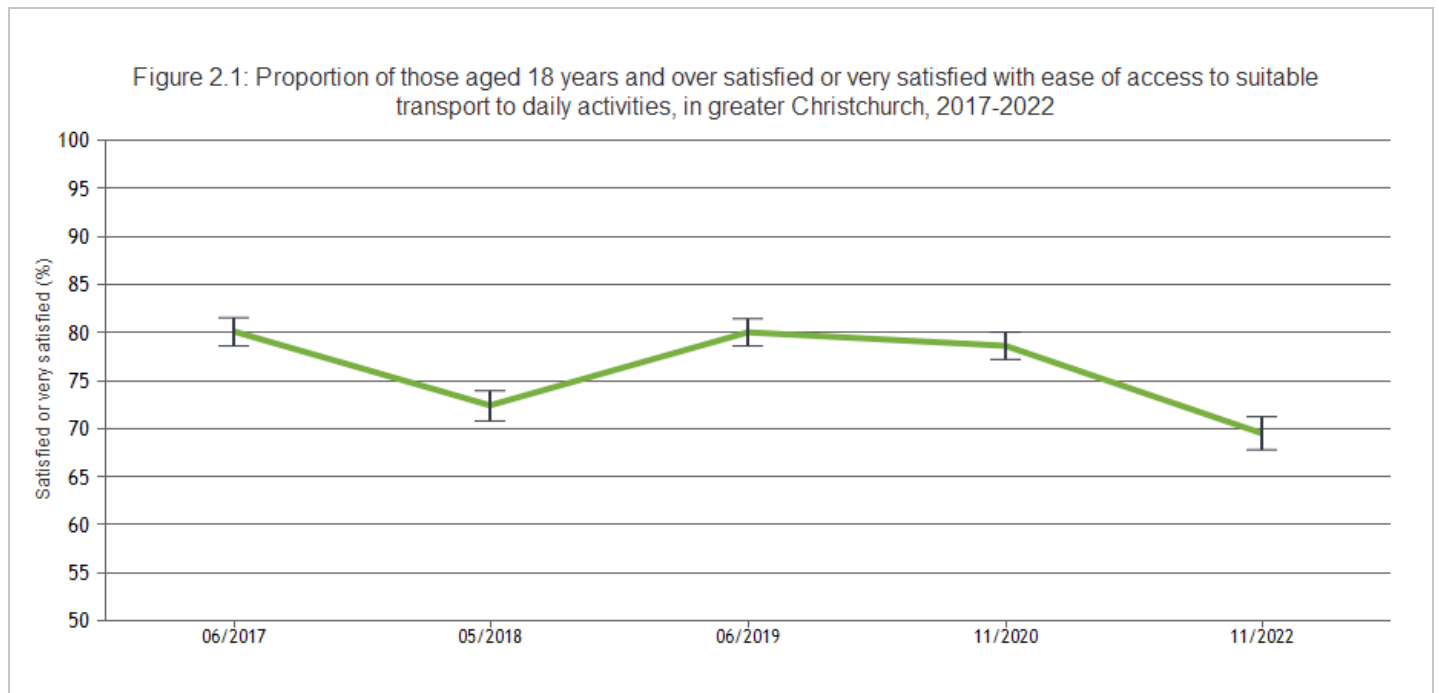
Source data frequency: Annually.

Metadata for this indicator is available at <https://www.canterburywellbeing.org.nz/index-data>

ACCESS TO TRANSPORT

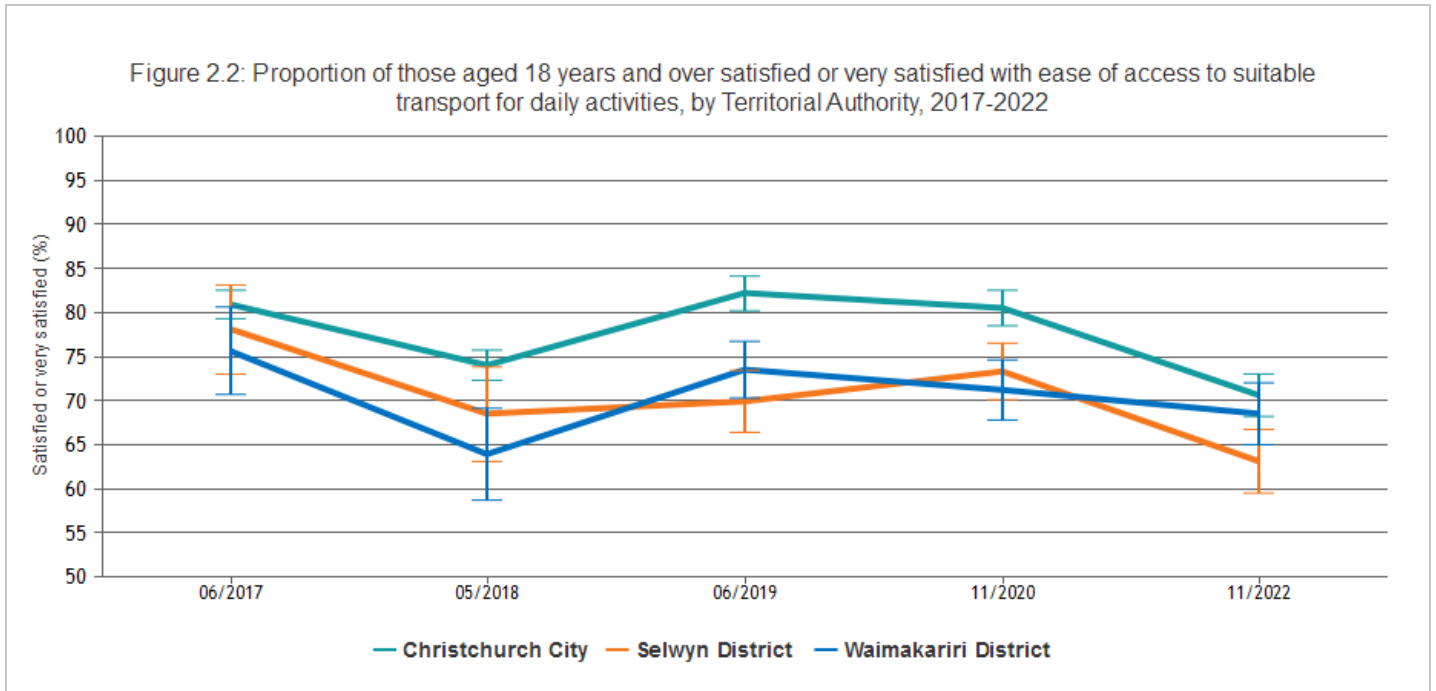
Transport systems and infrastructure (including public transport) influence health and wellbeing by enabling access to other important resources, such as employment, education, and social and health care services. Transport infrastructure that is safe and easy to navigate increases the likelihood of residents using environmentally sustainable modes of transport, such as walking and cycling [3]. Levels of physical activity are influenced by the walkability and cycle-ability of the local environment [3].

This indicator presents the proportion of those 18 years and over, satisfied or very satisfied with their ease of access to suitable transport to daily activities, using Canterbury Wellbeing Survey data from 2017 to 2022



The figure shows that the proportion of respondents who indicated that they were satisfied or very satisfied with their ease of access to suitable transport to daily activities, increased statistically significantly from 72.4 percent in 2018 to 80 percent in 2019 before declining statistically significantly to 69.5 percent in 2022.

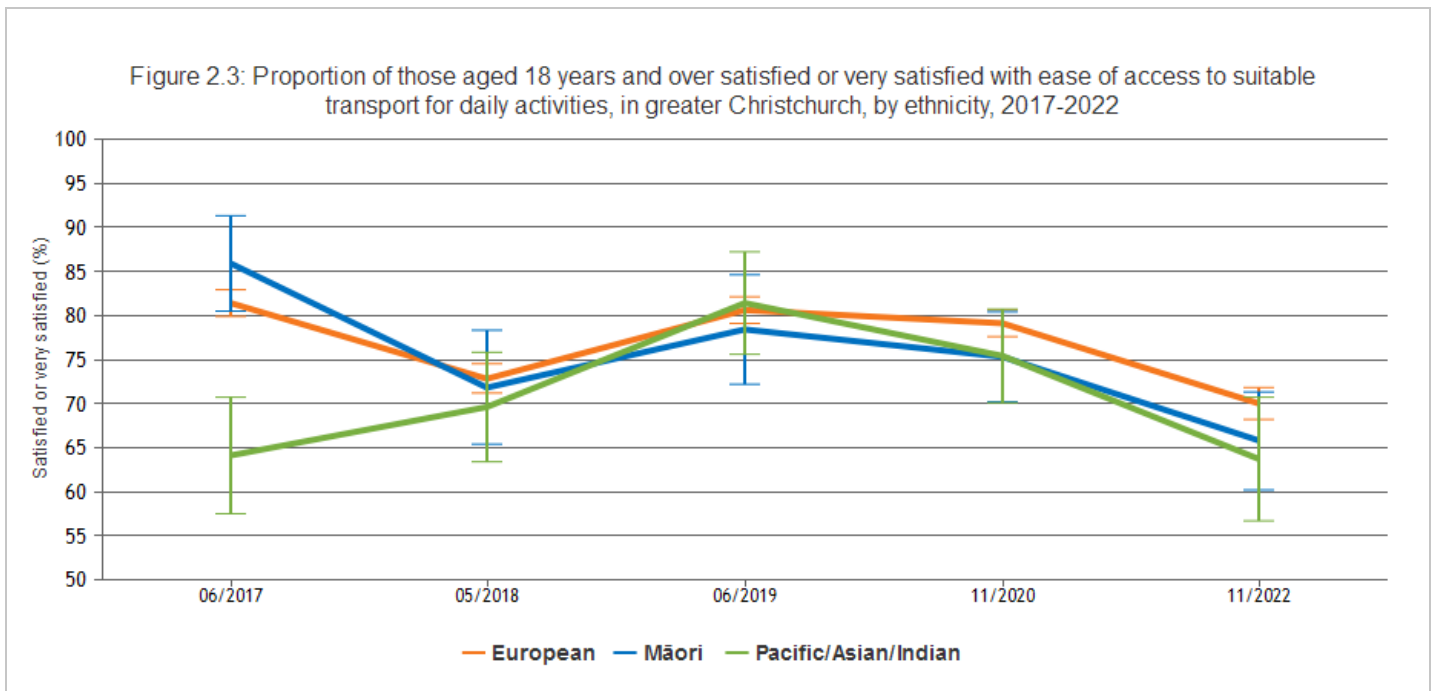
Breakdown by Territorial Authority



The figure shows that satisfaction with ease of access to suitable transport decreased overall over the 2017 to 2022 time period for Christchurch City (80.9% to 70.6%), Selwyn District (68.5% to 63.1%), and Waimakariri District (75.6% to 68.5%). The satisfaction reported by Christchurch City respondents was statistically significantly higher than for Waimakariri District and Selwyn District respondents in 2019 and 2020, however the satisfaction levels were similar across the three Territorial Authorities in 2022.

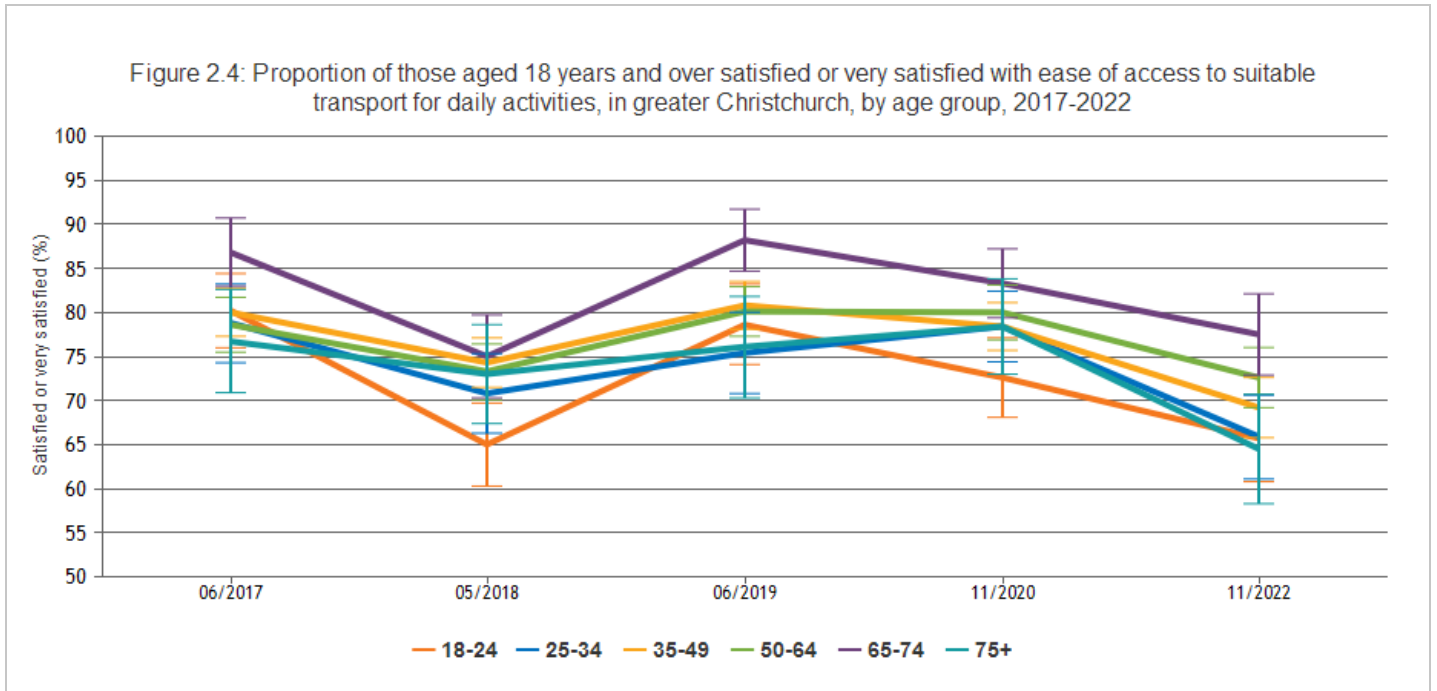
The proportion of respondents who indicated that they were satisfied or very satisfied with their ease of access to suitable transport to daily activities did not change significantly between 2019 and 2022 for Selwyn District or Waimakariri District respondents and the overall decline over this period (shown in Figure 2.1) was largely driven by Christchurch City.

