

ENVIRONMENT

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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.

Overall, a large proportion of greater Christchurch respondents to the Canterbury Wellbeing Survey is satisfied with the available community facilities. There has been a statistically significant increase in satisfaction with the ease of access to suitable transport, between the 2018 and 2019 Canterbury Wellbeing Surveys (most notably in Christchurch City, as well as in Waimakariri District), with these findings remaining stable in 2020. 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, 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 increased between 2019 and 2021.

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 (18.2% across greater Christchurch) agreeing that their community is moderately or very well prepared to plan for and respond to the impacts of climate change.

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, 2018, 2019 and 2020).

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 2020, and for access to transport in 2017 and 2019).

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 to 24, 25 to 34, and 35 to 49 years) compared to the two oldest age groups (65 to 74 and 75+ years).

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 wellbeing impacts.

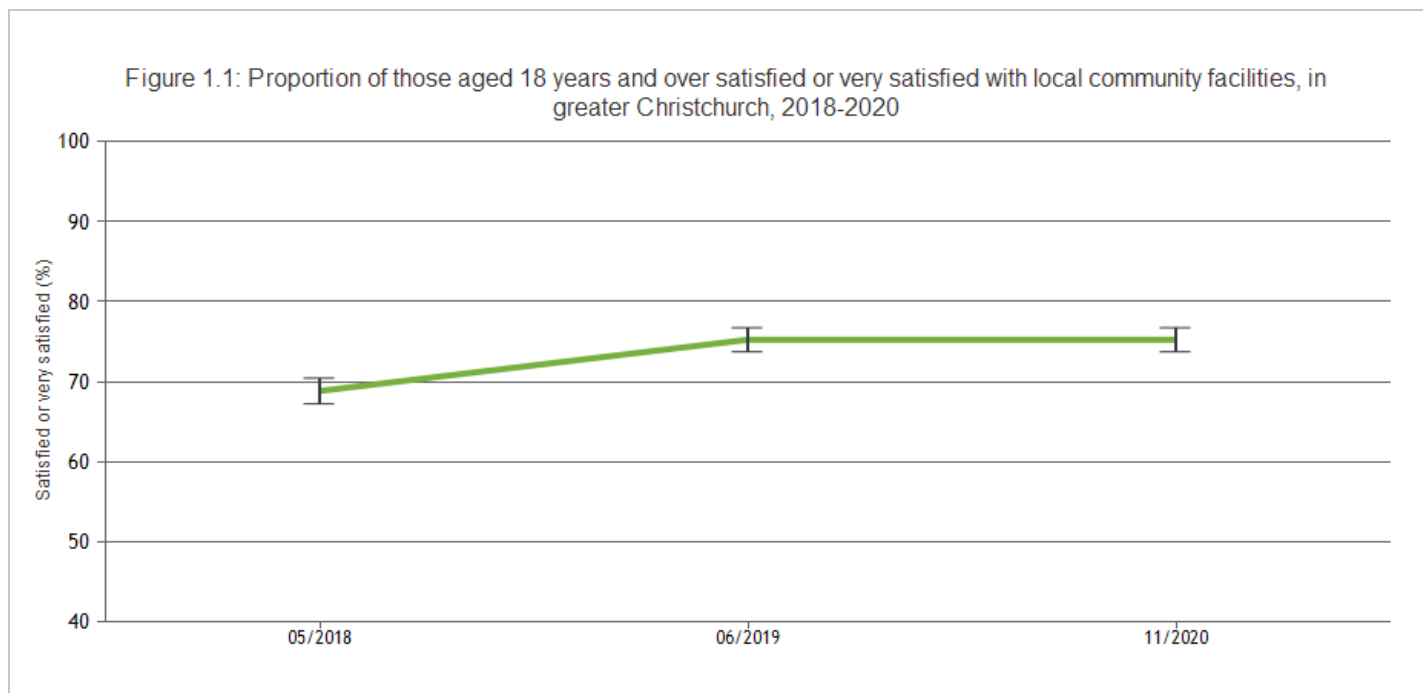
Indicators in this domain

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

COMMUNITY FACILITIES

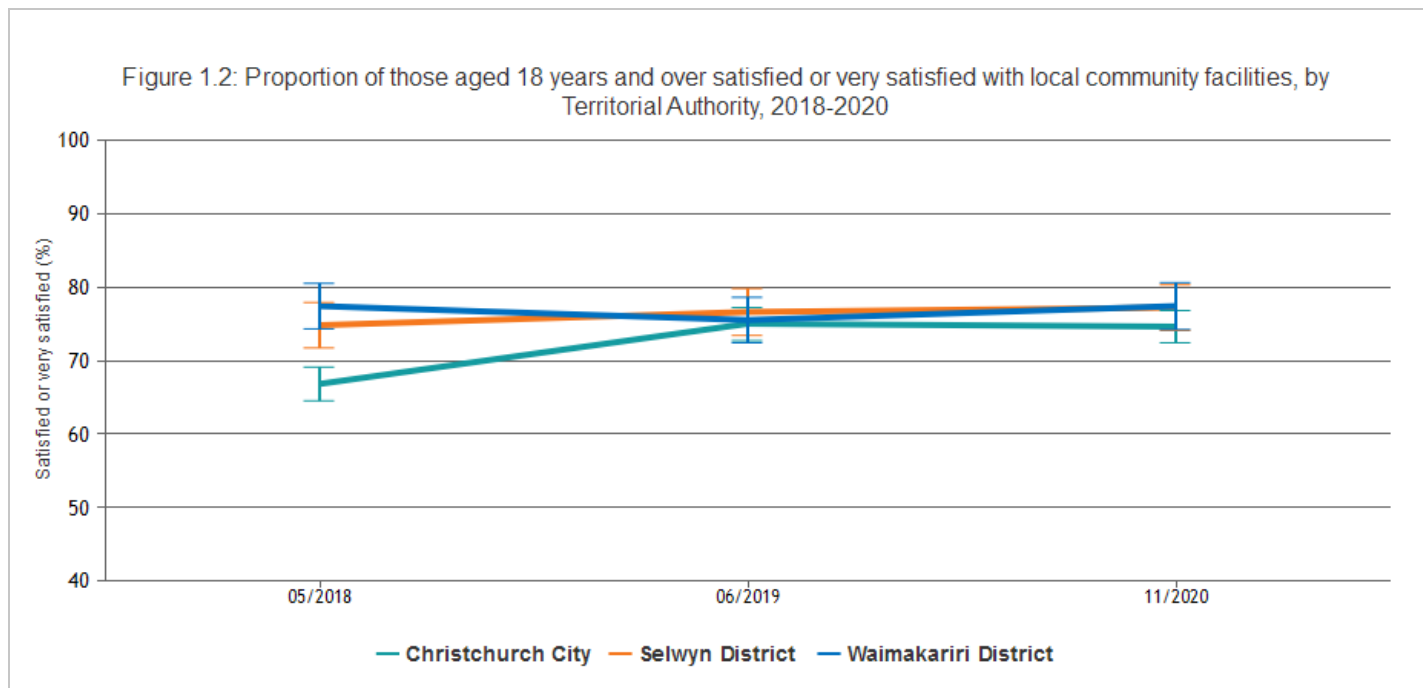
A number of questions included in the Canterbury Wellbeing Survey ask respondents about their satisfaction with various aspects of their everyday life. One of these questions asks survey respondents to rate their satisfaction with local community facilities.

This indicator presents the proportion of those 18 years and over satisfied or very satisfied with local community facilities.



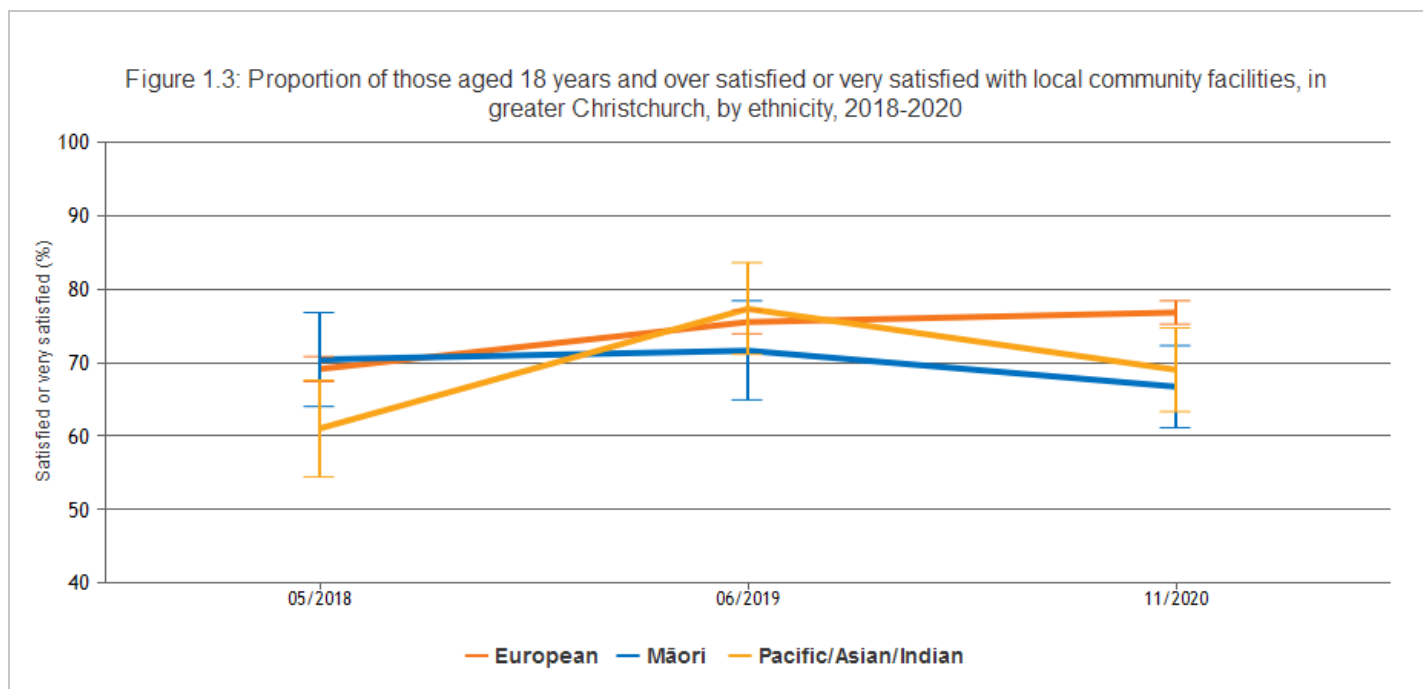
The figure shows that in both 2019 and 2020, 75.2 percent of all respondents to the Canterbury Wellbeing Survey indicated that they were satisfied or very satisfied with local community facilities. The earlier increase between 2018 and 2019 (6.4 percentage points), is statistically significant.

Breakdown by Territorial Authority



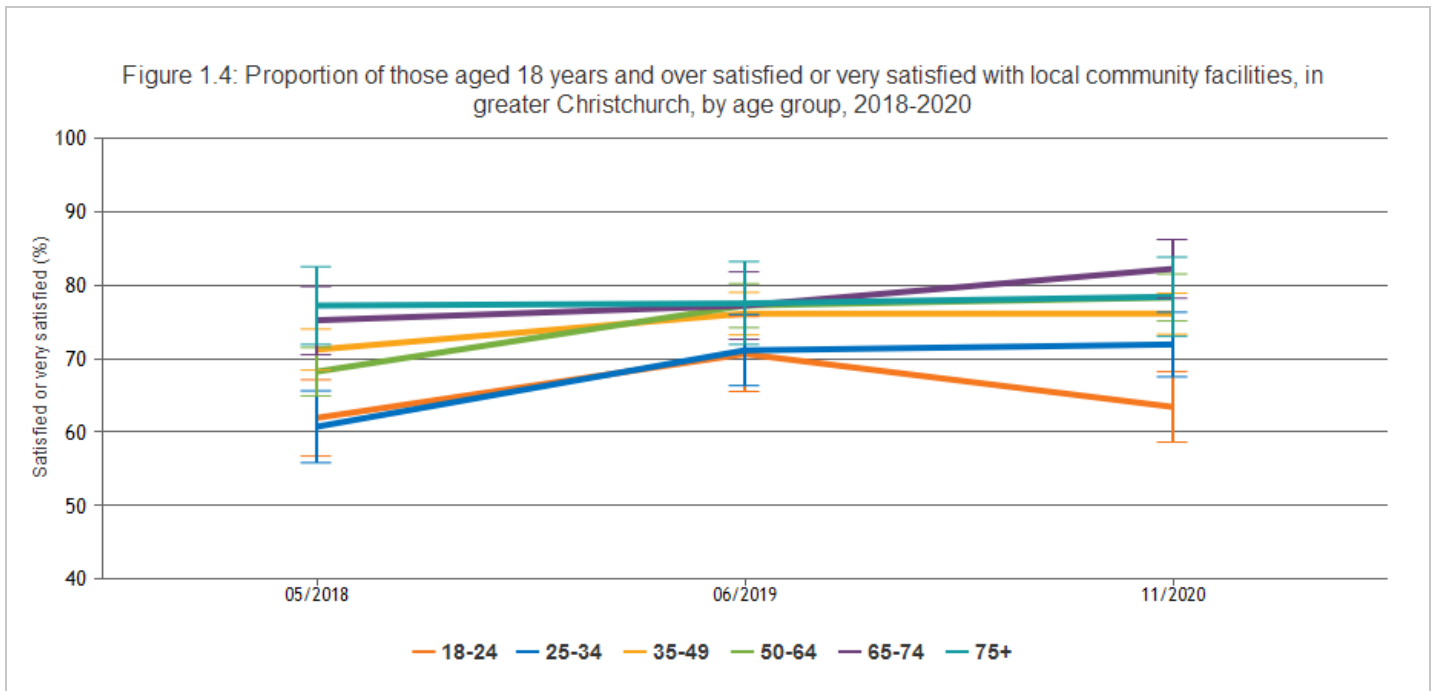
In 2018, there were statistically significantly higher levels of satisfaction with local community facilities in Waimakariri District and Selwyn District, compared with Christchurch City (77.4%, 74.8%, and 66.8% respectively). However, the 2019 and 2020 results show increased satisfaction levels for Christchurch City, with levels of satisfaction with community facilities now similar across the three Territorial Authorities.