Breakdown by ethnicity



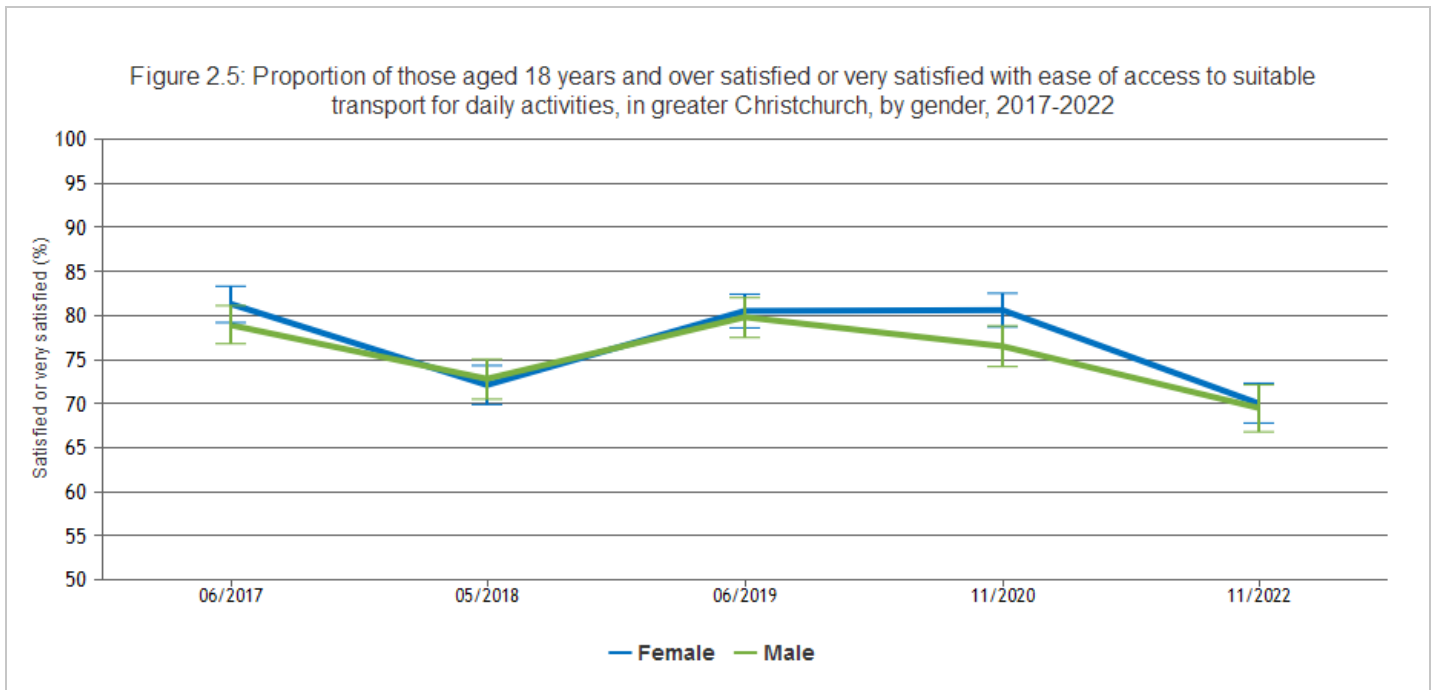
The figure shows that the proportion of European, Māori, and Pacific/Asian/Indian respondents who reported being satisfied or very satisfied with their ease of access to suitable transport, converged across greater Christchurch from 2017 to 2018. This pattern of convergence has remained stable in 2022 and the differences between ethnic groups were not statistically significant.

Breakdown by age



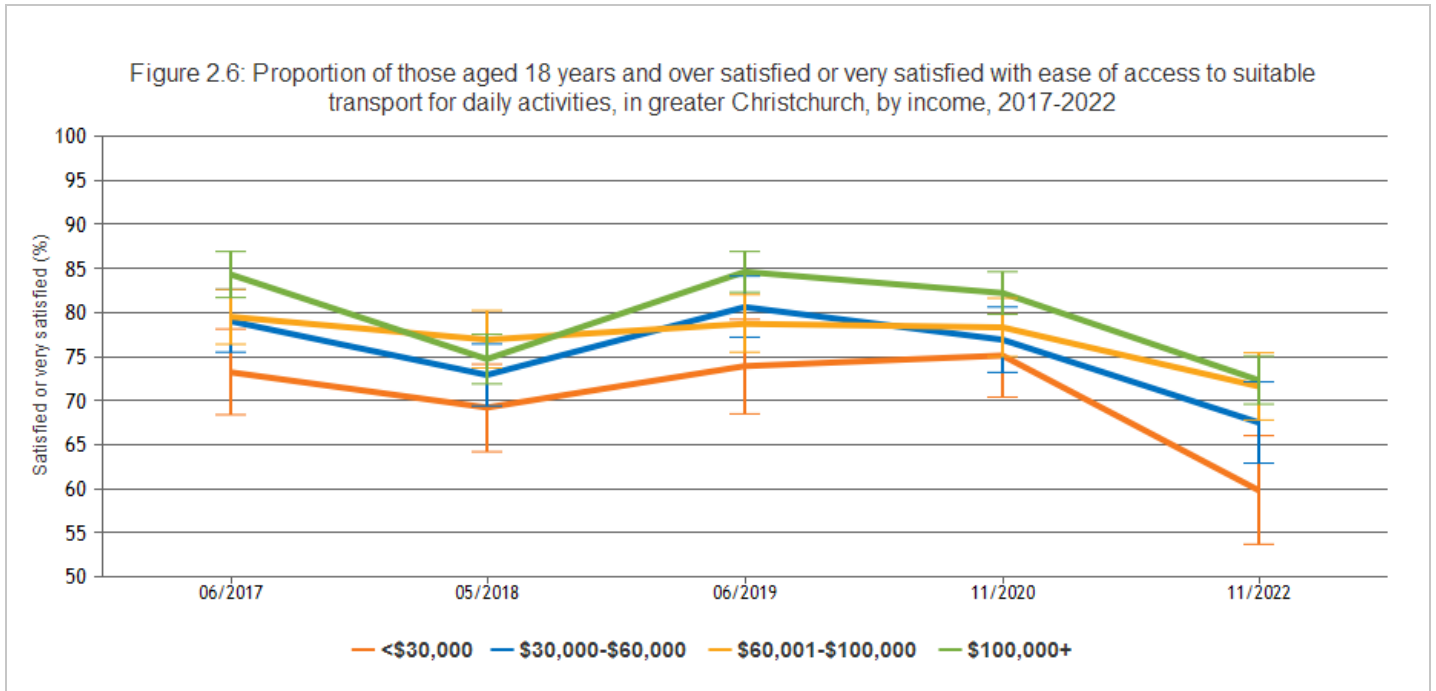
The figure shows that the proportion of respondents who reported being satisfied or very satisfied with their ease of access to suitable transport decreased overall for all age groups from 2017 to 2022. Broadly, the figure indicates a positive age gradient, with increasing age being associated with higher levels of satisfaction. In 2022, a significantly lower proportion of young people (18 to 24 years, 65.7%) indicated that they were satisfied or very satisfied with their ease of access to suitable transport compared with older people (65 to 74 years, 77.5%).

Breakdown by gender



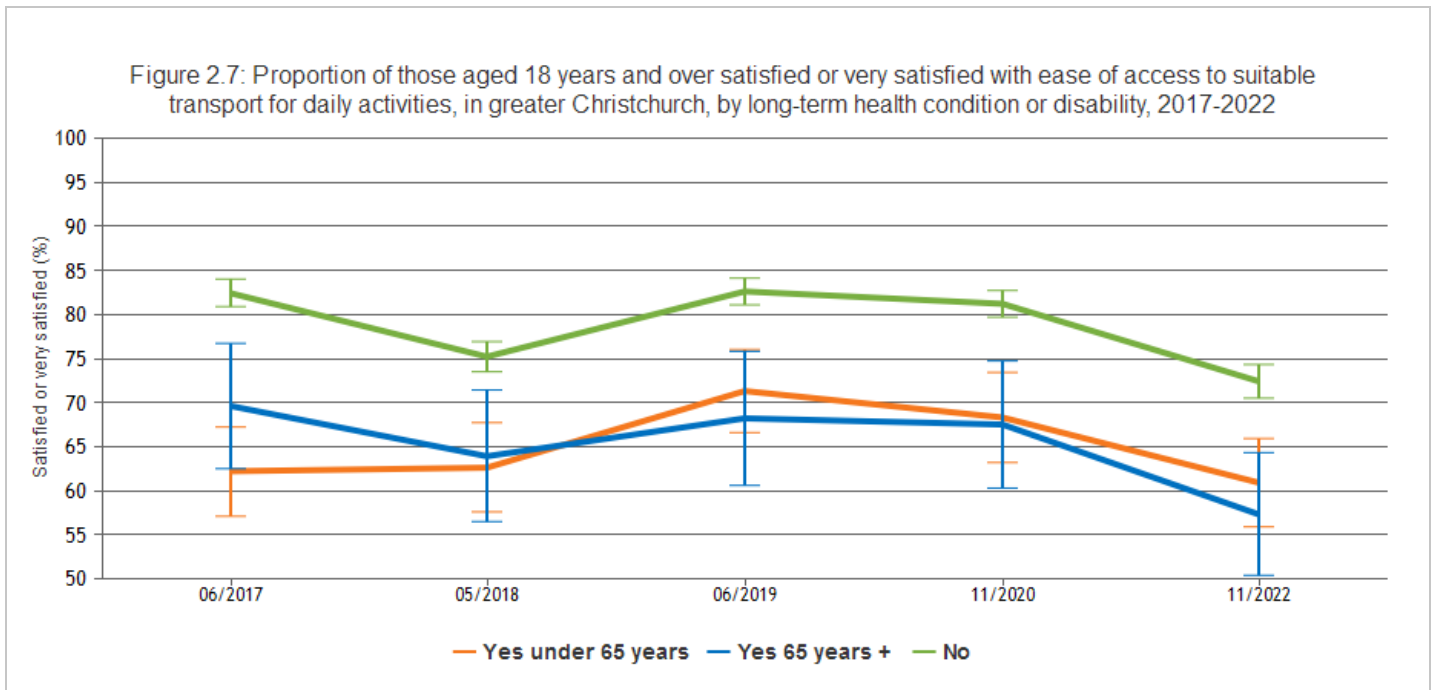
The figure shows no statistically significant differences in the proportion of female and male respondents who reported being satisfied or very satisfied with their ease of access to suitable transport, from 2017 to 2022.

Breakdown by income



The figure shows a general pattern of increasing proportions of respondents who indicated that they were satisfied or very satisfied with their ease of access to transport with increasing income level. In 2019 and 2022, satisfaction with ease of access to transport was statistically significantly different between the lowest and highest income groups (59.8% for <\$30,000 to 72.3% for \$100,000+ in 2022).

Breakdown by disability



The figure shows a statistically significantly lower proportion of respondents with a long-term health condition or disability (irrespective of age group) indicating that they were satisfied or very satisfied with their ease of access to suitable transport in greater Christchurch from 2017 to 2022, than those with no long-term health condition or disability. There were no statistically significant differences between respondents with a long-term health condition or disability who were aged under 65 years and those aged 65 years and over, at any timepoint.

Data Sources

Source: Te Whatu Ora Waitaha Canterbury - formerly the Canterbury District Health Board.

Survey/data set: Canterbury Wellbeing Survey to 2022. Access publicly available data from Te Mana Ora | Community and Public Health website www.cph.co.nz/your-health/wellbeing-survey/

Source data frequency: Annually.

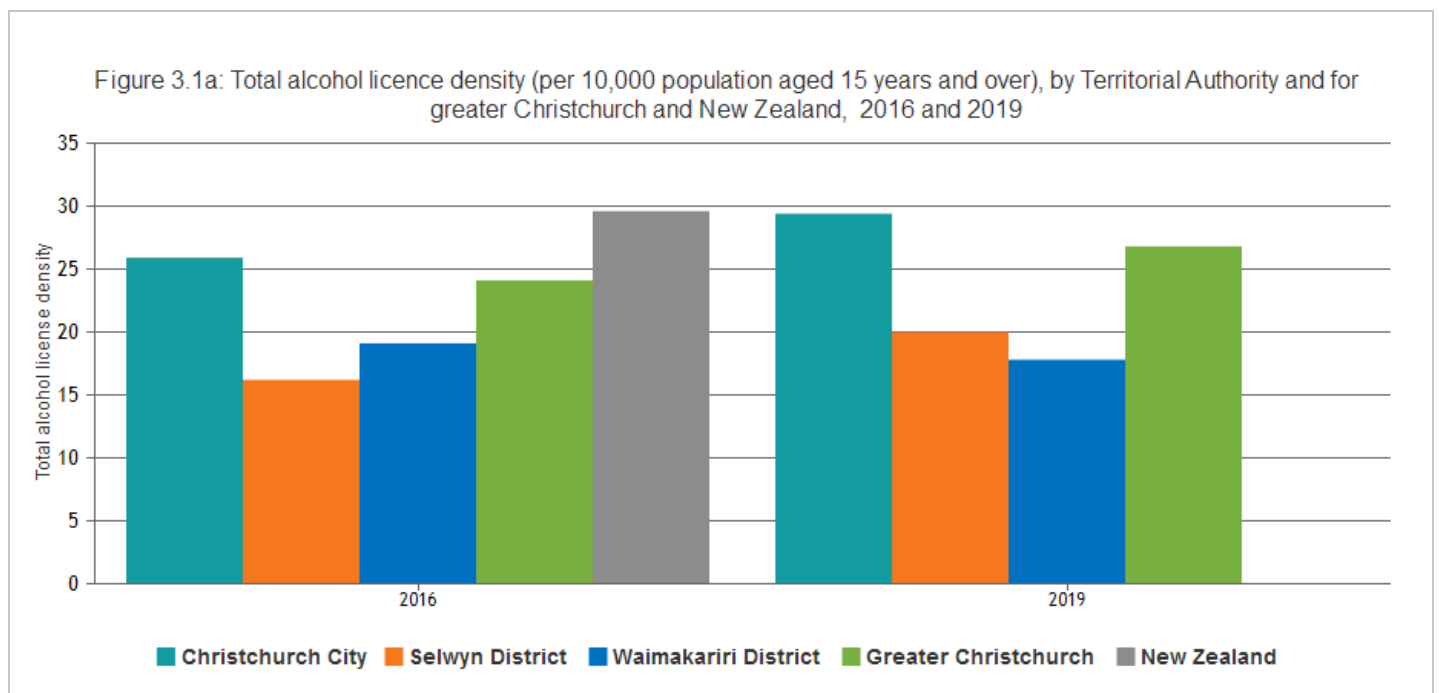
Metadata for this indicator is available at <https://www.canterburywellbeing.org.nz/index-data>

ALCOHOL LICENCES

New Zealand and international research [8-10] highlights a clear relationship between the density of alcohol outlets (and the proximity of outlets to residential areas, and areas of higher social deprivation) and measures of alcohol-related harm, although the relationships are complex [11]. Broadly, a greater availability of alcohol leads to increased consumption, which in turn leads to more social harms (including antisocial behaviour, dishonesty offences, property damage, and violent offences) [11]. However, the level of social harm is also influenced by local factors such as population demographics including deprivation, differences in access to transport networks, and differences in the amenity or character of an area [11].