Breakdown by ethnicity



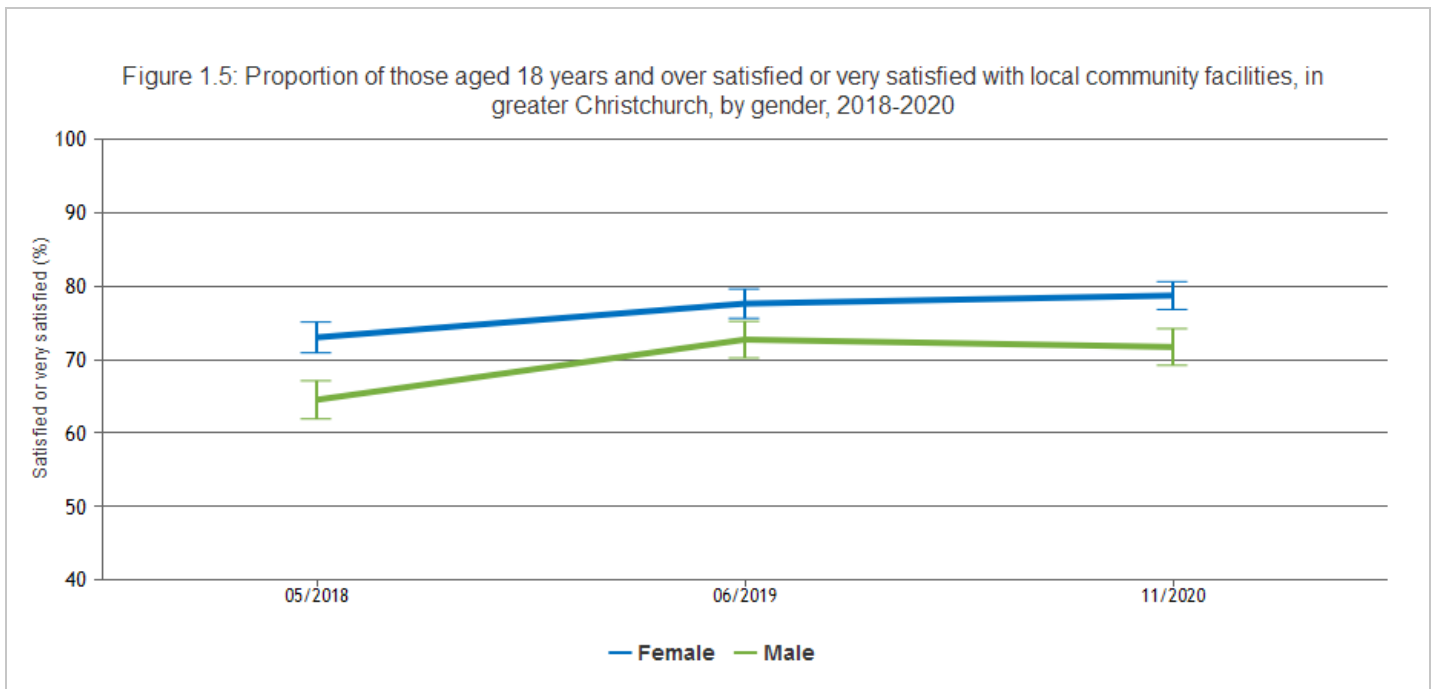
The figure shows differences by ethnicity in the proportion of respondents who indicated that they were satisfied or very satisfied with local community facilities in greater Christchurch. The proportion of European and Pacific/Asian/Indian respondents who indicated that they were satisfied or very satisfied with local community facilities increased significantly between 2018 and 2019, and remained statistically similar in 2020. However, there was no significant change for Māori respondents during this time. The level of satisfaction in 2020 for European respondents is statistically significantly higher than for Pacific/Asian/Indian and Māori respondents (76.8%, 69.0% and 66.7% respectively).

Breakdown by age



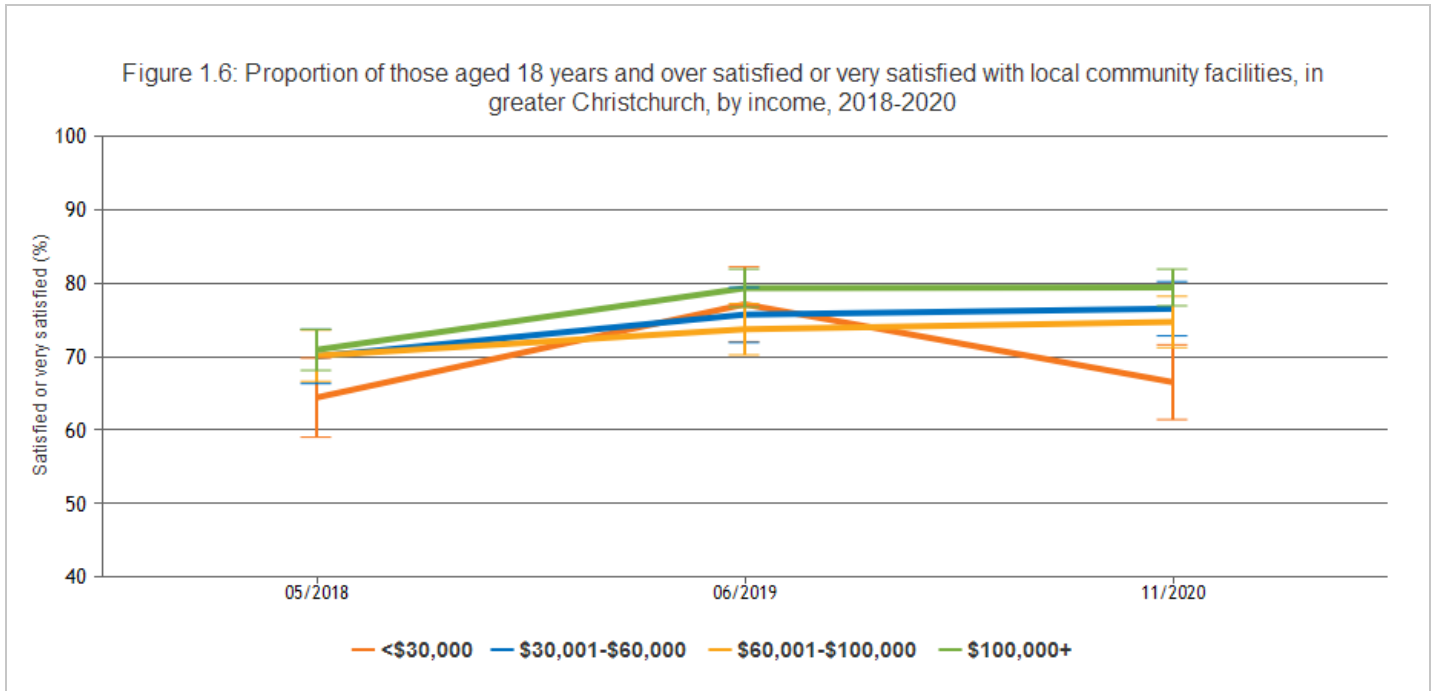
The figure shows some differences by age group in the proportion of respondents who indicated that they were satisfied or very satisfied with local community facilities in greater Christchurch between 2018 and 2020. In 2018 there were significantly lower levels of satisfaction among the two younger age groups (18 to 24 and 25 to 34 years) compared to the 35 to 49, 65 to 74, and 75+ years age groups. In 2019 convergence is apparent between the groups, with no statistically significant differences in satisfaction levels between any of the age groups. In 2020 a significantly lower proportion of young people (18 to 24 years) indicated that they were satisfied or very satisfied with local community facilities compared to all other age groups, with the exception of 25 to 34 year olds.

Breakdown by gender



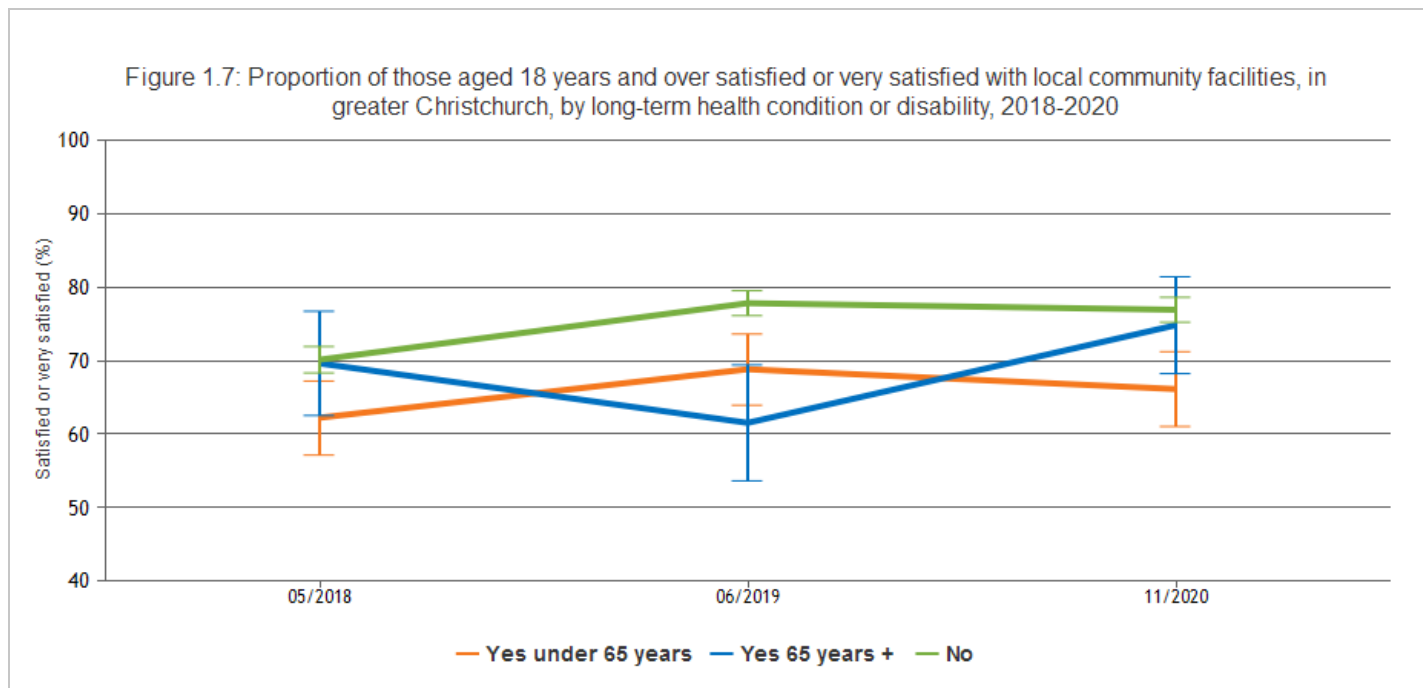
The figure shows that a statistically significantly higher proportion of female respondents in greater Christchurch indicated that they were satisfied or very satisfied with local community facilities in 2018, 2019 and 2020 (73.0%, 77.6% and 78.7%, respectively) compared to males (64.5%, 72.7% and 71.7%, respectively). For both females and males there was a significant increase in satisfaction with local community facilities between 2018 and 2019, which was maintained in 2020.

Breakdown by income



The figure shows no statistically significant differences in the proportion of respondents in greater Christchurch who indicated that they were satisfied or very satisfied with local community facilities, by income level in either 2018 or 2019. However, in 2020, a significantly lower proportion of those in the lowest income group (<\$30,000, 66.5%) indicated that they were satisfied or very satisfied with local community facilities than those in the next lowest income group (\$30,000-\$60,000, 76.5%) and the highest income group (\$100,000+, 79.4%). 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. This proportion decreased significantly for the lowest income group in 2020 (from 77.1% in 2019 to 66.5% in 2020).

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. 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 in 2018 or 2020. 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.

Between 2018 and 2019, the proportion of those without a long-term health condition or disability who are satisfied or very satisfied with community facilities increased significantly, and remained stable in 2020. For those with a long-term health condition or disability, either aged under 65 years or aged 65 years and over, there was no statistically significant change in level of satisfaction over time.

Data Sources

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

Survey/data set: Canterbury Wellbeing Survey to 2020. Access publicly available data from Te Mana Ora | Community and Public Health website www.cph.co.nz/your-health/wellbeing-survey/

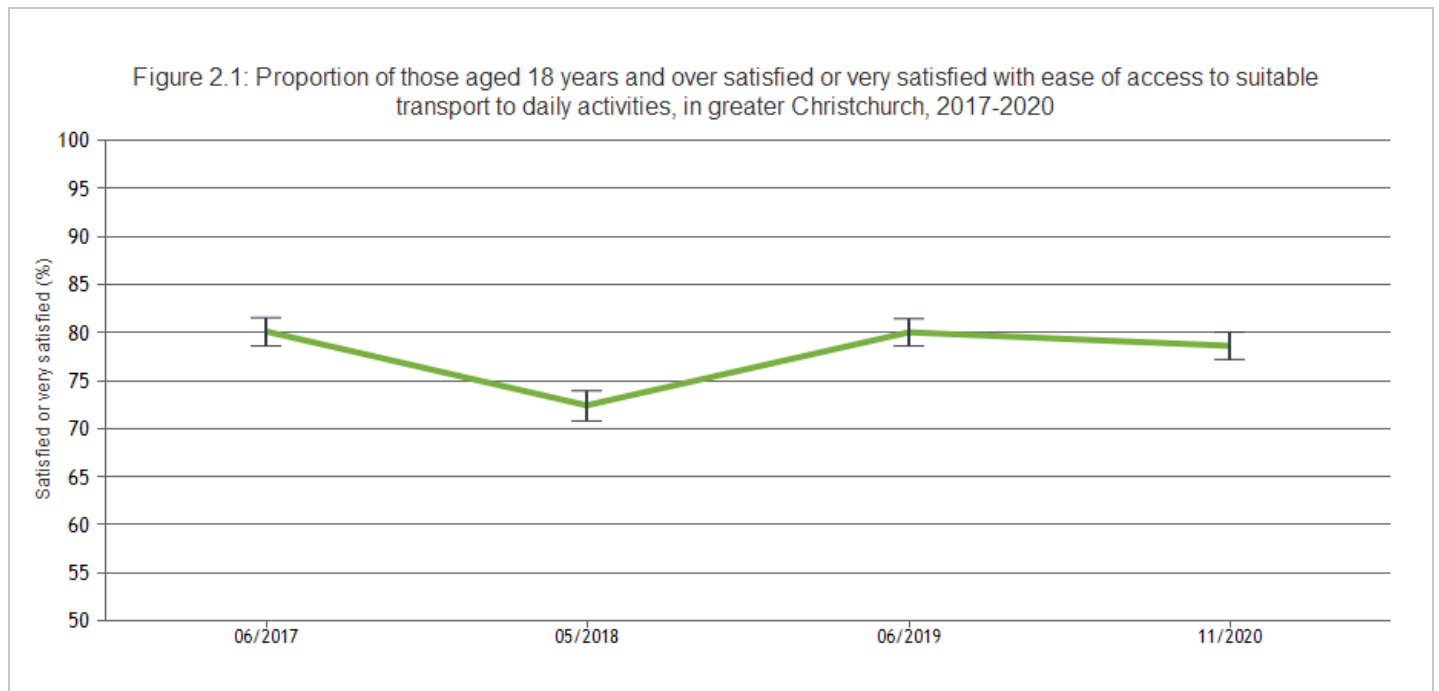
Source data frequency: Annually.

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

ACCESS TO TRANSPORT

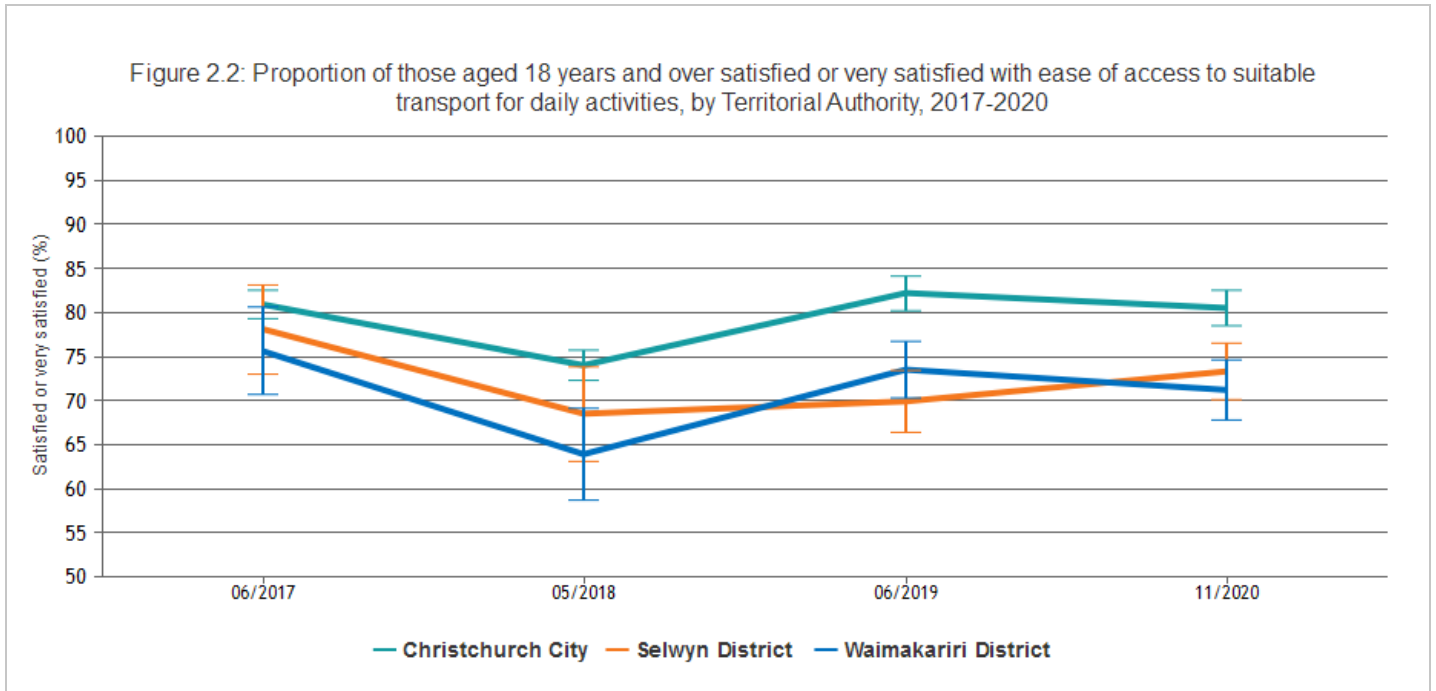
Transport systems and infrastructure (including public transport) influence health and wellbeing by enabling access to other important resources, such as employment, education, and social and health care services. Transport infrastructure that is safe and easy to navigate increases the likelihood of 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 2020.



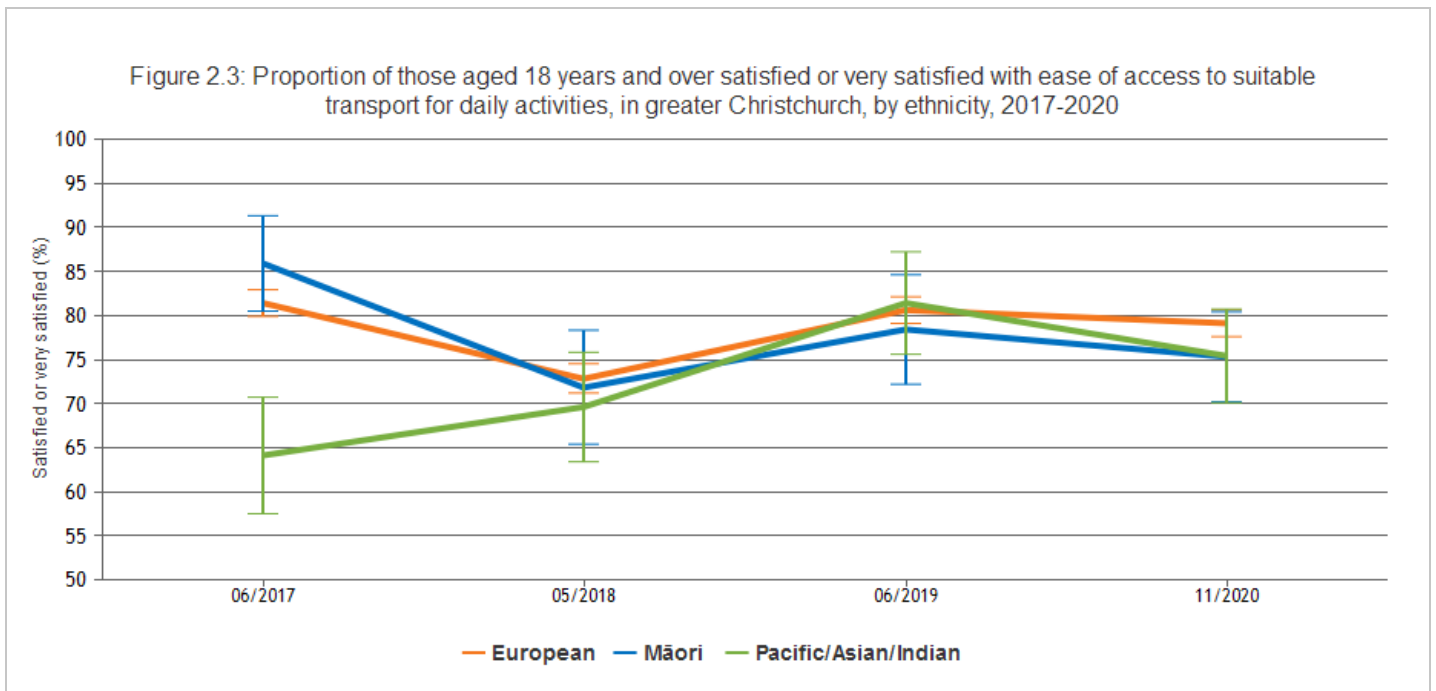
The figure shows that the proportion of respondents who indicated that they were satisfied or very satisfied with their ease of access to suitable transport to daily activities, increased significantly from 72.4 percent in 2018 to 80 percent in 2019 and has remained stable in 2020 (78.6%).