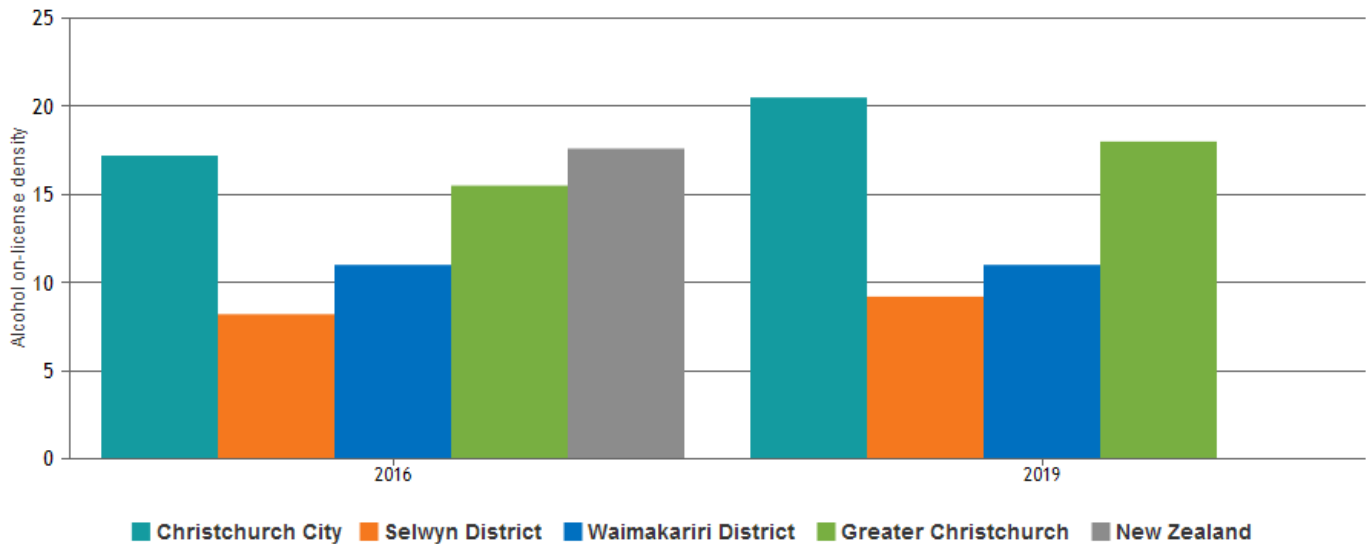
This indicator presents alcohol licence density per 10,000 population aged 15 years and over, by licence type, for greater Christchurch, Christchurch City, Selwyn District, Waimakariri District, and New Zealand, for 2016 and 2019 (currently, the 2019 New Zealand comparator is only available for total licence density). The licence types are: off-licence — such as supermarket, and liquor store; on-licence — bar, restaurant; and club-licence — an on-licence that allows a club to sell alcohol to club members and certain guests and visitors.

The alcohol licence density in greater Christchurch, 2016, is lower than for New Zealand as a whole across the three main licence types: on-licence (15.5 outlets and 17.6 outlets per 10,000 population), off-licence (5.1 outlets and 7.2 outlets per 10,000 population) and club licences (3.5 outlets and 4.9 outlets per 10,000 population), respectively.



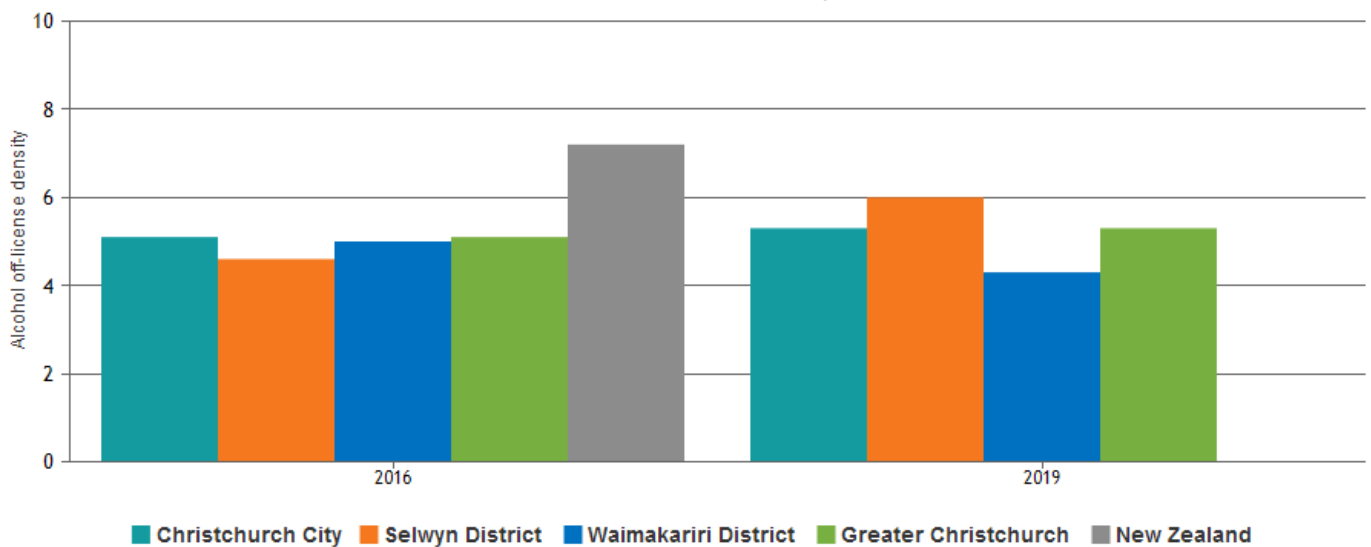
The figure shows a general increase in total alcohol licence density in greater Christchurch between 2016 and 2019 (total of on-licence, off-licence, and club licence densities: 24.1/10,000 population and 26.8/10,000 population, respectively). In 2016, the total alcohol licence density in greater Christchurch was lower than for New Zealand as a whole (24.1 outlets and 29.6 outlets per 10,000 population, respectively). The figure also shows that the total alcohol licence densities differ across the three Territorial Authorities in greater Christchurch (In 2019 Christchurch City 29.4/10,000; Selwyn District 20/10,000; Waimakariri District 17.8/10,000). Waimakariri District had the lowest alcohol licence density in the greater Christchurch area in 2019.

Figure 3.1b: Alcohol on-licence density (per 10,000 population aged 15 years and over), by Territorial Authority and for Greater Christchurch and New Zealand, 2016 and 2019



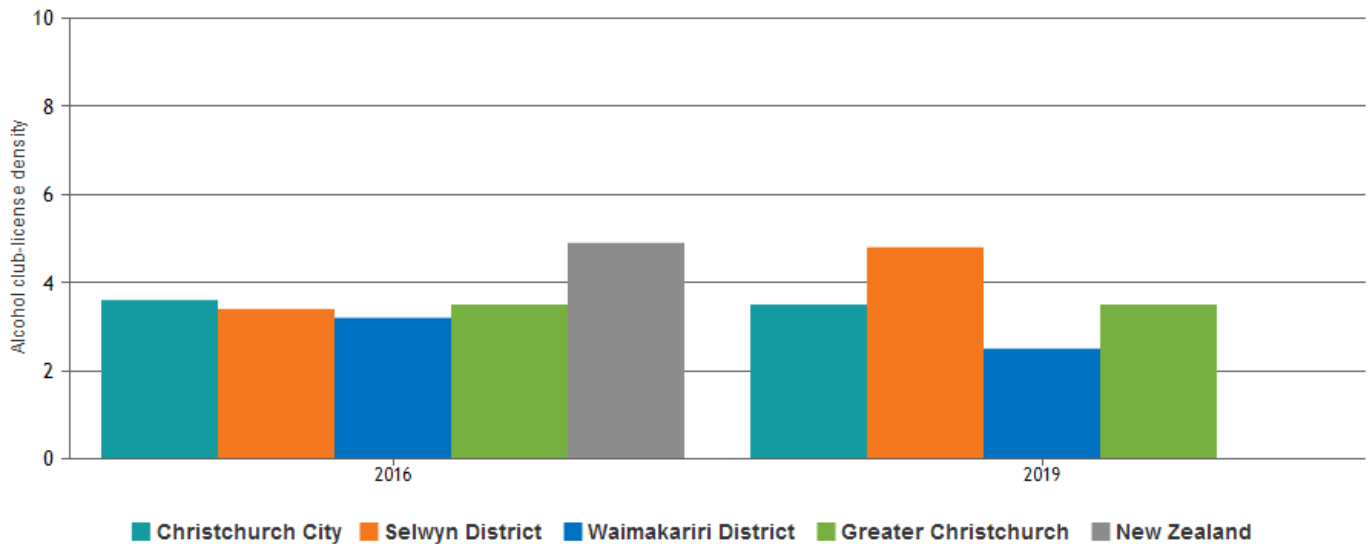
The figure shows that the on-licence alcohol licence densities differed across the three Territorial Authorities in greater Christchurch in both 2016 and 2019. In 2019, Christchurch City had the highest on-licence density at 20.5/10,000 in 2019; followed by Waimakariri District 11/10,000 in 2019, and Selwyn District 9.2/10,000 in 2019.

Figure 3.1c: Alcohol off-licence density (per 10,000 population aged 15 years and over), by Territorial Authority and for Greater Christchurch and New Zealand, 2016 and 2019



The figure shows that the off-licence alcohol licence densities differed across the three Territorial Authorities in greater Christchurch in both 2016 and 2019. In 2019, the off-licence density was highest in Selwyn District at 6/10,000, followed by Christchurch City 5.3/10,000 and Waimakariri District 4.3/10,000. There is currently no New Zealand comparator available for 2019, however, in 2016 the off-licence alcohol licence density in greater Christchurch was lower than for New Zealand as a whole (5.1 off-licences/10,000 population and 7.2 off-licences/10,000 population, respectively).

Figure 3.1d: Alcohol club-license density (per 10,000 population aged 15 years and over), by Territorial Authority and for Greater Christchurch and New Zealand, 2016 and 2019



The figure shows that the club-licence alcohol licence densities differed across the three Territorial Authorities in greater Christchurch in both 2016 and 2019. In 2019, the club-licence density was highest in Selwyn District (4.8/10,000), followed by Christchurch City at 3.5/10,000 and Waimakariri District at 2.5/10,000. There is currently no New Zealand comparator available for 2019, however, in 2016 the club-licence alcohol licence density in greater Christchurch was lower than New Zealand as a whole (3.5 club-licences/10,000 population and 4.9 club-licences/10,000 population, respectively).

Data Sources

Source: Environmental Health Indicators Programme, Massey University.

Survey/data set: Administrative data to 2019. Custom data request for 2019. Access publicly available alcohol licence density data from the Massey University website www.healthspace.ac.nz/resources-datasets-metadata-links

Source data frequency: No update currently scheduled.

Metadata for this indicator is available at <https://www.canterburywellbeing.org.nz/index-data>

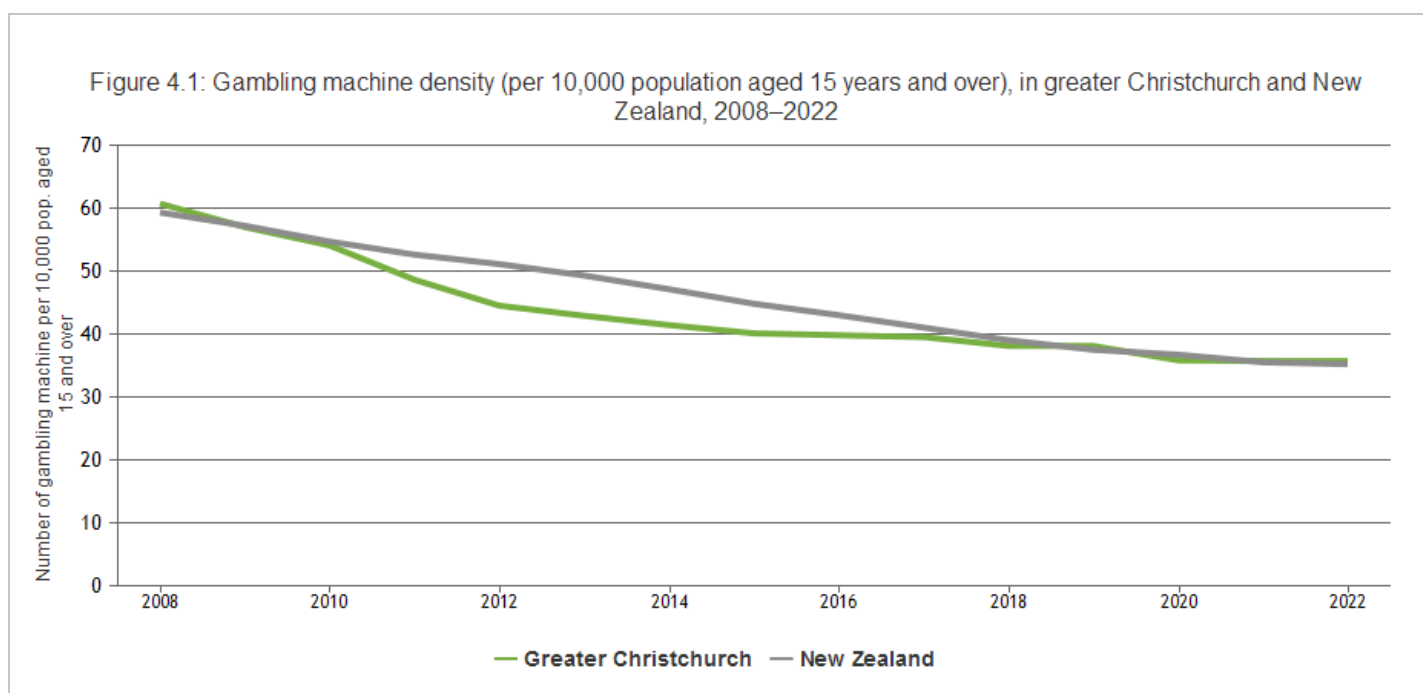
GAMBLING MACHINES

Gambling can lead to significant health, social, and economic implications for individuals and families [12]. Harms associated with gambling may include addiction, social isolation, depression, suicide, relationship breakdown, lowered work productivity, job loss, bankruptcy, and crime, including family violence [12]. National statistics demonstrate that the harms of gambling disproportionately affect Māori, Pacific people, and those living in low socioeconomic areas [13, 14].

Studies of the detrimental effects of gambling have confirmed a link between the geographic accessibility of gambling establishments and the prevalence of problem gambling [15-17]. People living close to all types of gambling premises have a higher chance of becoming problematic gamblers than those living at a distance from gambling premises [18]. Gambling machine establishments (specifically 'Class 4 venues' or 'non-casino' pubs and clubs) are typically clustered within socioeconomically deprived areas [19-21] and this has been shown to widen existing social and health inequalities [20, 22]. Gambling tends to be 'economically regressive', meaning that it increases inequality by diverting money from a larger group (typically of lower socioeconomic status) to a smaller group (of higher socioeconomic status) [23].

Gambling machine density has reduced steadily in New Zealand since the early 2000s, in large part due to the adoption of 'sinking lid' policies by many Territorial Authorities (when an existing 'pokie' venue closes, consent is not granted for another to be established) [24].

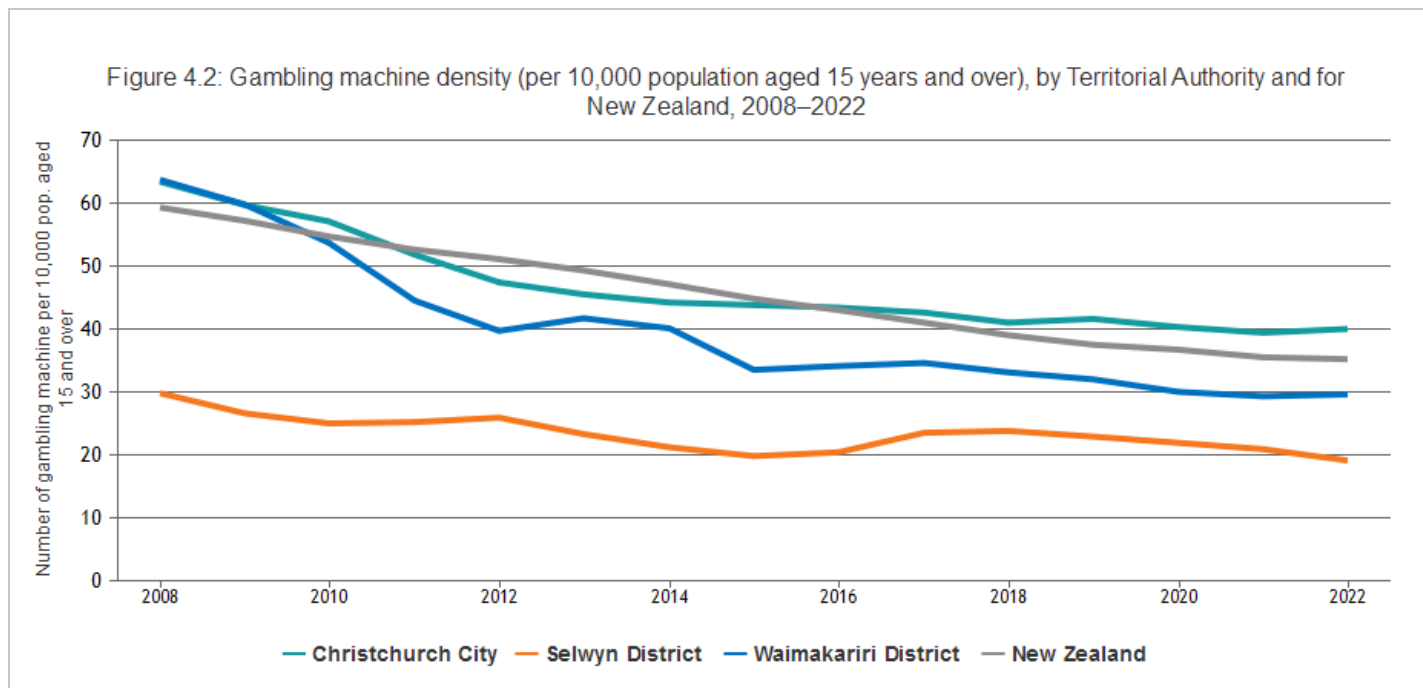
This indicator presents gambling machine density (the number of gambling machines per 10,000 population), in greater Christchurch and New Zealand from 2008 to 2022. Note internet or live casino games are not captured by this measure. Gambling machine proceeds, per annum, per 10,000 population aged 15 years and over, are also described.



The figure shows that gambling machine density in greater Christchurch has declined substantially over the time period shown, from 60.7 machines per 10,000 population in 2008 to 35.7 machines per 10,000 population in 2022 (unchanged since 2020). This pattern is broadly in line with gambling machine density across New Zealand.

Similarly, gambling machine proceeds, per annum, per 10,000 population aged 15 years and over have declined across greater Christchurch and New Zealand over the same period (data not shown). For greater Christchurch, gambling machine proceeds have declined from \$2.62M per 10,000 population aged 15 years and over, in 2008 (\$262 per person) to 2.35M per 10,000 population aged 15 years and over, in 2022 (\$235 per person). For New Zealand, gambling machine proceeds have declined from \$2.71M to \$2.44M per 10,000 population between 2008 and 2022.

Breakdown by Territorial Authority



The figure shows the gambling machine density per 10,000 population for Christchurch City, and the Selwyn and Waimakariri districts, from 2008 to 2022. The pattern is one of declining density overall, in keeping with the national picture. The figure shows that the gambling machine density in Selwyn District has been consistently substantially lower than the other Territorial Authorities, over the time series shown (in 2022, Selwyn 19.1; Waimakariri 29.6; Christchurch City 40; and New Zealand 35.2 machines/10,000 population).

In 2022, gambling machine proceeds (data not shown) were highest in Christchurch City (equivalent to \$275 per person aged 15 years and over) and lowest in Selwyn District (\$88 per person). Gambling machine proceeds for the Waimakariri District were approximately midway between Christchurch City and Selwyn District in 2022 (\$171 per person).

Data Sources

Source: Department of Internal Affairs.

Survey/data set: Administrative data to December 2022. Access publicly available data from the Department of Internal Affairs website <https://catalogue.data.govt.nz/dataset/gaming-machine-profits-gmp-dashboard>.

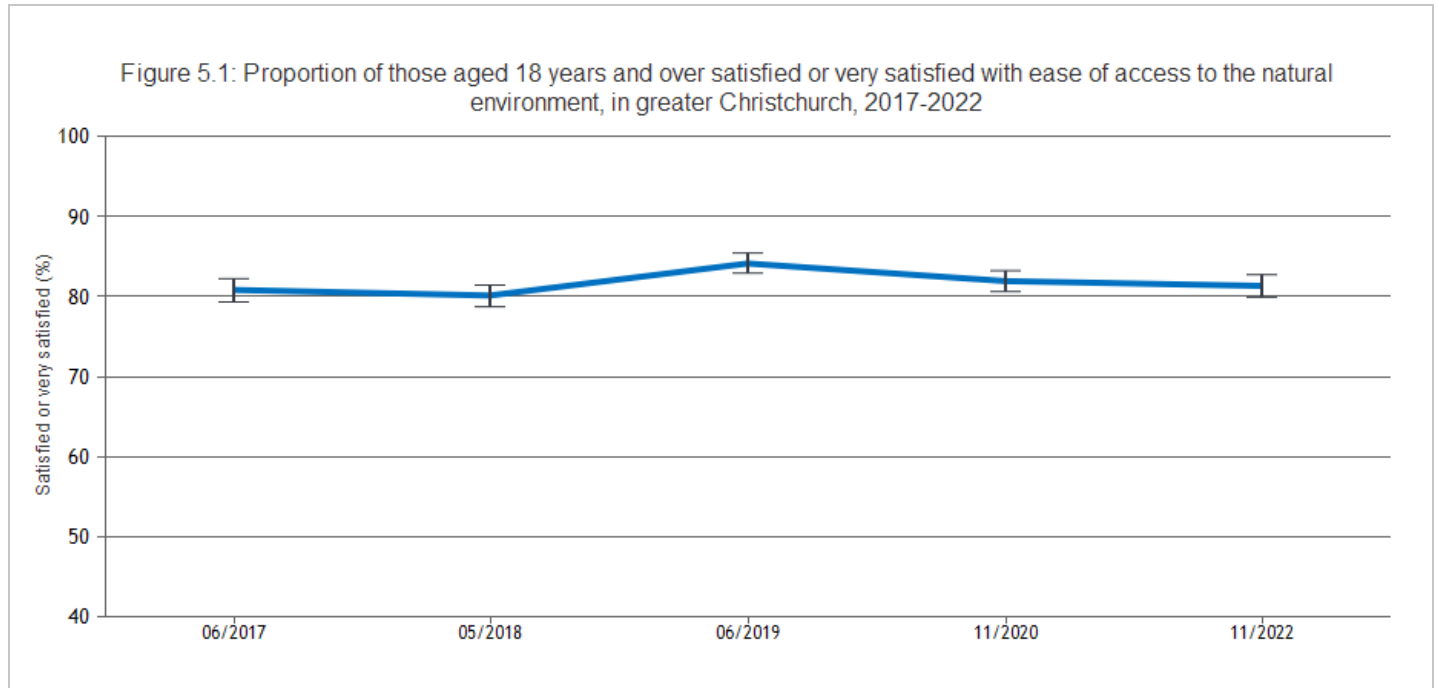
Source data frequency: Quarterly.

Metadata for this indicator is available at <https://www.canterburywellbeing.org.nz/index-data>

ACCESS TO NATURAL ENVIRONMENT

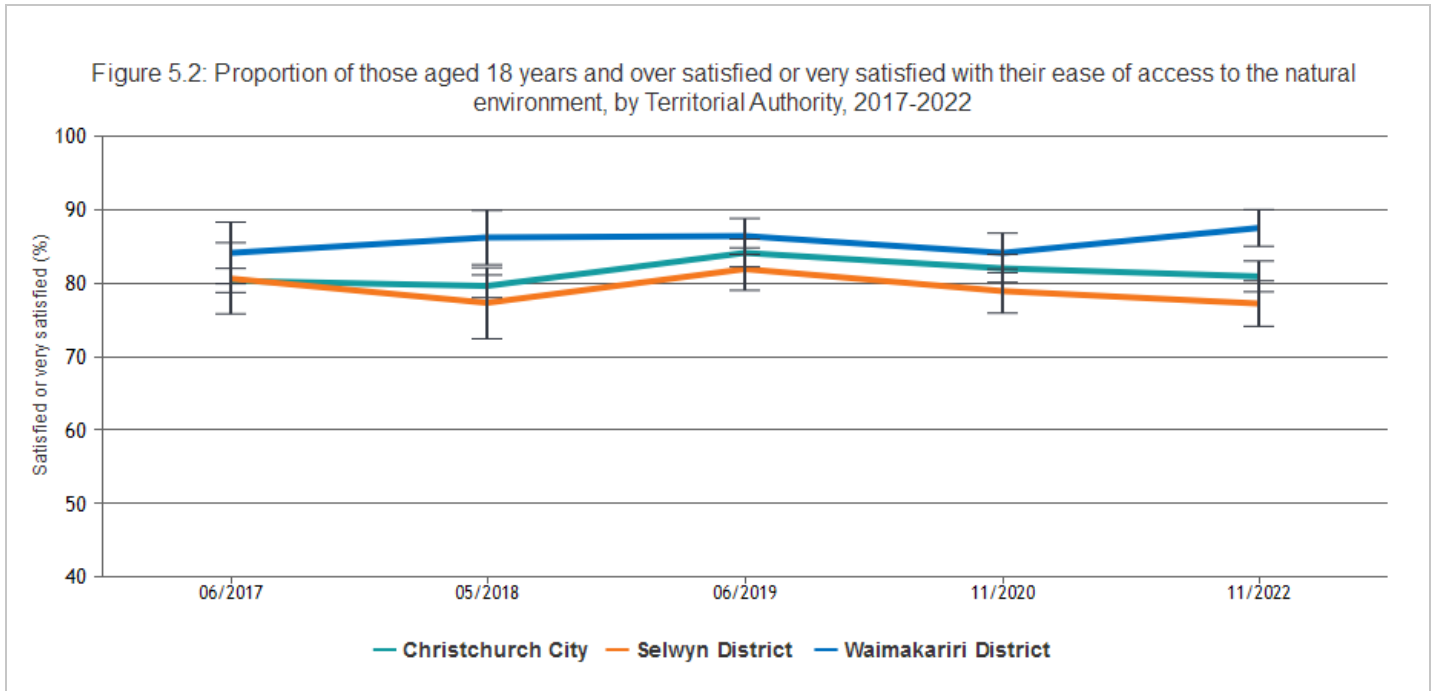
Access to natural environments can buffer stress [4], and visits to public conservation areas can improve mental health and wellbeing [5]. This indicator is based on the Canterbury Wellbeing Survey's 'access to the natural environment' question, that broadly defines the natural environment as "rivers, lakes, beaches, wildlife, areas, parks, and walking tracks" [25].