Breakdown by Territorial Authority



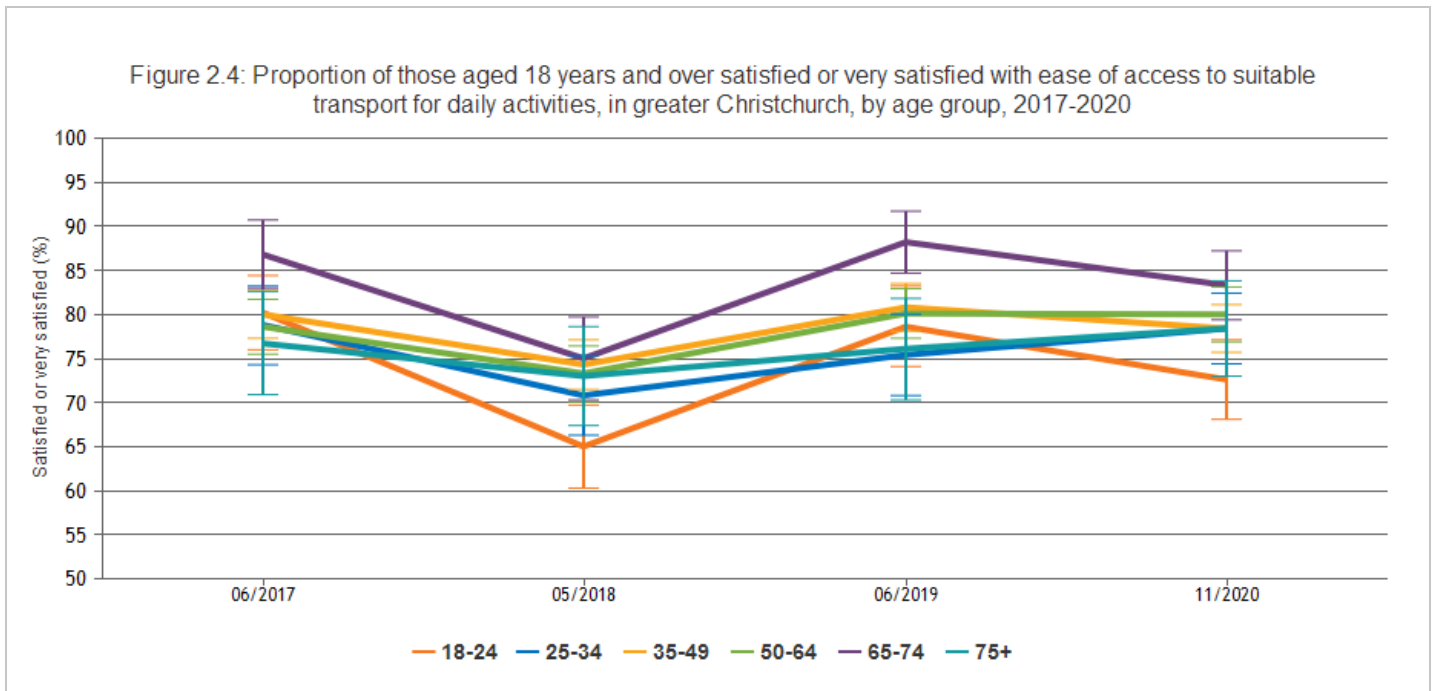
The figure shows that satisfaction with ease of access to suitable transport decreased over the 2017 to 2018 time period then increased over the 2018 to 2019 time period: in Christchurch City (74.0% to 82.2%; +8.2 percentage points); Selwyn District (68.5% to 69.9%; +1.4 percentage points); and Waimakariri District (63.9% to 73.5%; +9.6 percentage points). The increase in satisfaction reported by Christchurch City and Waimakariri District respondents from 2018 to 2019 is statistically significant. 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 2020 for any of the three Territorial Authorities.

Breakdown by ethnicity



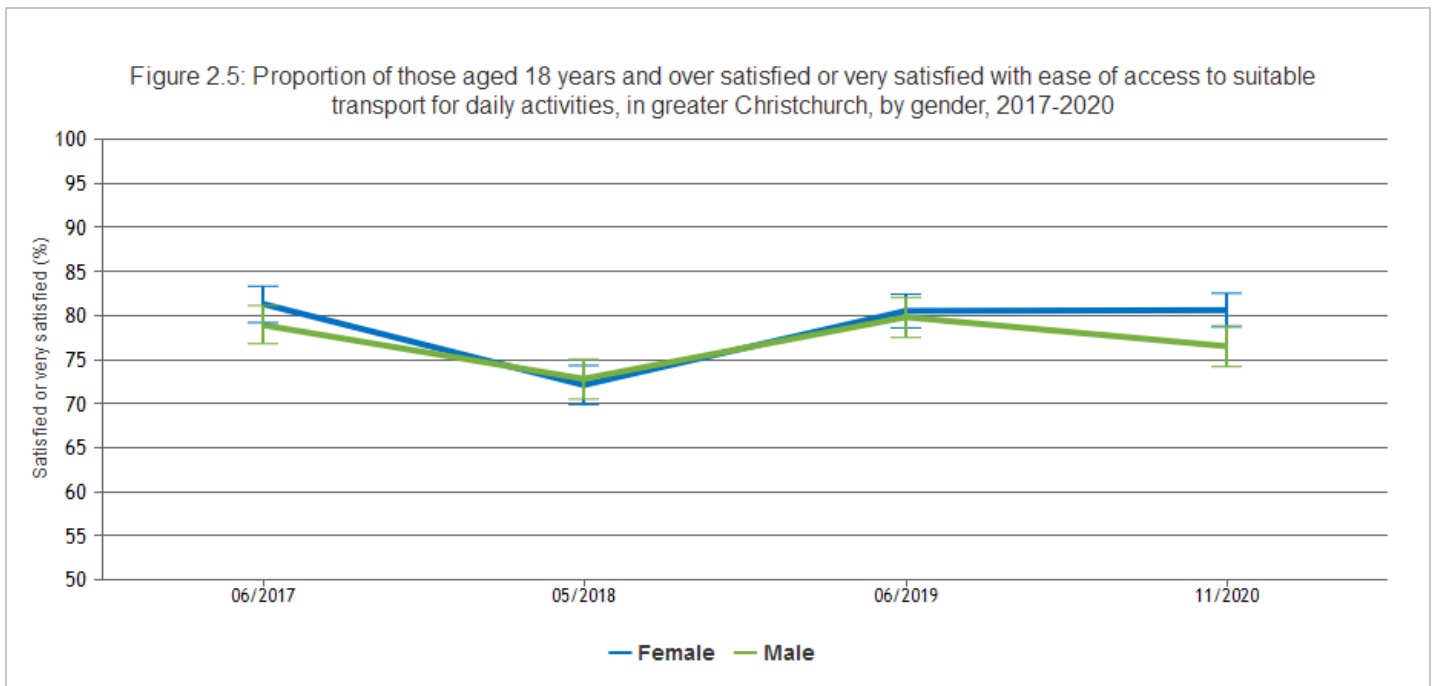
The figure shows that the proportion of European, Māori, and Pacific/Asian/Indian respondents who reported being satisfied or very satisfied with their ease of access to suitable transport, converged across greater Christchurch from 2017 to 2018. This pattern of convergence was followed by an overall increase in satisfaction from 2018 to 2019, which remained stable in 2020. The differences between ethnic groups were not statistically different from 2018 to 2020.

Breakdown by age



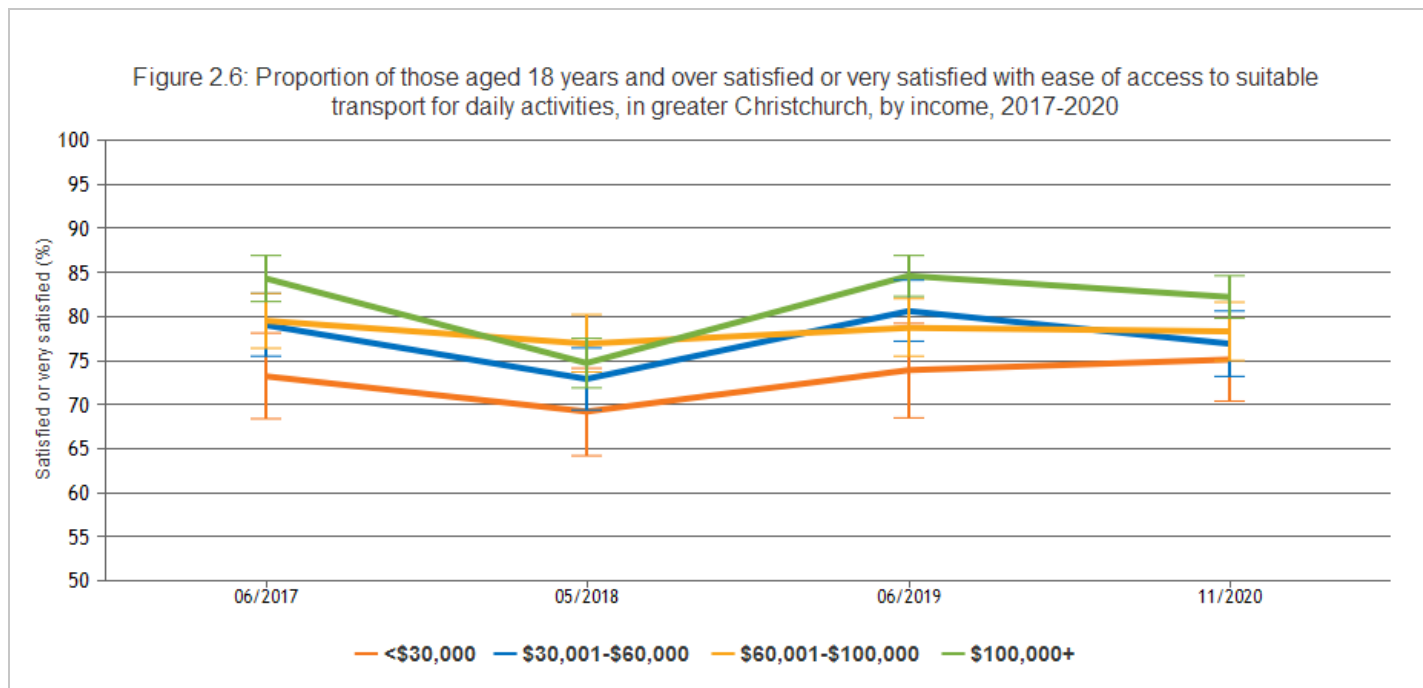
The figure shows that the proportion of respondents who reported being satisfied or very satisfied with their ease of access to suitable transport decreased for all age groups from 2017 to 2018. The largest decrease was in the 18 to 24 years age group, for which the proportion decreased by 15 percentage points (80.2% in 2017 and 65.0% in 2018). Satisfaction with ease of access to suitable transport has increased since 2018 among all age groups, significantly so among those aged 50-64 years, and 65-74 years. In 2020, the level of satisfaction was statistically similar between age groups with the exception of the proportion for the 65 to 74 years age group being statistically significantly higher than for the 18 to 24 years age group (83.3% and 72.6% respectively).

Breakdown by gender



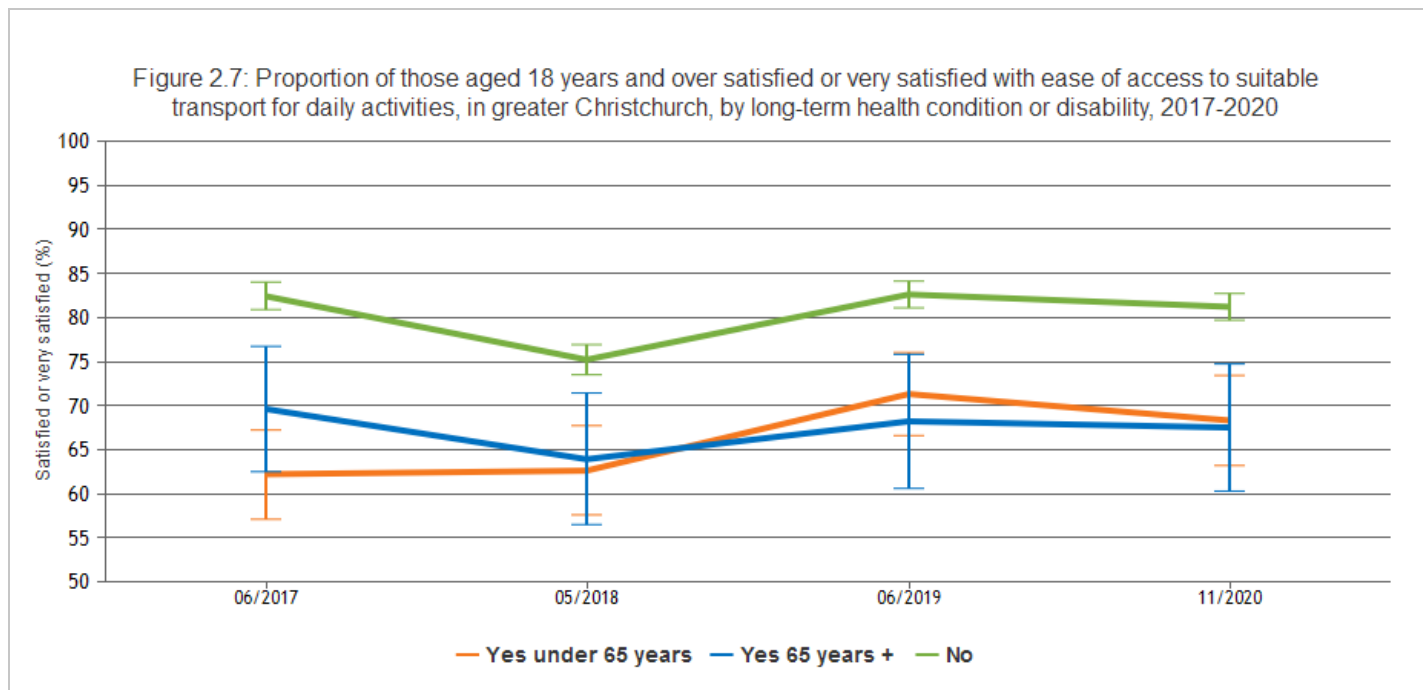
The figure shows no statistically significant differences in the proportion of female and male respondents who reported being satisfied or very satisfied with their ease of access to suitable transport from 2017 to 2020. After a significant decrease for both males and females between 2017 and 2018, satisfaction with ease of access to suitable transport returned to previous levels in 2019 and remained stable in 2020.