This indicator presents the proportion of those 18 years and over satisfied or very satisfied with their ease of access to the natural environment.



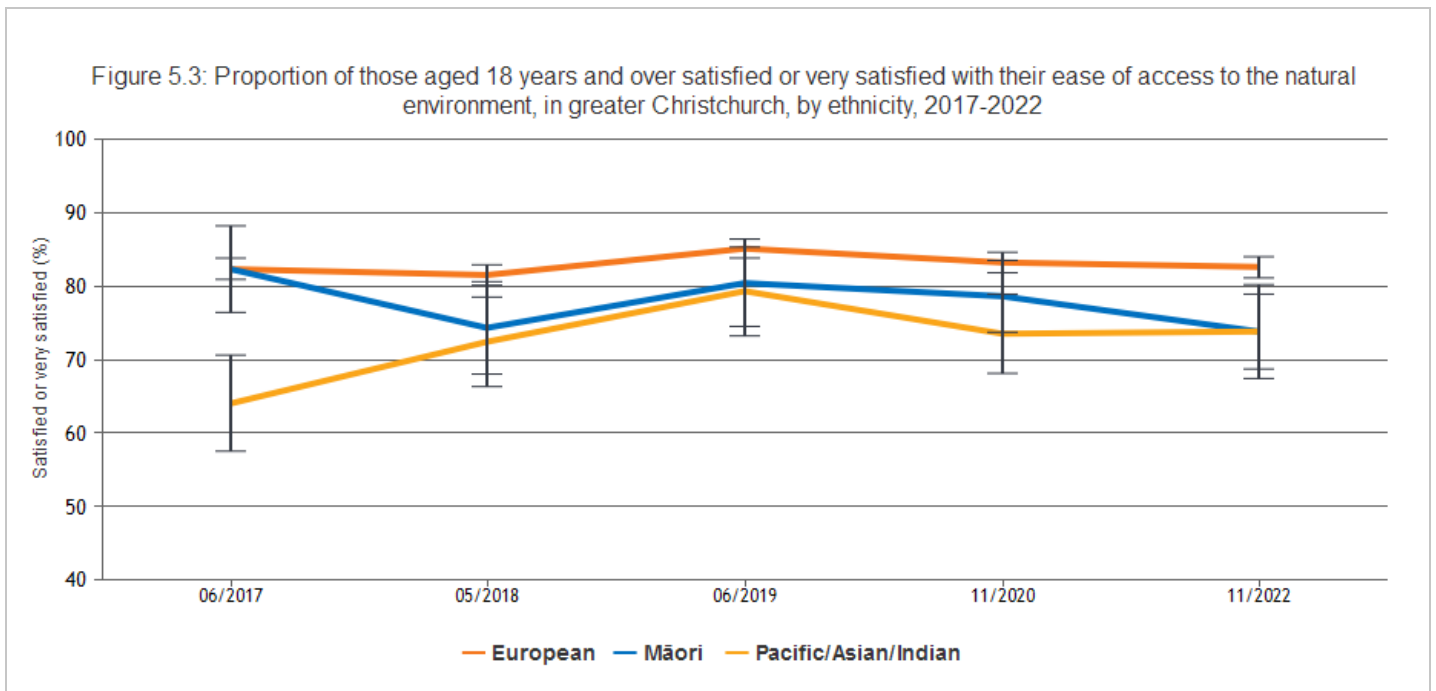
The figure shows that more than eighty percent of greater Christchurch respondents expressed satisfaction with their ease of access to the natural environment, from 2017 to 2022 (81.3% in 2022).

Breakdown by Territorial Authority



The figure shows in 2022, a statistically significantly higher proportion of respondents from Waimakariri District were satisfied with their ease of access to the natural environment compared with Christchurch City and Selwyn District residents (Waimakariri District 87.5%; Christchurch City 80.9%; Selwyn District 77.2%).

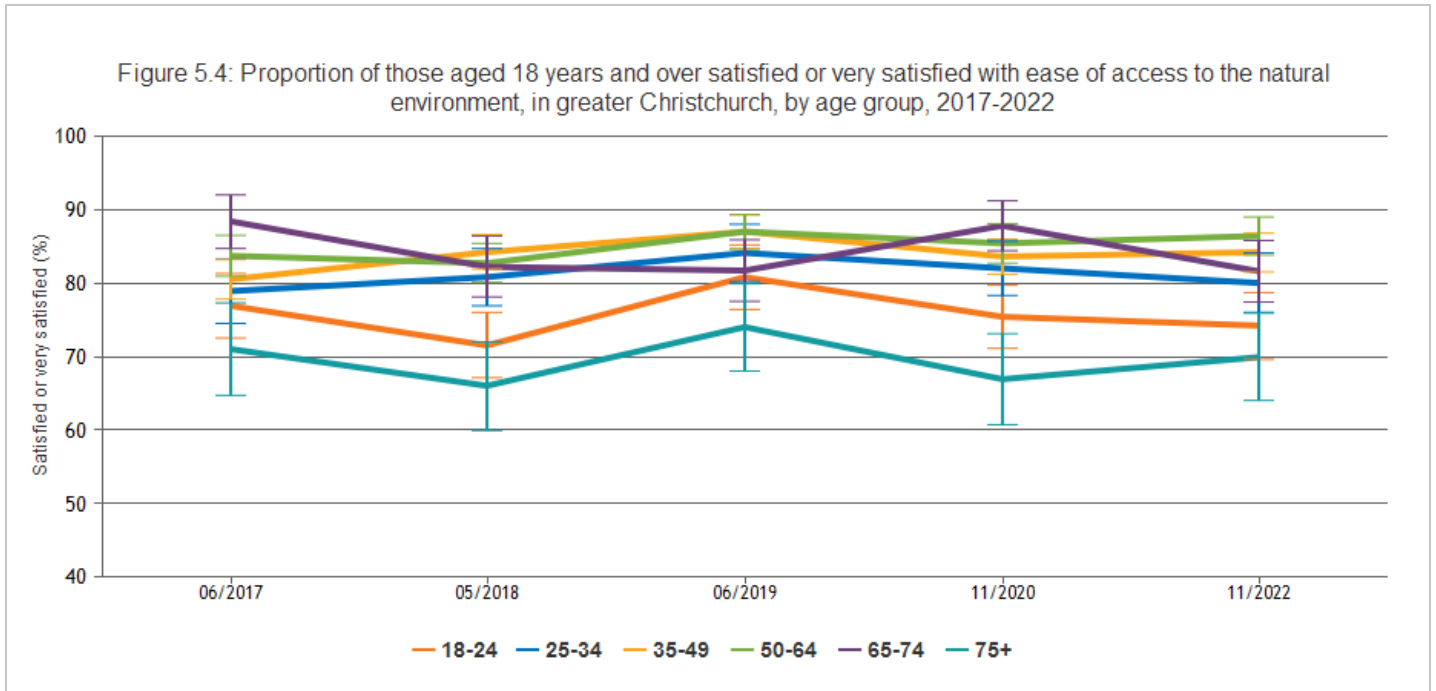
Breakdown by ethnicity



The figure shows in 2017, 2018, 2020, and 2022 a statistically significantly lower proportion of Pacific/Asian/Indian respondents were satisfied or very satisfied with their ease of access to the natural environment, compared with European respondents (and compared with Māori respondents in 2017). Between 2017 and 2022 the proportion of Pacific/Asian/Indian respondents satisfied with their ease of access to the natural environment increased notably (64.0% in 2017 to 73.8% in 2022).

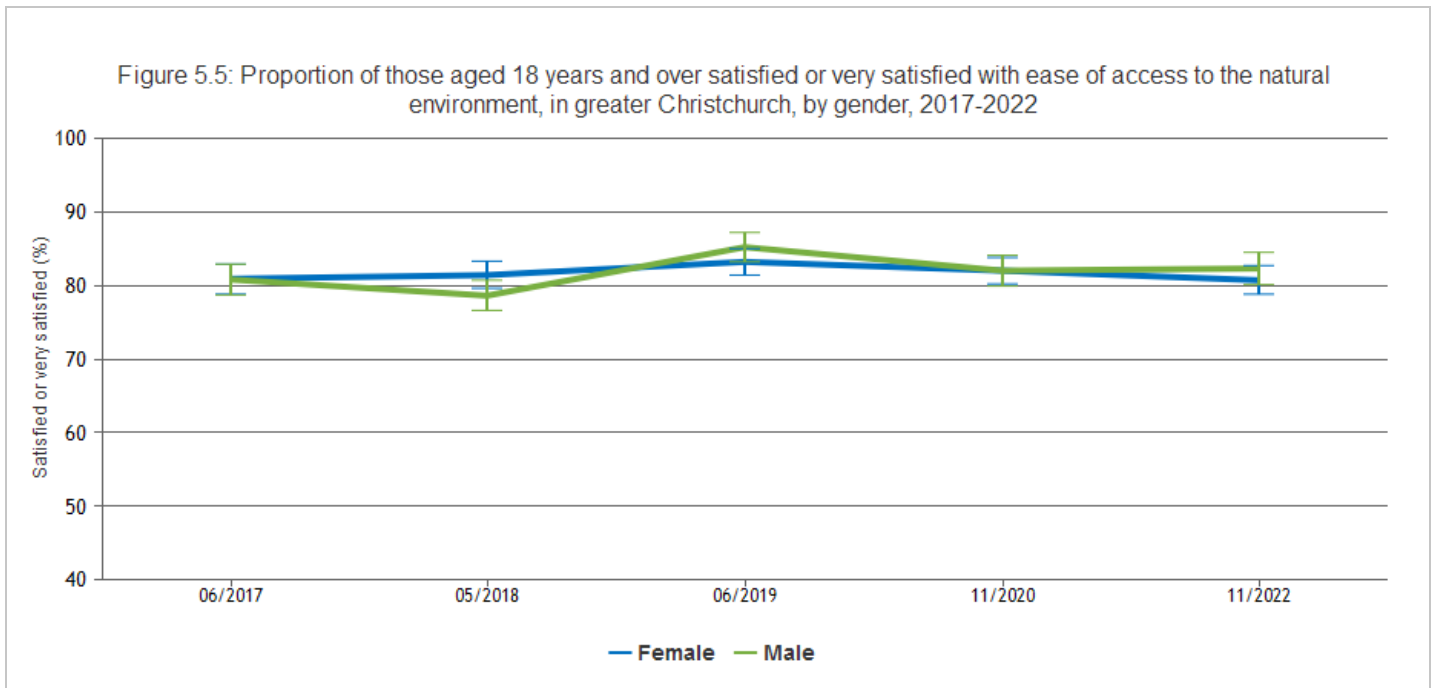
The figure also shows that a statistically significantly lower proportion of Māori respondents were satisfied or very satisfied with their ease of access to the natural environment in 2022, compared with European respondents (73.8% and 82.6% respectively).

Breakdown by age



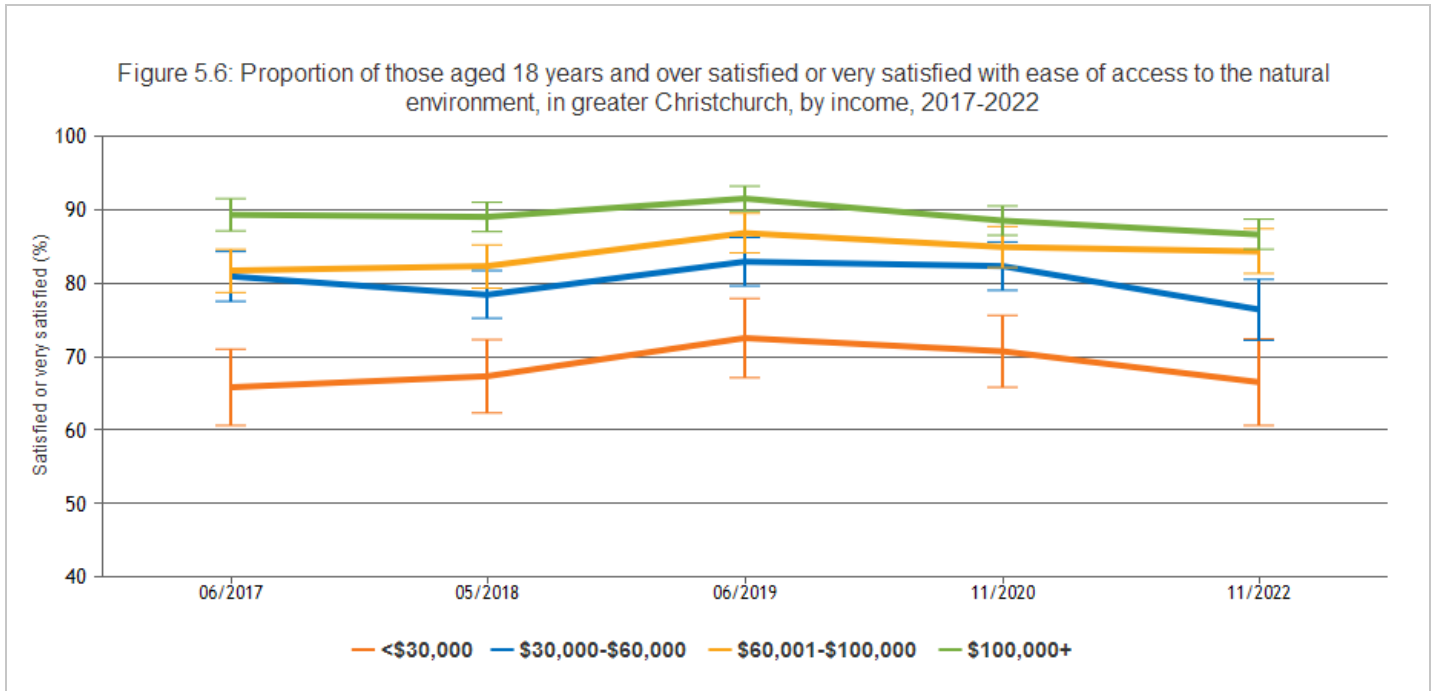
The figure shows that a majority of respondents, across all age groups, reported being satisfied or very satisfied with their ease of access to the natural environment, in greater Christchurch, from 2017 to 2022. The 2022 result indicates that the youngest age group and the oldest age group are both less satisfied with their access to the natural environment than the other age groups (75+yrs 69.9%; 18-24yrs 74.2% vs. 50-64yrs 86.4%). The differences between the oldest age group (least satisfied) and all other age groups (except the 18-24 years group) are statistically significant.

Breakdown by gender



The figure shows that there are no statistically significant differences in the proportion of respondents who indicated that they were satisfied or very satisfied with their ease of access to the natural environment in greater Christchurch, by gender, at any point across the time series shown.

Breakdown by income



The figure shows some statistically significant differences between income groups in the proportion of respondents who indicated that they were satisfied or very satisfied with their ease of access to the natural environment, from 2017 to 2022. There is a clear pattern of increasing satisfaction with increasing income. In 2022, 86.6 percent of respondents in the \$100,000+ annual household income group were satisfied with their ease of access to the natural environment compared with 66.5 percent of respondents in the <\$30,000 income group. The difference between the <\$30,000 income group and all other income groups was statistically significant at all time points.

Breakdown by disability



The figure shows a substantial and statistically significant difference in the proportion of respondents with and without a long-term health condition or disability (irrespective of age group), who indicated that they were satisfied or very satisfied with their ease of access to the natural environment between 2017 and 2022. In 2022, 84.7% of those without a long-term health condition or disability were satisfied or very satisfied; compared with 75.2% of those aged under 65 years with a long-term health condition or disability and 59% of those aged 65 years and over with a long-term health condition or disability.

A higher proportion of the younger (under 65 years) age group with a long-term health condition or disability was satisfied or very satisfied with their ease of access to the natural environment, compared with the older group, at all timepoints. This difference was statistically significant in 2018, 2019, and 2022.

Data Sources

Source: Te Whatu Ora Waitaha Canterbury - formerly Canterbury District Health Board.

Survey/data set: Canterbury Wellbeing Survey to 2022. Access publicly available data from Te Mana Ora | Community and Public Health website www.cph.co.nz/your-health/wellbeing-survey/

Source data frequency: Annually.

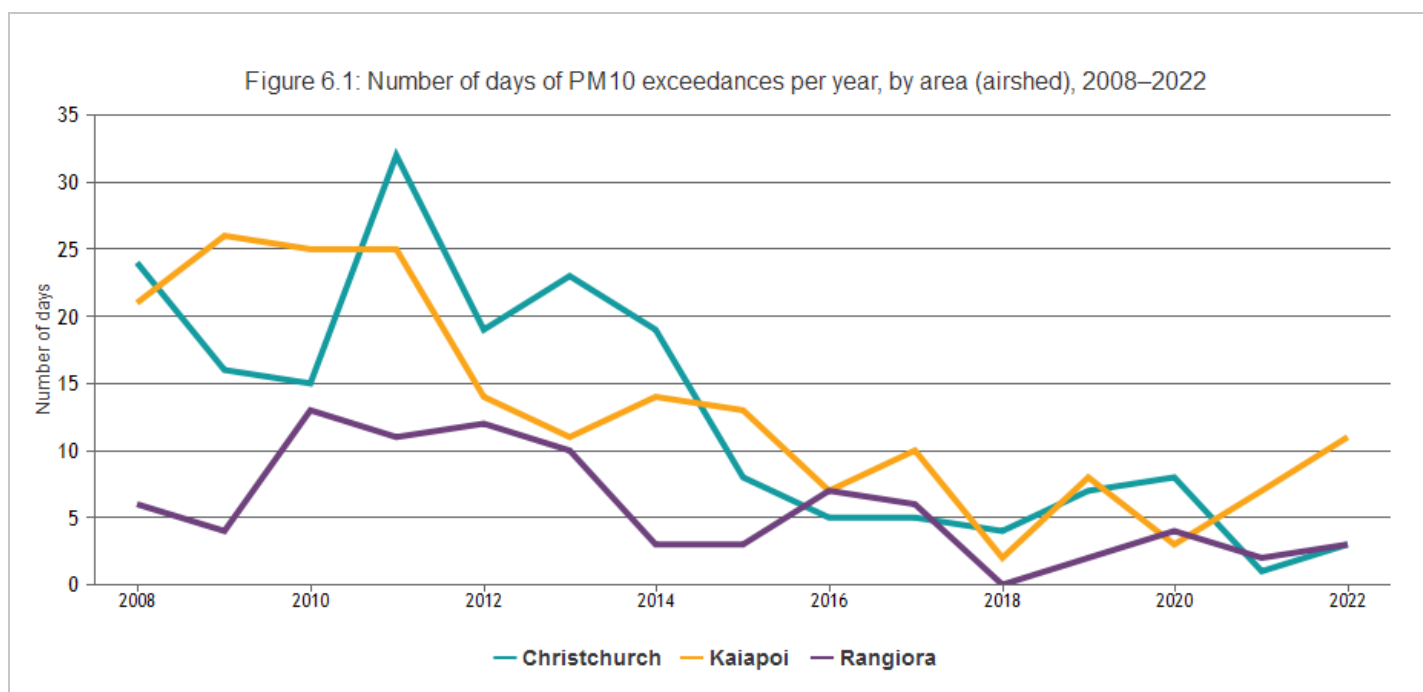
Metadata for this indicator is available at <https://www.canterburywellbeing.org.nz/index-data>

AIR QUALITY

The main air pollutant in Canterbury is particulate matter smaller than 10 micrometres (PM₁₀). Environment Canterbury monitors PM₁₀ concentrations daily (in real time) across eight geographical areas in the region (known as airsheds) and reports on high pollution nights, or exceedances [26]. This allows Environment Canterbury to compare concentrations with national standards, assess variations over time and understand impacts of local weather conditions [26]. Particulate matter is emitted from the combustion of fuels, such as wood and coal (from home heating and industry) and petrol and diesel from vehicles. PM₁₀ is associated with serious health outcomes such as cancer, respiratory problems, and cardiovascular disease [27].

The Government's National Environmental Standards for Air Quality set different targets for different airsheds (based on the World Health Organization's guideline) [28]. To meet the standard, the Christchurch City and Kaiapoi airsheds must experience no more than three exceedances per year, while the Rangiora airshed must experience no more than one exceedance per year. From 2021 the target for each airshed will become no more than one exceedance per year. Exceedances are when the daily average of PM₁₀ is over 50 micrograms per cubic metre of air.

This indicator presents the number of PM₁₀ exceedances per year for Christchurch City, Kaiapoi, and Rangiora.



The figure shows substantial improvements in air quality for all three airsheds since 2008, although some variability is apparent from year to year. Provisional data for the current (2022) reporting year indicate 3 exceedances for both Christchurch and Rangiora, and 11 exceedances for the Kaiapoi airshed, up from 7 exceedances in 2021. (Note the type of instrument used to measure PM₁₀ in the Kaiapoi airshed changed from 2021, see additional notes in the Metadata).

From 2021, the National Environmental Standards for Air Quality target for each airshed changed to 'no more than one exceedance per year', therefore none of the airsheds met the standard in 2022. Some unusual winter weather patterns in 2018 resulted in unusually low PM₁₀ concentrations that year.

Data Sources

Source: Environment Canterbury.

Survey/data set: Air quality monitoring data. Access publicly available data at the Environment Canterbury website www.ecan.govt.nz/data/air-quality-data/

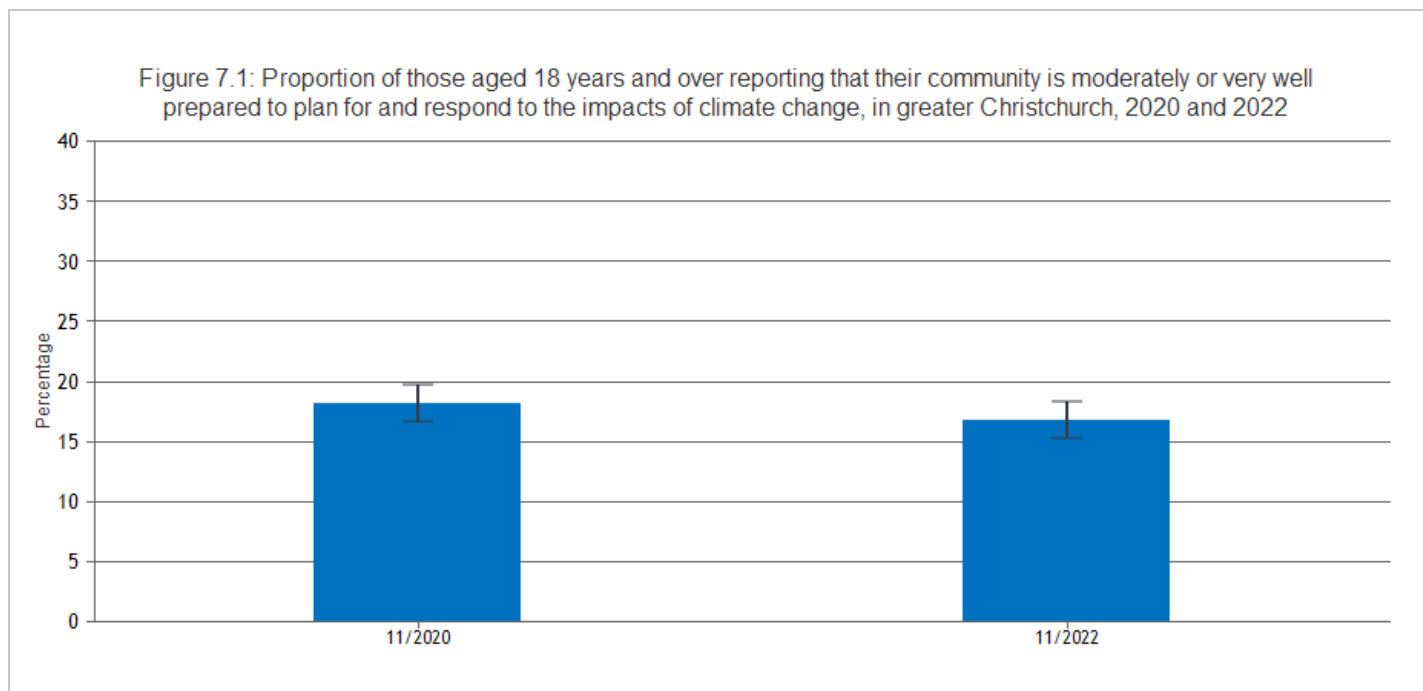
Source data frequency: Data collected daily and reported annually in December.

Metadata for this indicator is available at <https://www.canterburywellbeing.org.nz/index-data>

CLIMATE CHANGE PREPAREDNESS

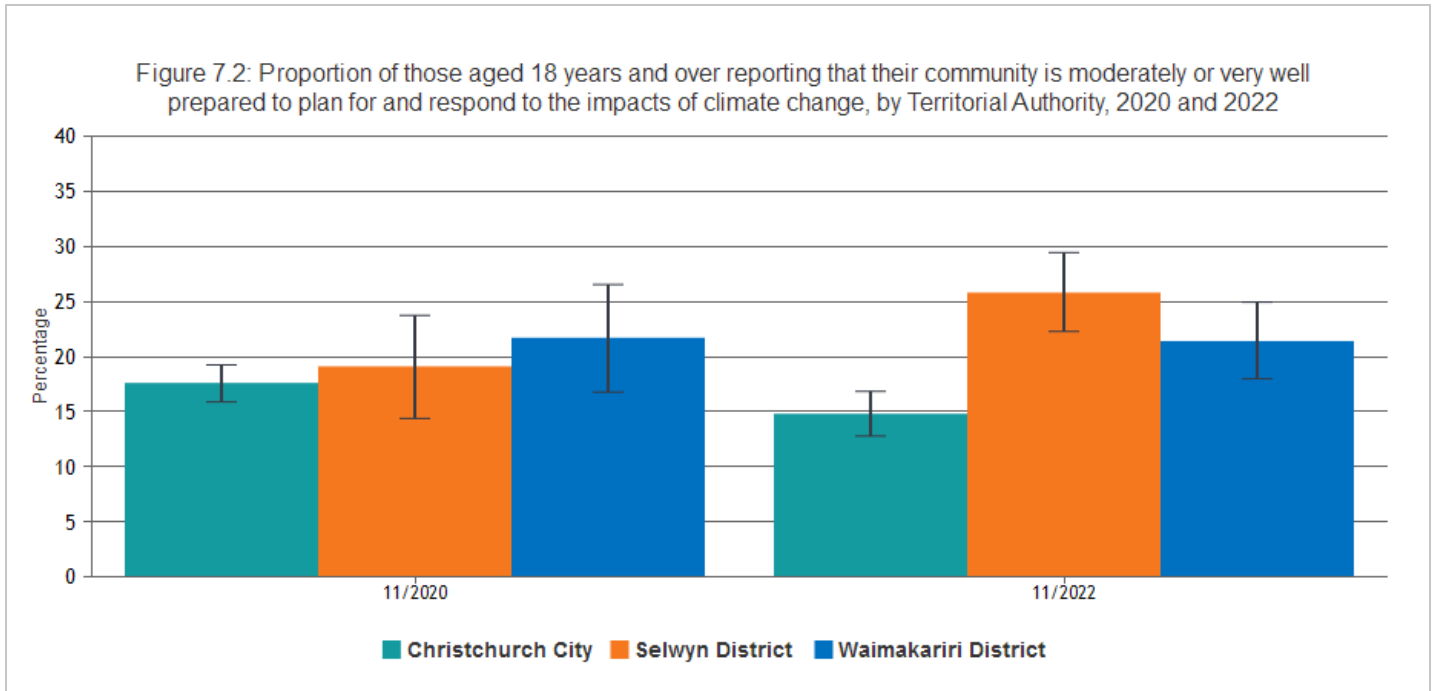
Climate change impacts will be experienced most intensely at the local level, therefore community-based preparation is important to build capacity to adapt and reduce vulnerabilities to climate change [31]. Communities have local knowledge of their social, political, economic, and environmental circumstances, which can inform responses to climate change impacts [32].