Breakdown by income



The figure shows no statistically significant differences in the proportion of respondents who indicated that they were satisfied or very satisfied with their ease of access to transport, in greater Christchurch, by annual household income in 2020 (75.1% for <\$30,000 to 82.2% for \$100,000+). However, there is a general pattern of increasing satisfaction with increasing income. In 2017 and 2019 satisfaction with ease of access to transport was statistically significantly different between the lowest and highest income groups.

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 2020 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 2020. 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.

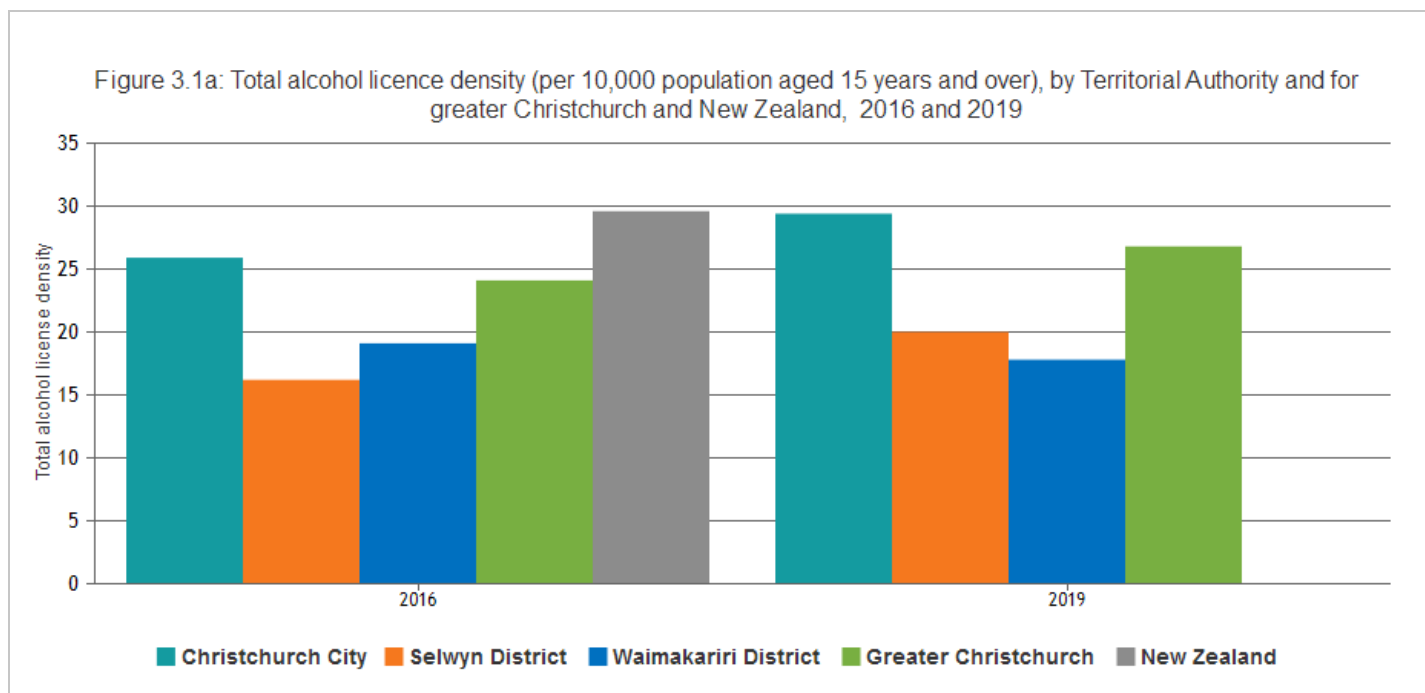
Metadata for this indicator is available at <https://www.canterburywellbeing.org.nz/index-data>

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].

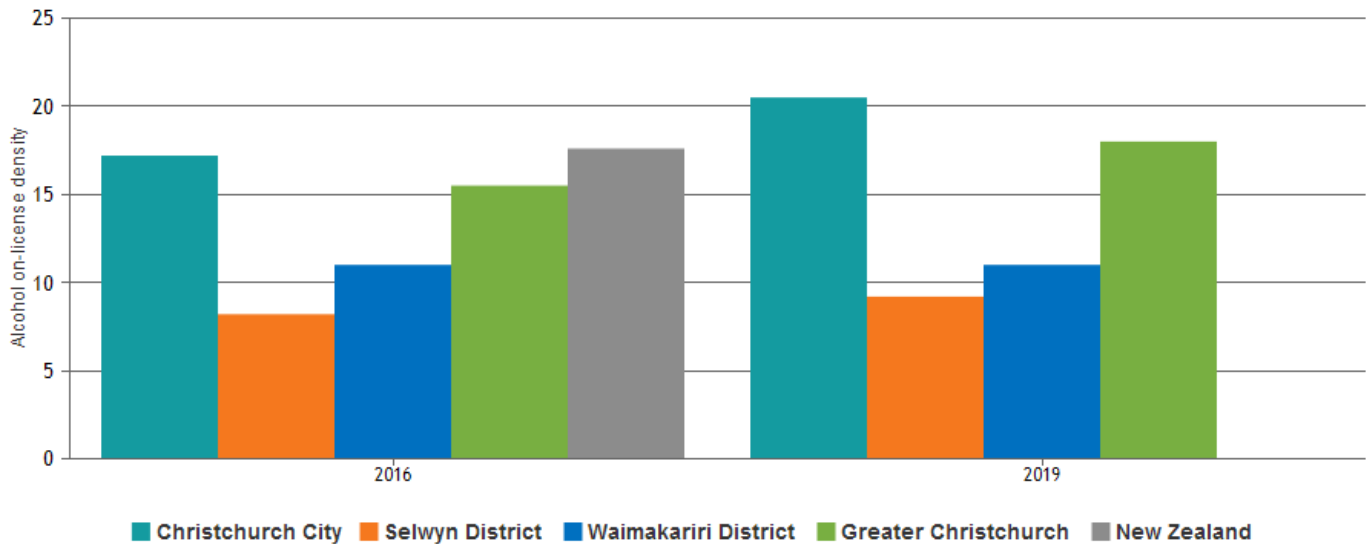
This indicator presents alcohol licence density per 10,000 population aged 15 years and over, by licence type, for greater Christchurch, Christchurch City, Selwyn District, Waimakariri District, and New Zealand, for 2016 and 2019 (currently, the 2019 New Zealand comparator is only available for total 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.



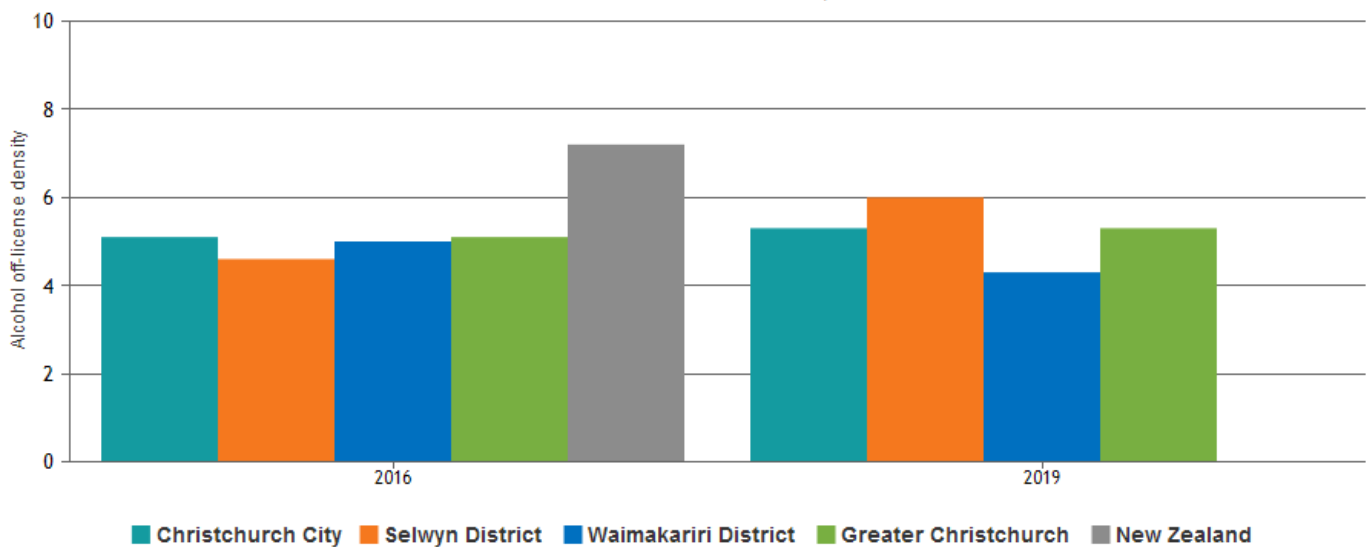
The figure shows a general increase in total alcohol licence density in greater Christchurch between 2016 and 2019 (total of on-licence, off-licence, and club licence densities: 24.1/10,000 population and 26.8/10,000 population, respectively). In 2016, the total alcohol licence density in greater Christchurch 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



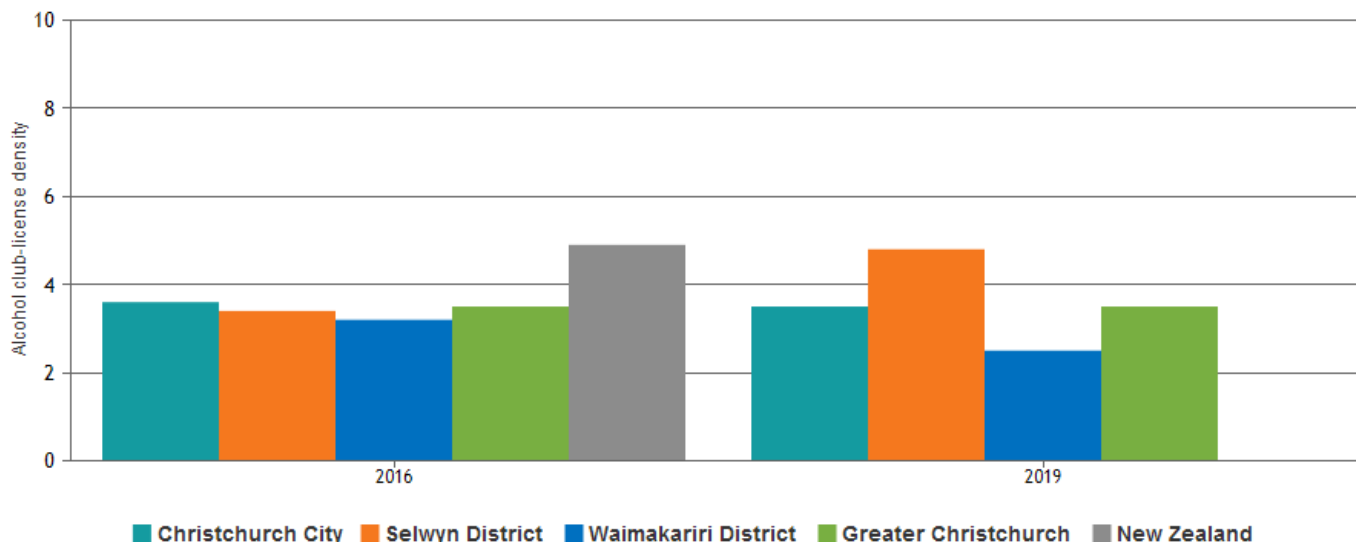
The figure shows that the on-licence alcohol licence densities differed across the three Territorial Authorities in greater Christchurch in both 2016 and 2019. In 2019, Christchurch City had the highest on-licence density at 20.5/10,000 in 2019; followed by Waimakariri District 11/10,000 in 2019, and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

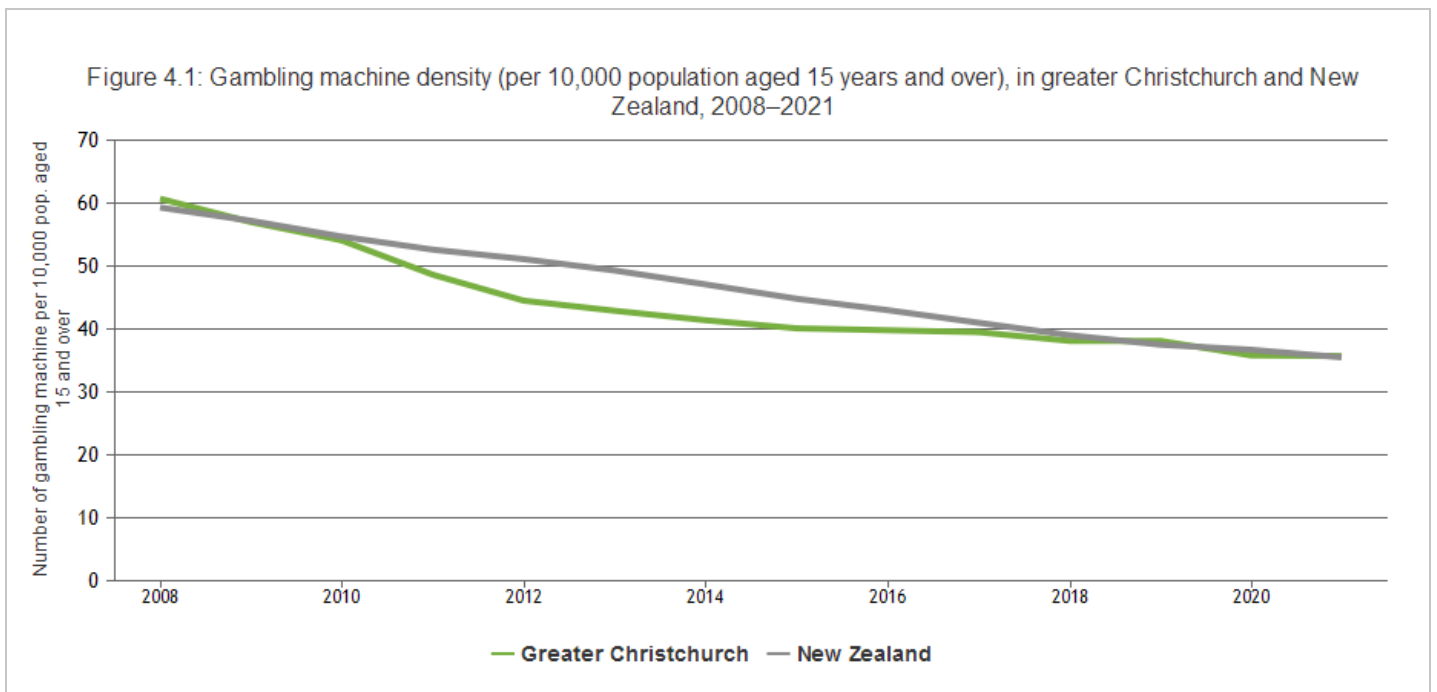
GAMBLING MACHINES

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].

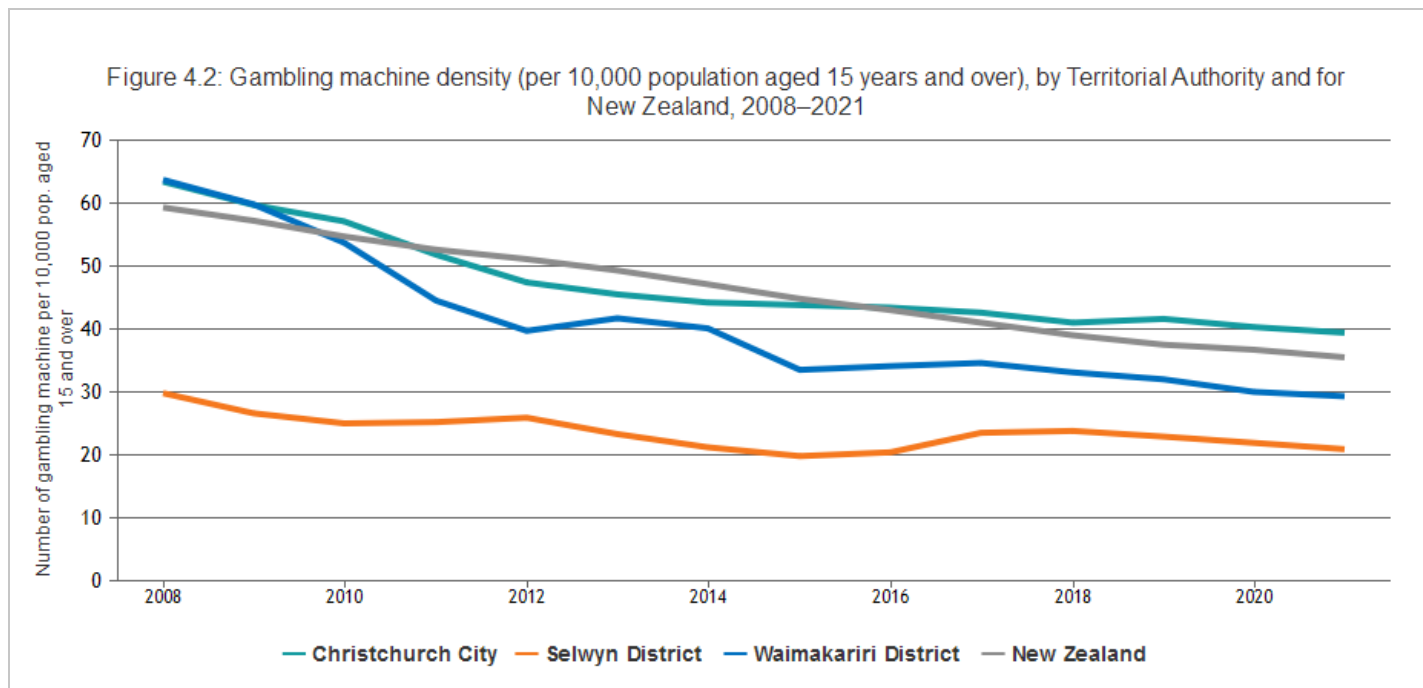
This indicator presents gambling machine density (the number of gambling machines per 10,000 population), in greater Christchurch and New Zealand from 2008 to 2021 (Internet or live casino games are not captured by this measure). Gambling machine proceeds, per annum, per 10,000 population aged 15 years 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 2021. 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 time 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 2.42M per 10,000 population aged 15 years and over, in 2021 (\$241 per person). For New Zealand, gambling machine proceeds have declined from \$2.71M to \$2.06M per 10,000 population between 2008 and 2021.

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 2021. The pattern is one of declining density overall, in keeping with the national picture. In 2021, gambling machine proceeds (data not shown) were highest in Christchurch City (equivalent to \$243 per person aged 15 years and over) and lowest in Selwyn District (\$80 per person). Gambling machine proceeds for the Waimakariri District were approximately midway between Christchurch City and Selwyn District in 2021 (\$162 per person).

Data Sources

Source: Department of Internal Affairs.

Survey/data set: Administrative data to December 2021. Access publicly available data from the Department of Internal Affairs website catalogue.data.govt.nz/dataset/gaming-machine-profits-gmp-dashboard

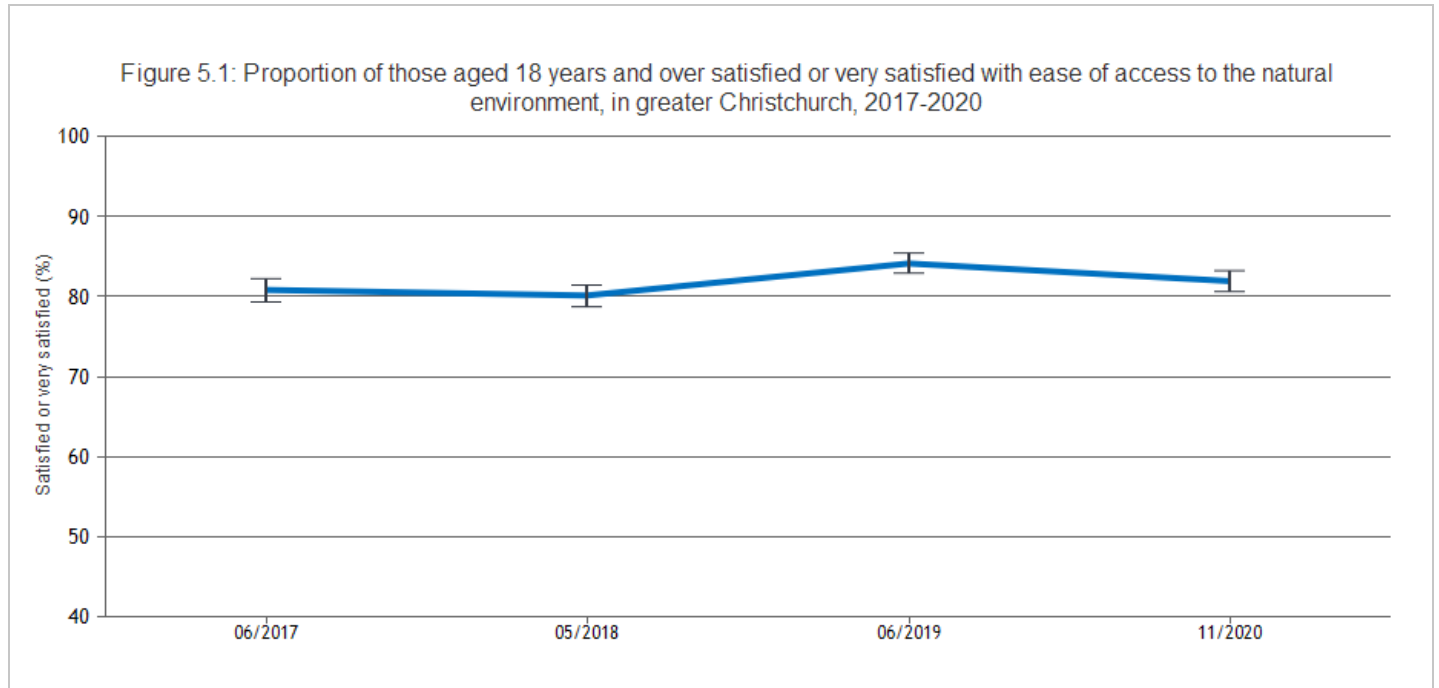
Source data frequency: Quarterly.

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

ACCESS TO NATURAL ENVIRONMENT

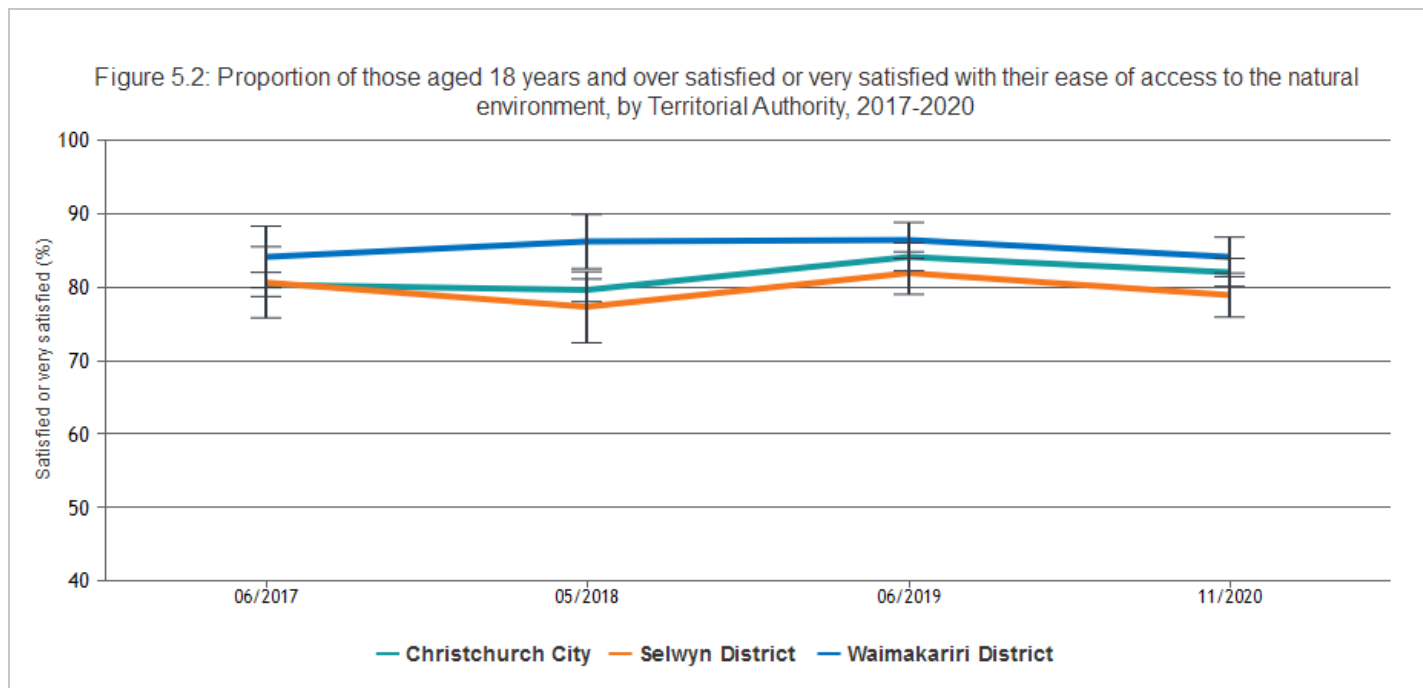
Access to natural environments can buffer stress [4], and visits to public conservation areas can improve mental health and wellbeing [5]. This indicator is based on the Canterbury Wellbeing Survey's 'access to the natural environment' question, that broadly defines the natural environment as "rivers,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