This indicator presents the proportion of those 18 years and over who reported that their community is moderately or very well prepared to plan for and respond to the impacts of climate change, in the Canterbury Wellbeing Survey.



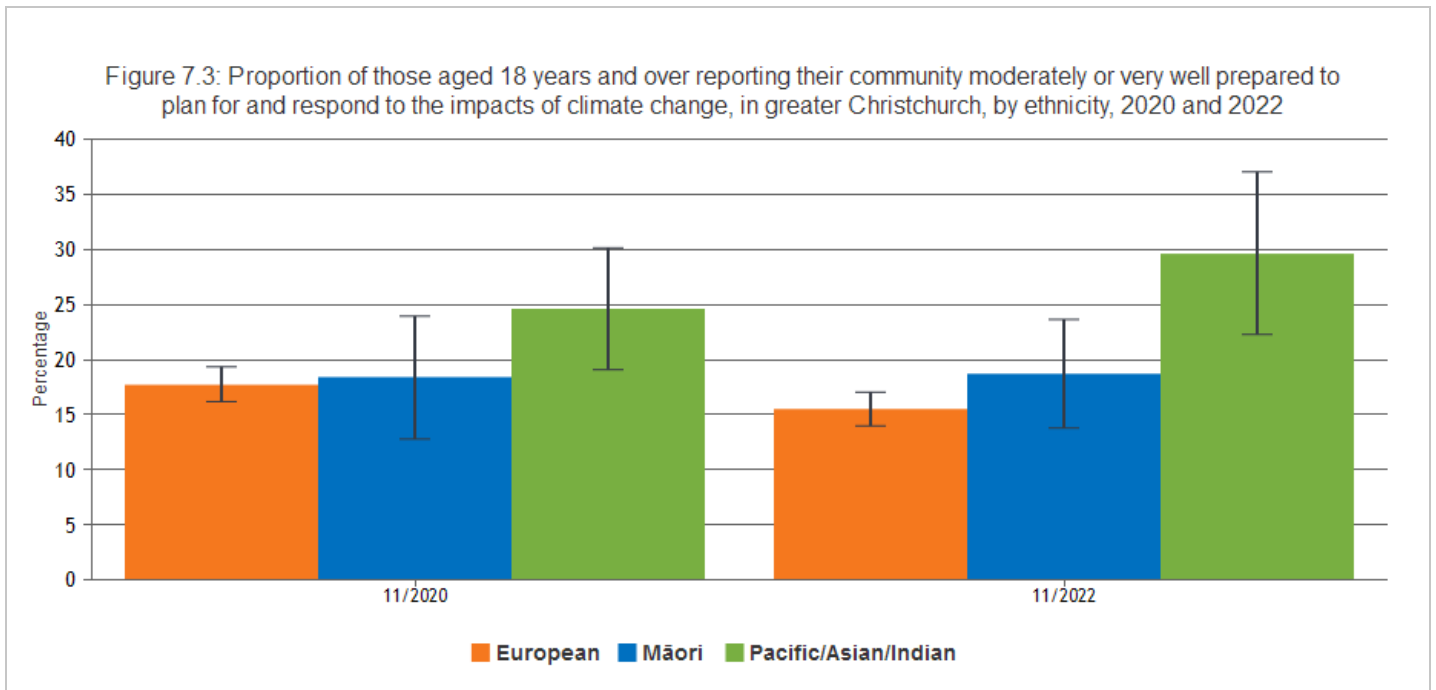
The figure shows the proportion of respondents who indicated that their community is moderately or very well prepared to plan for and respond to the impacts of climate change, in greater Christchurch, 2020 and 2022. The decrease, between 2020 (18.2%) and 2022 (16.8%) is not statistically significant.

Breakdown by Territorial Authority



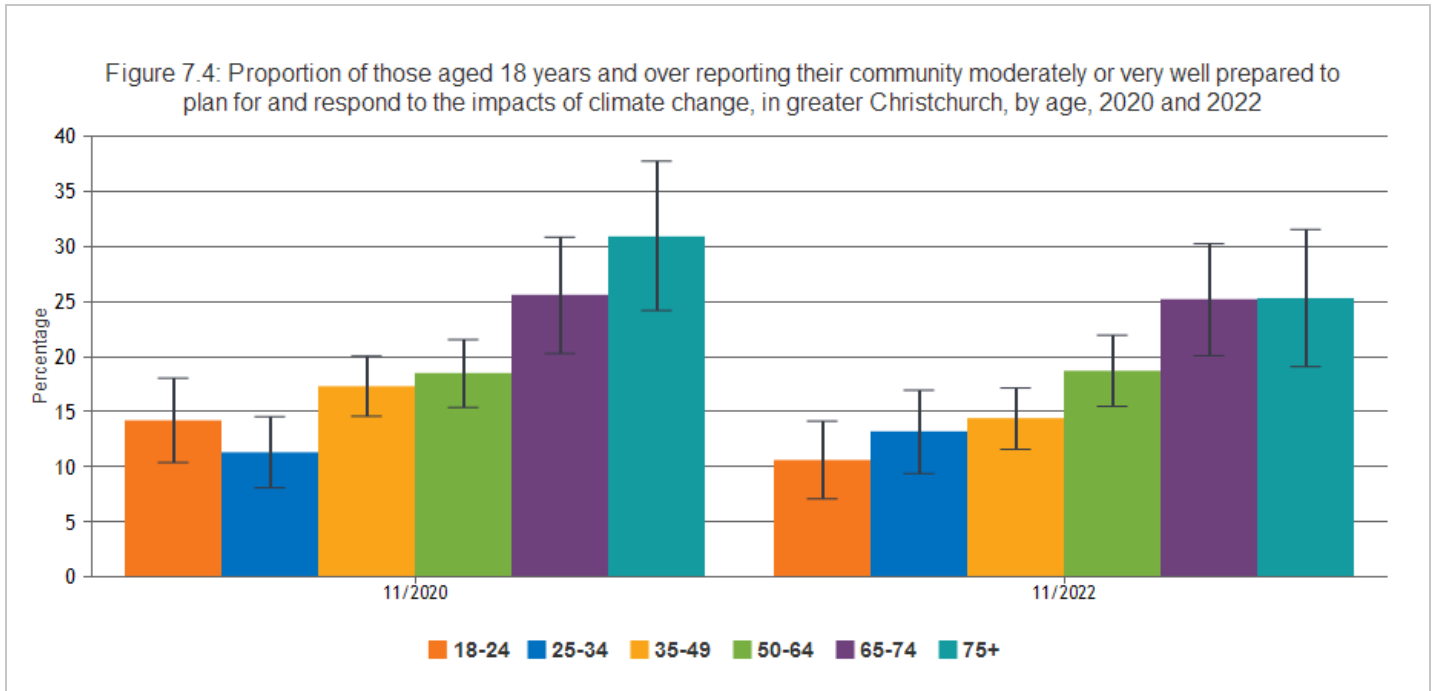
The figure shows that 14.8 percent of respondents in Christchurch City indicated that their community is moderately or very well prepared to plan for and respond to the impacts of climate change, in 2022. In Waimakariri District and Selwyn District, statistically significantly higher proportions of respondents indicated that their community is moderately or very well prepared (21.4% and 25.8%, respectively). The decrease in proportion across greater Christchurch - shown in Figure 7.1 - is wholly attributable to the decrease in Christchurch City.

Breakdown by ethnicity



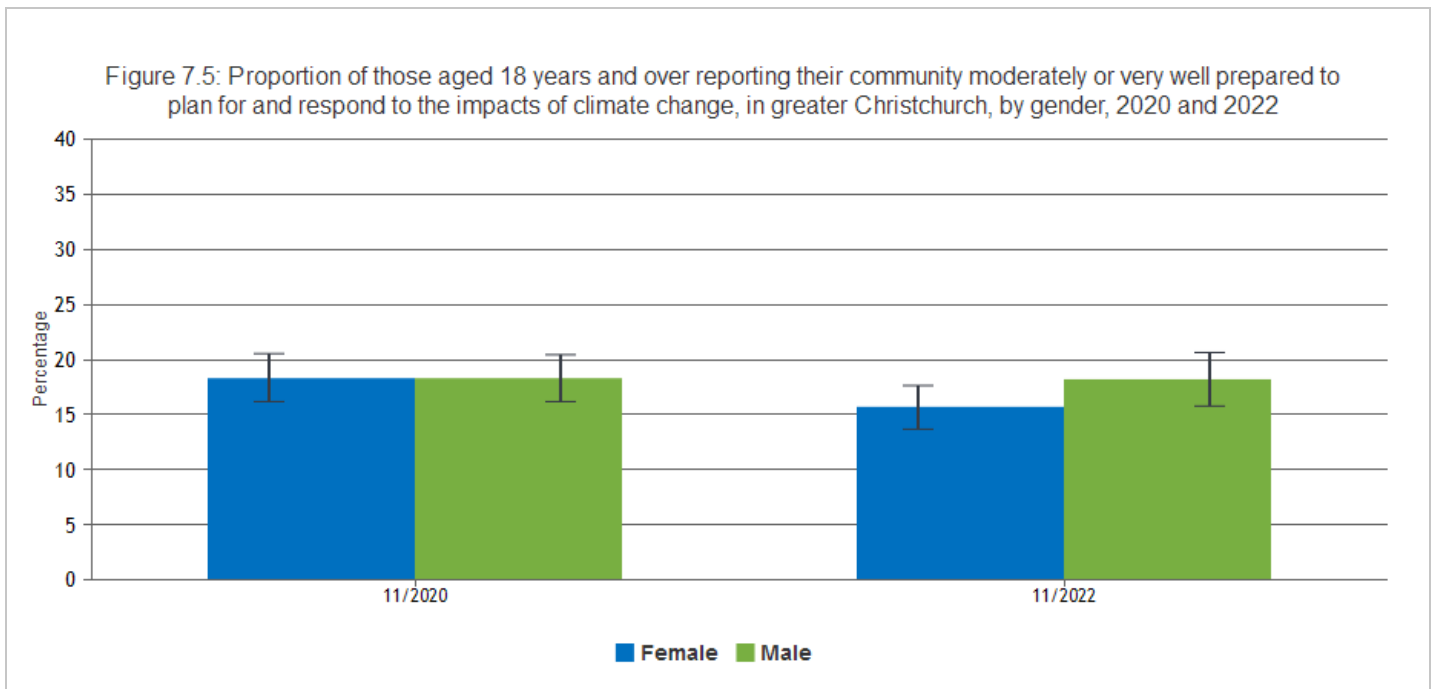
The figure shows differences by ethnicity in the proportion of respondents who reported that their community is moderately or very well prepared to plan for and respond to the impacts of climate change, in greater Christchurch, in 2022. The difference in the proportion of Pacific/Asian/Indian respondents and European respondents that reported that their community is moderately or very well prepared to plan for and respond to the impacts of climate change (29.6% and 15.5% respectively) is statistically significant in 2022.