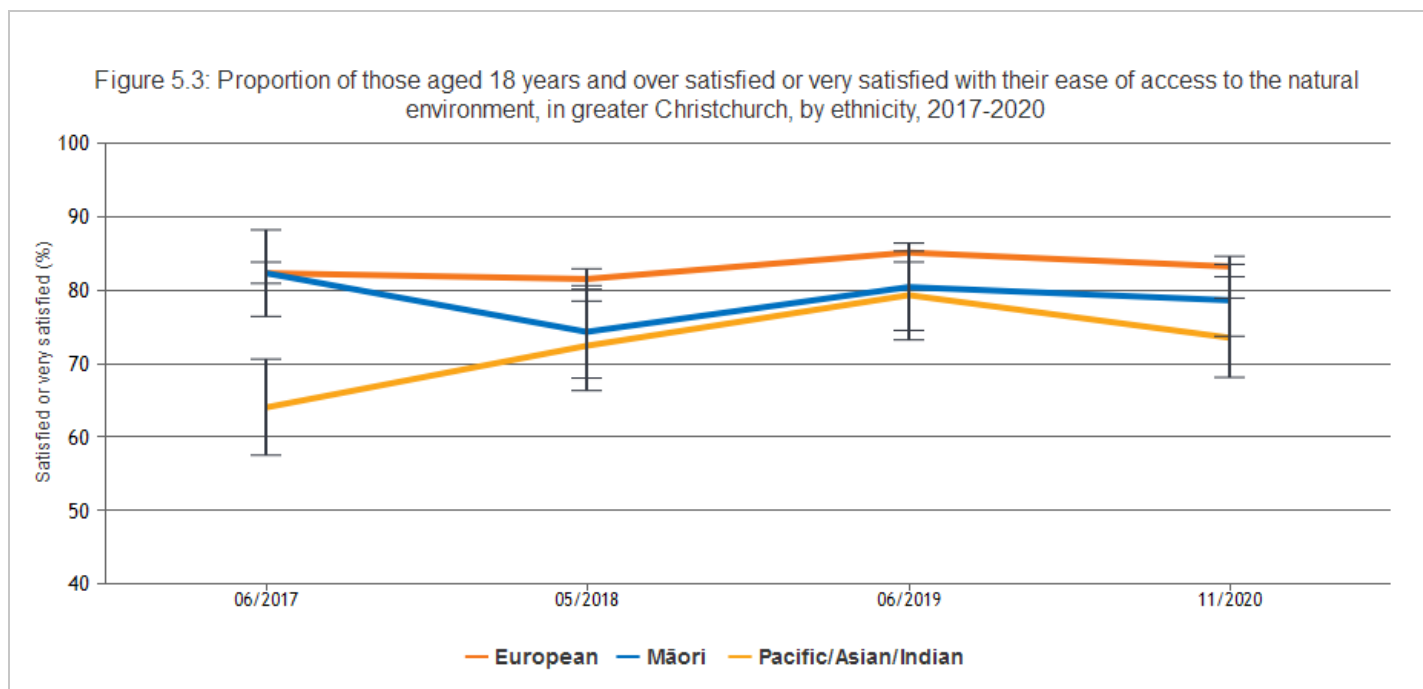
The figure shows that more than eighty percent of greater Christchurch respondents expressed satisfaction with their ease of access to the natural environment in 2017, 2018, 2019 and 2020 (80.8%, 80.1%, 84.1%, and 81.9% respectively).

Breakdown by Territorial Authority



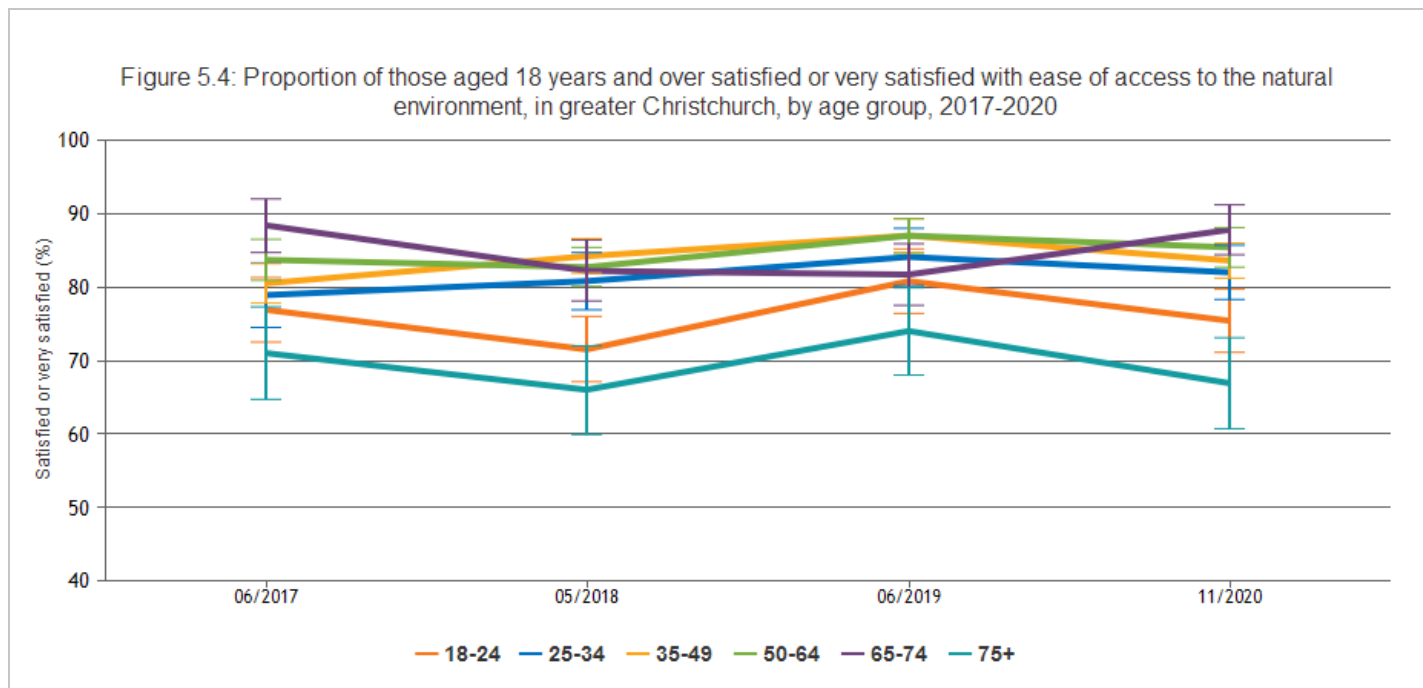
The figure shows in 2018, a statistically significantly higher proportion of respondents from Waimakariri District were satisfied with their ease of access to the natural environment compared with Christchurch City residents. However, in 2019, the proportions of respondents, satisfied or very satisfied with their ease of access to the natural environment, by Territorial Authority converged and in both 2019 and 2020, and there are no statistically significant differences between the Territorial Authorities (Christchurch City, 82.0%; Selwyn District, 78.9%; and Waimakariri District 84.1%) in 2020.

Breakdown by ethnicity



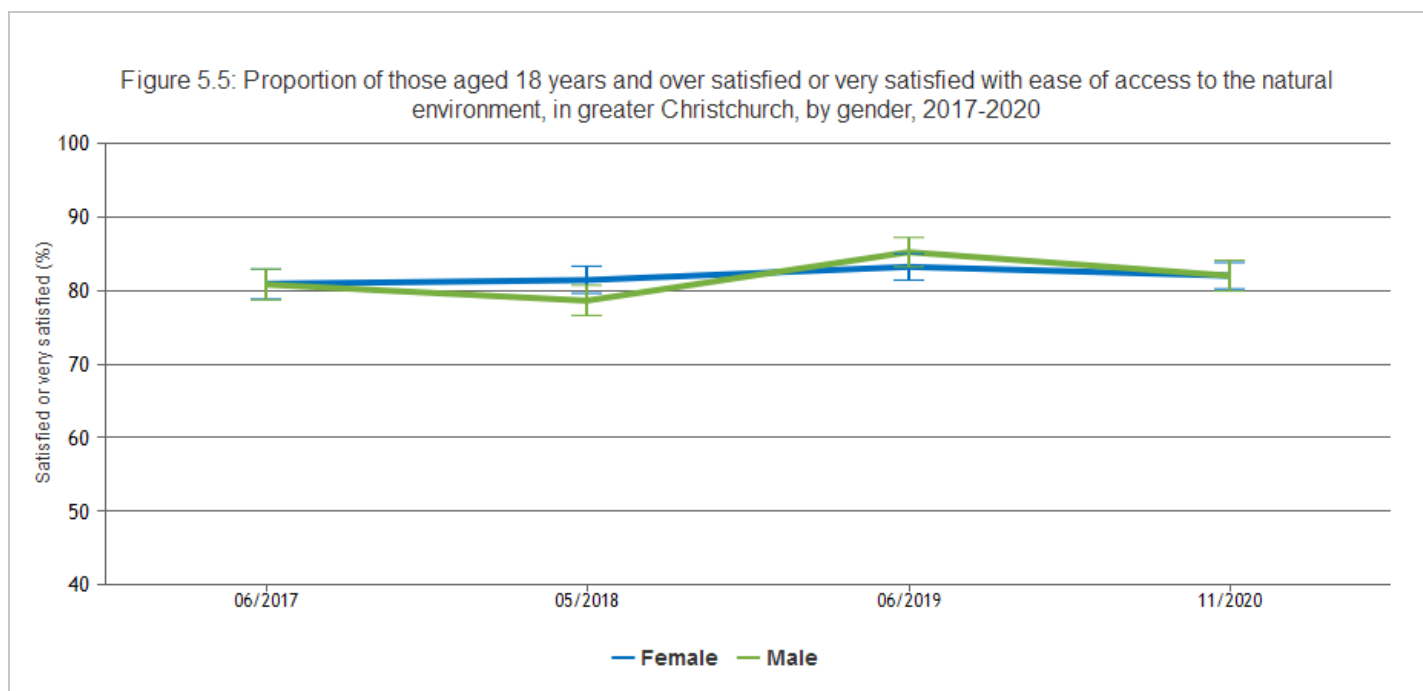
The figure shows in 2017, 2018 and 2020 a statistically significantly lower proportion of Pacific/Asian/Indian respondents were satisfied or very satisfied with their ease of access to the natural environment, compared with European respondents (and compared with Māori respondents in 2017). Between 2017 and 2019 the proportion of Pacific/Asian/Indian respondents satisfied with their ease of access to the natural environment increased significantly (64.0% satisfied or very satisfied in 2017; 79.3% in 2019).