Breakdown by age



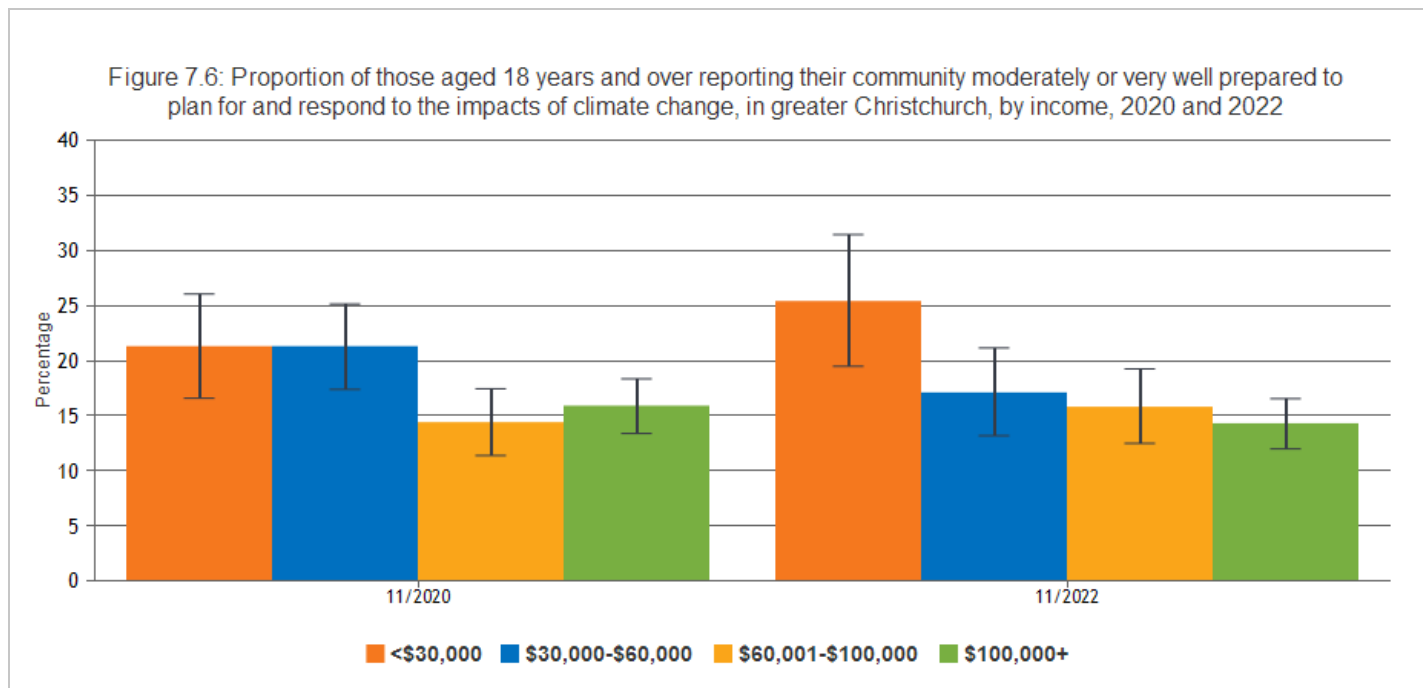
The figure shows a clear positive relationship between perceived climate change preparedness and age. Lower proportions of respondents from younger age groups reported that their community is moderately or very well prepared to plan for and respond to the impacts of climate change in 2022 (10.6% for 18 to 24 years, 13.2% for 25 to 34 years, 14.4% for 35 to 49 years, and 18.7% for 50 to 64 years) compared to the oldest age groups (25.2% for 65 to 74 years and 25.3% for 75+ years). These differences were statistically significant between the three younger age groups (18 to 24, 25 to 34, and 35 to 49 years) and the two oldest age groups (65 to 74 and 75+ years).

Breakdown by gender



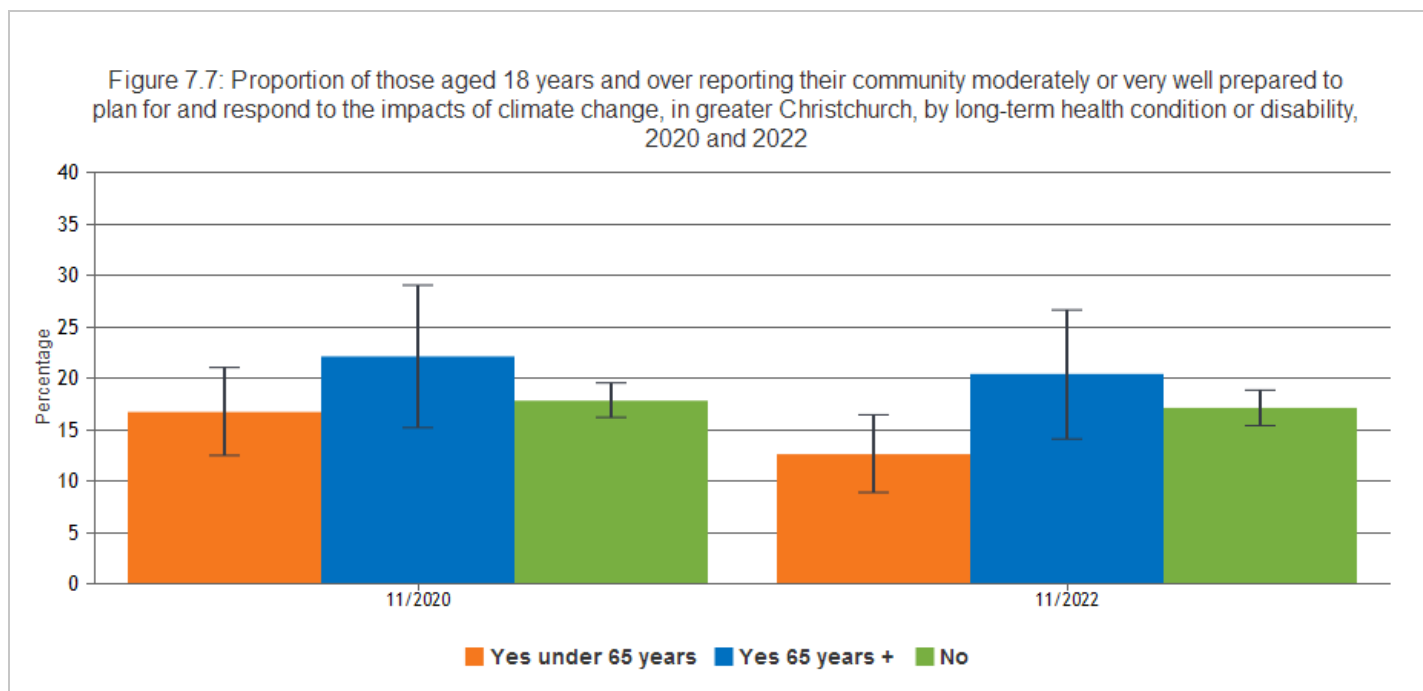
The figure shows no statistically significant difference, by gender, in the proportion of respondents who reported that their community is moderately or very well prepared to plan for and respond to the impacts of climate change, in greater Christchurch in 2022.

Breakdown by income



The figure shows that in 2022, a statistically significantly higher proportion of those in the lowest income group (<\$30,000, 25.4%) reported that their community is moderately or very well prepared to plan for and respond to the impacts of climate change compared with those in the highest income group (\$100,000+, 14.3%). Broadly, the figure indicates a negative income gradient, with increasing income being associated with lower levels of perceived preparedness.

Breakdown by disability



The figure shows no statistically significant differences by long-term health condition or disability (for either age group), in the proportion of respondents who reported that their community is moderately or very well prepared to plan for and respond to the impacts of climate change, in greater Christchurch in 2020 and 2022.

Data Sources

Source: Te Whatu Ora Waitaha Canterbury - formerly Canterbury District Health Board.

Survey/data set: Canterbury Wellbeing Survey to 2022. Access publicly available data from Te Mana Ora | Community and Public Health website www.cph.co.nz/your-health/wellbeing-survey/

Source data frequency: Annually.

Metadata for this indicator is available at <https://www.canterburywellbeing.org.nz/index-data>

REFERENCES

- 1 Handy SL, Boarnet MG, Ewing R, Killingsworth RE (2002) How the built environment affects physical activity. *American Journal of Preventive Medicine* 23: 64-73.
- 2 Perdue WC, Stone LA, Gostin LO (2003) The built environment and its relationship to the public's health: The legal framework. *American Journal of Public Health* 93: 1390-1394.
- 3 Sallis JF, Spoon C, Cavill N, Engelberg JK, Gebel K, et al. (2015) Co-benefits of designing communities for active living: An exploration of literature. *International Journal of Behavioral Nutrition and Physical Activity* 12: 30.
- 4 Björk J, Albin M, Grahn P, Jacobsson H, Ardö J, et al. (2008) Recreational values of the natural environment in relation to neighbourhood satisfaction, physical activity, obesity and wellbeing. *Journal of Epidemiology and Community Health* 62: e2.
- 5 Blaschke P (2013) Health and wellbeing benefits of conservation in New Zealand. *Science for Conservation* 321.
- 6 de Dios Ortúzar J, Willumsen LG (2011) *Modelling Transport*. New York: Wiley.
- 7 Bennett H, Jones R, Keating G, Woodward A, Hales S, et al. (2014) Health and equity impacts of climate change in Aotearoa-New Zealand, and health gains from climate action. *New Zealand Medical Journal* 127.
- 8 Royal Society Te Apārangi (2017) *Human Health Impacts of Climate Change for New Zealand: Evidence Summary* Wellington.
- 9 Canterbury Earthquake Recovery Authority (2012) *CERA Wellbeing Survey 2012 Report, prepared by AC Nielsen for the Canterbury Earthquake Recovery Authority*. AC Nielsen and the Canterbury Earthquake Recovery Authority.
- 10 Cameron MP, Cochrane W, McNeill K, Melbourne P, Morrison SL, et al. (2012) Alcohol outlet density is related to police events and motor vehicle accidents in Manukau City, New Zealand. *Aust N Z J Public Health* 36: 537-542.
- 11 Livingston M, Chikritzhs T, Room R (2007) Changing the density of alcohol outlets to reduce alcohol-related problems. *Drug and Alcohol Review* 26: 557-566.
- 12 Popova S, Giesbrecht N, Bekmuradov D, Patra J (2009) Hours and days of sale and density of alcohol outlets: Impacts on alcohol consumption and damage: A systematic review. *Alcohol and Alcoholism* 44: 500-516.
- 13 Cameron MP, Cochrane W, Gordon C, Livingston M (2013) *The locally-specific impacts of alcohol outlet density in the North Island of New Zealand, 2006-2011. Research report commissioned by the Health Promotion Agency*. Wellington: Health Promotion Agency.
- 14 Browne M, Bellringer M, Greer N, Kolandai-Matchett K, Langham E, et al. (2017) *Measuring the burden of gambling harm in New Zealand*: Central Queensland University and Auckland University of Technology.
- 15 Abbott M, Bellringer M, Garrett N (2018) *New Zealand National Gambling Study: Wave 4 (2015). Report number 6*. Auckland, New Zealand: Auckland University of Technology, Gambling & Addictions Research Centre.
- 16 Rook H, Rippon R, Pauls R, Doust E, Prince J (2018) *Gambling harm reduction needs assessment*. Wellington, New Zealand: Sapere Research Group.
- 17 Kristiansen S, Trabjerg Camilla M (2016) Legal gambling availability and youth gambling behaviour: A qualitative longitudinal study. *International Journal of Social Welfare* 26: 218-229.
- 18 Welte JW, Barnes GM, Tidwell M-CO, Hoffman JH (2009) Legal gambling availability and problem gambling among adolescents and young adults. *International Gambling Studies* 9: 89-99.
- 19 Pearce J, Mason K, Hiscock R, Day P (2008) A national study of neighbourhood access to gambling opportunities and individual gambling behaviour. *Journal of Epidemiology and Community Health* 62: 862-868.
- 20 Binde P (2013) Why people gamble: A model with five motivational dimensions. *International Gambling Studies* 13: 81-97.
- 21 Wardle H, Keily R, Astbury G, Reith G (2014) 'Risky places?': Mapping gambling machine density and socio-economic deprivation. *J Gamb Stud* 30: 201-212.
- 22 Beckert J, Lutter M (2009) The inequality of fair play: Lottery gambling and social stratification in Germany. *European Sociological Review* 25: 475-488.
- 23 Orford J, Wardle H, Griffiths M, Sproston K, Erens B (2010) The role of social factors in gambling: Evidence from the 2007 British Gambling Prevalence Survey. *Community, Work & Family* 13: 257-271.
- 24 Abbott M, Binde P, Hodgins D, Korn D, Pereira A, et al. (2013) *Conceptual Framework of Harmful Gambling: An International Collaboration*. Guelph, Ontario: Problem Gambling Research Centre (OPGRC).

- 25 Easton B (2002) Gambling in New Zealand: An economic overview. In: Curtis, B, editor. *Gambling in New Zealand*. Palmerston North: Dunmore Press. pp. 45-58.
- 26 Department of Internal Affairs Gambling in Pubs and Clubs (Class 4). Wellington: The Department of Internal Affairs.
- 27 Canterbury DHB (2019) *Canterbury Wellbeing Survey, June 2019: Report prepared by Nielsen for the Canterbury District Health Board and partnering agencies*. Christchurch: Canterbury District Health Board.
- 28 Environment Canterbury Regional Council (2018) *Air Quality in the Canterbury Region- Winter 2018 Update: Environment Canterbury Environmental Snapshot Report*. Christchurch: Environment Canterbury Regional Council.
- 29 World Health Organization (2013) *Health effects of particulate matter*. Copenhagen: World Health Organization.
- 30 World Health Organization (2005) *WHO Air quality guidelines for particulate matter, ozone, nitrogen dioxide and sulfur dioxide: Global update 2005, Summary of risk assessment*.
- 31 McNamara KE, Buggy L (2017) Community-based climate change adaptation: a review of academic literature. *Local Environment* 22: 443-460.
- 32 Ebi KL, Semenza JC (2008) Community-based adaptation to the health impacts of climate change. *American Journal of Preventive Medicine* 35: 501-507.

FIND OUT MORE

> **Greater Christchurch Partnership indicators**

This website provides high level outcomes monitoring information for the Greater Christchurch Partnership – including urban and environmental indicators.

> **Christchurch City Council Life in Christchurch Transport survey**

A 2021 survey of Christchurch residents about their transport use.

> **Christchurch City Council Resident survey**

This annual survey of Christchurch residents includes questions about the built environment and community facilities.

> **Gambling information**

A Department of Internal Affairs webpage summarising the gambling-related information the department provides.

> **Local air quality data**

An Environment Canterbury webpage providing air quality data for the current year.

> **Community and Public Health air quality information**

A Te Mana Ora | Community and Public Health webpage on air quality.

> **Canterbury Regional Spaces and Places Plan**

A Sport Canterbury and Greater Christchurch Partnership plan for the region's sporting facilities, updated in 2021.

> **Environmental health indicators**

A Ministry of Health-funded Massey University website that provides data at a national and regional level on a number of environmental health-related indicators including air quality, recreational water, drinking-water quality, and transport.

> **Christchurch City Council Life in Christchurch natural environment survey**

A 2018 survey of Christchurch residents about their experiences of the natural environment.

> **Community and Public Health climate change information**

A Te Mana Ora | Community and Public Health webpage on climate change.

> **Environmental reporting series: Our atmosphere and climate 2023**

A series co-published by Statistics NZ and the Ministry for the Environment about changes in New Zealand's climate.