Breakdown by age



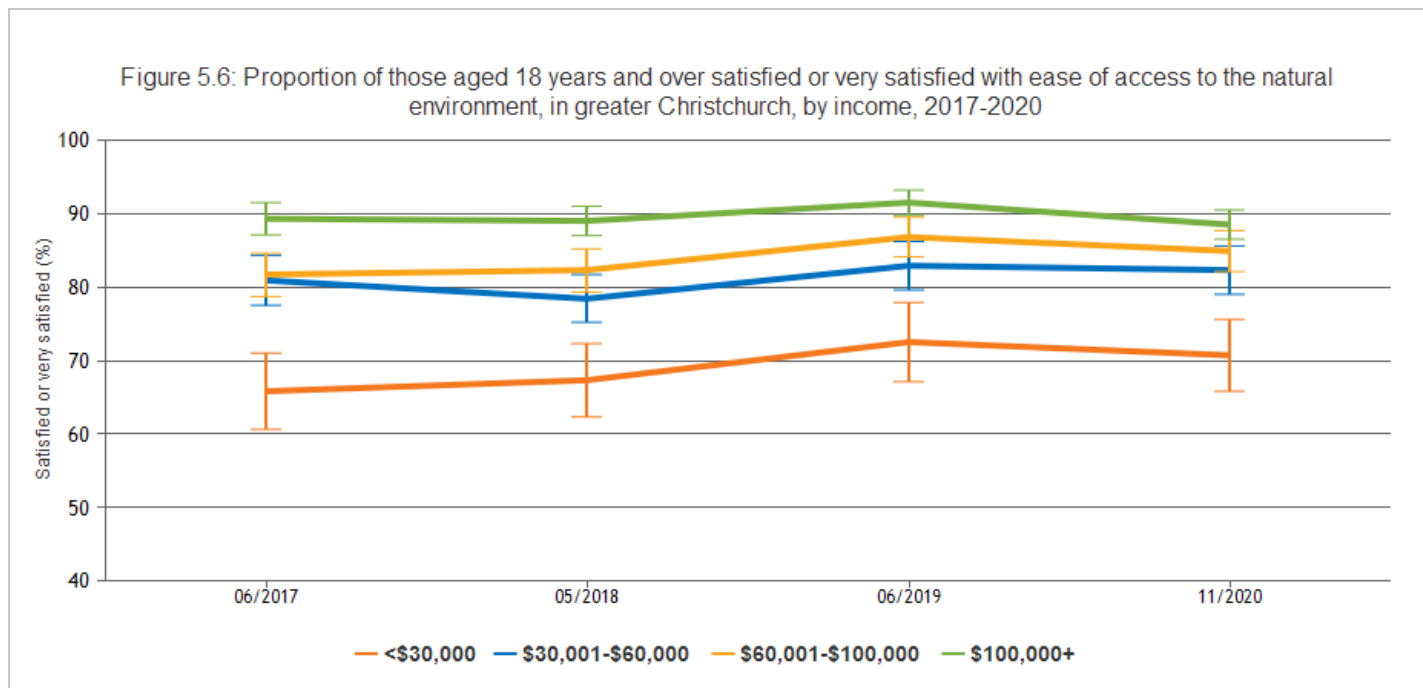
The figure shows that a majority of respondents, across all age groups, reported being satisfied or very satisfied with their ease of access to the natural environment, in greater Christchurch, from 2017 to 2020. The 2020 result indicates that the youngest age group and the oldest age group are both less satisfied with their access to the natural environment than the other age groups. 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



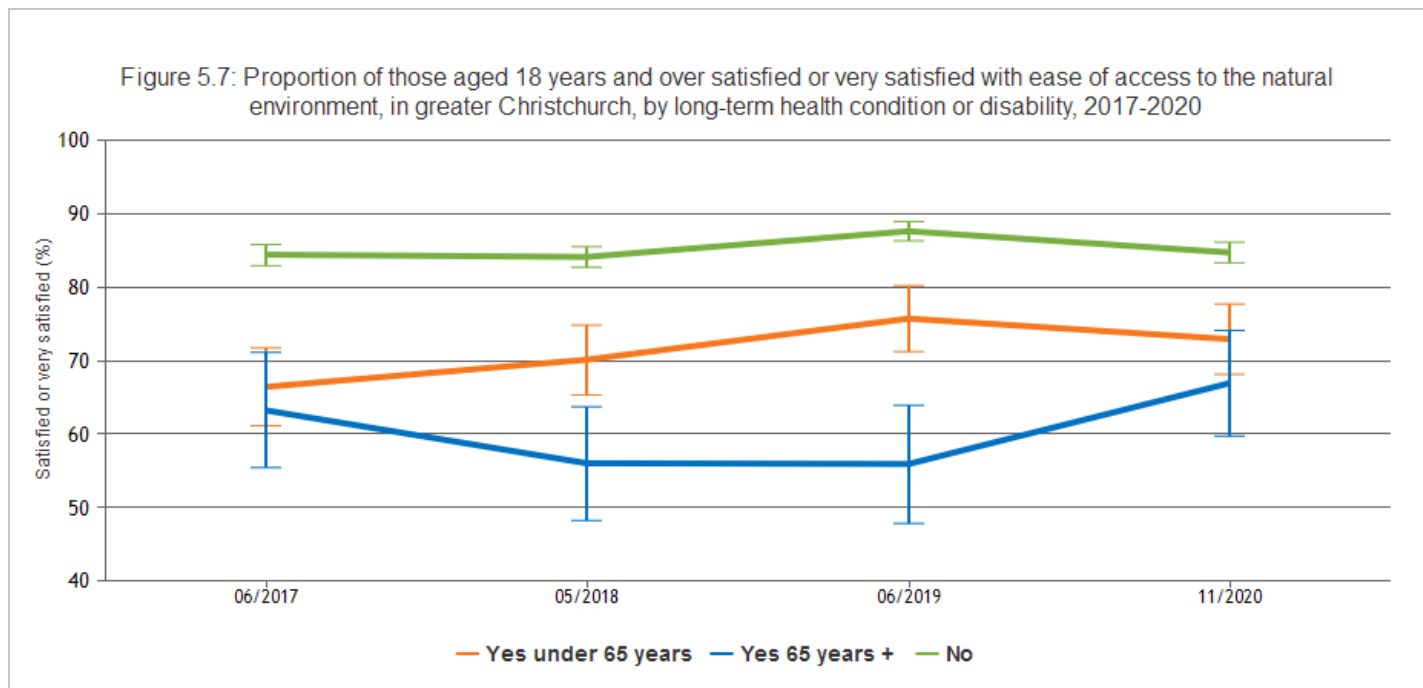
The figure shows that 78 percent or more of female and male respondents indicated that they were satisfied or very satisfied with their ease of access to the natural environment in greater Christchurch in 2017, 2018, 2019 and 2020 (females and males both 82.0% in 2020). There are no statistically significant differences by gender at any time point. The increase in the proportion of male respondents indicating they were satisfied or very satisfied between 2018 and 2019 is statistically significant.

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 2020. There is a clear pattern of increasing satisfaction with increasing income. In 2020, 88.5 percent of respondents in the \$100,000+ annual household income group were satisfied with their ease of access to the natural environment compared with 70.7 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 four 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 2020. In 2020, 84.7 percent of those without a long-term health condition or disability were satisfied or very satisfied; compared to 72.9 percent of those aged under 65 years with a long-term health condition or disability (11.8 percentage point difference) and 66.9 percent of those aged 65 years and over with a long-term health condition or disability (17.8 percentage point difference). A higher proportion of the younger (under 65 years) age group with a long-term health condition or disability was satisfied or very satisfied at all timepoints – this difference was statistically significant in 2018 and 2019.

Data Sources

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

Survey/data set: Canterbury Wellbeing Survey to 2020. 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.

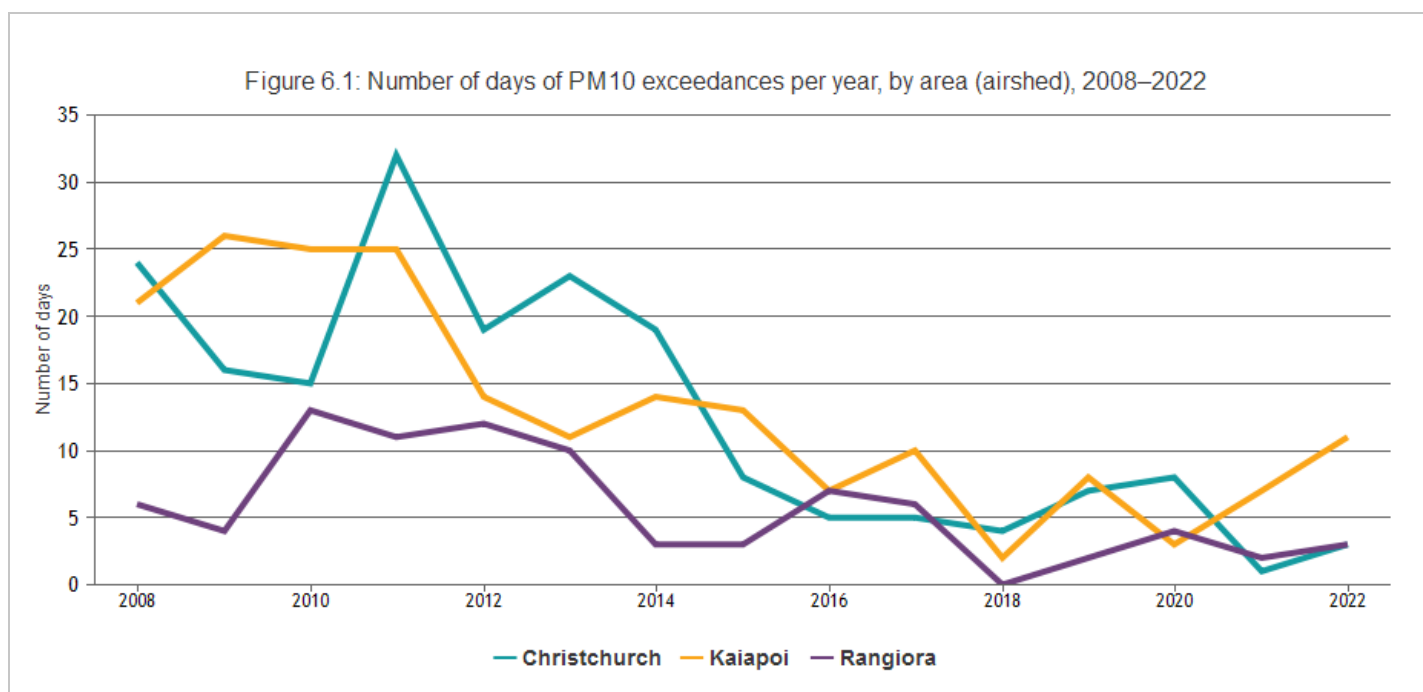
Metadata for this indicator is available at <https://www.canterburywellbeing.org.nz/index-data>

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/

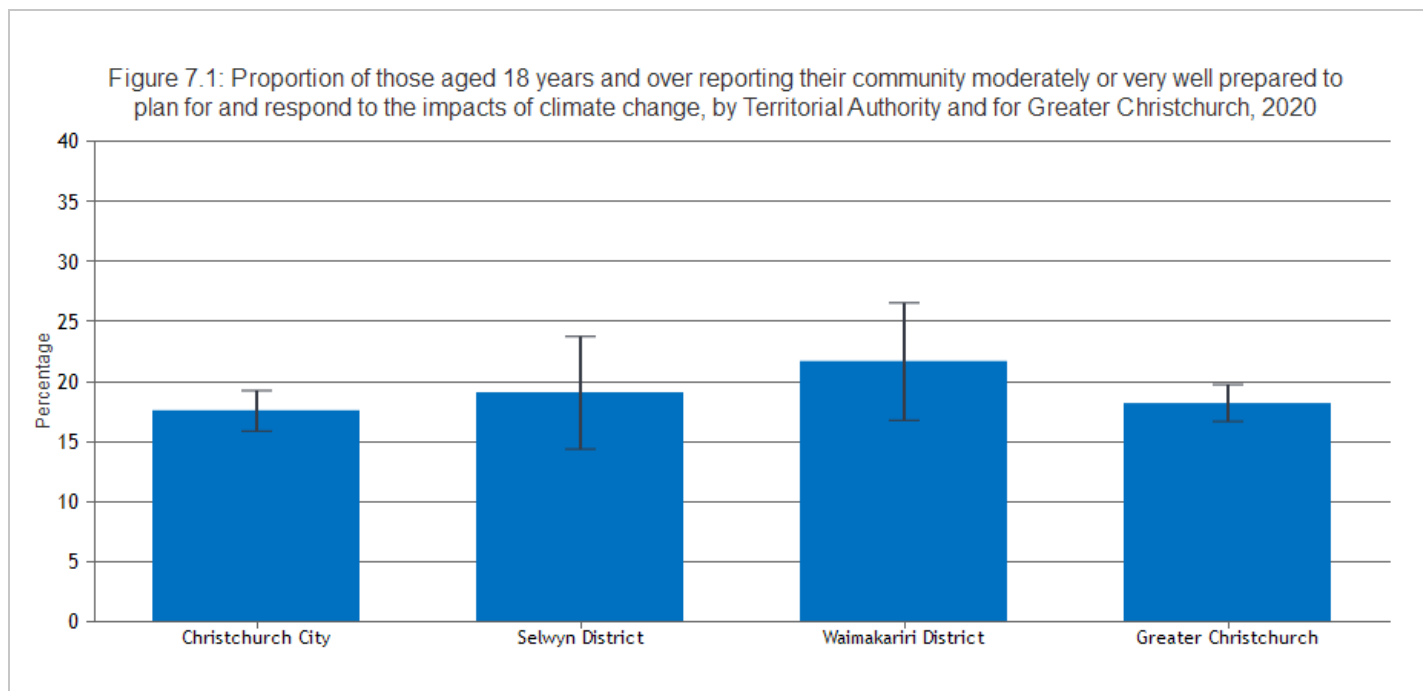
Source data frequency: Data collected daily and reported annually in December.

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

CLIMATE CHANGE PREPAREDNESS

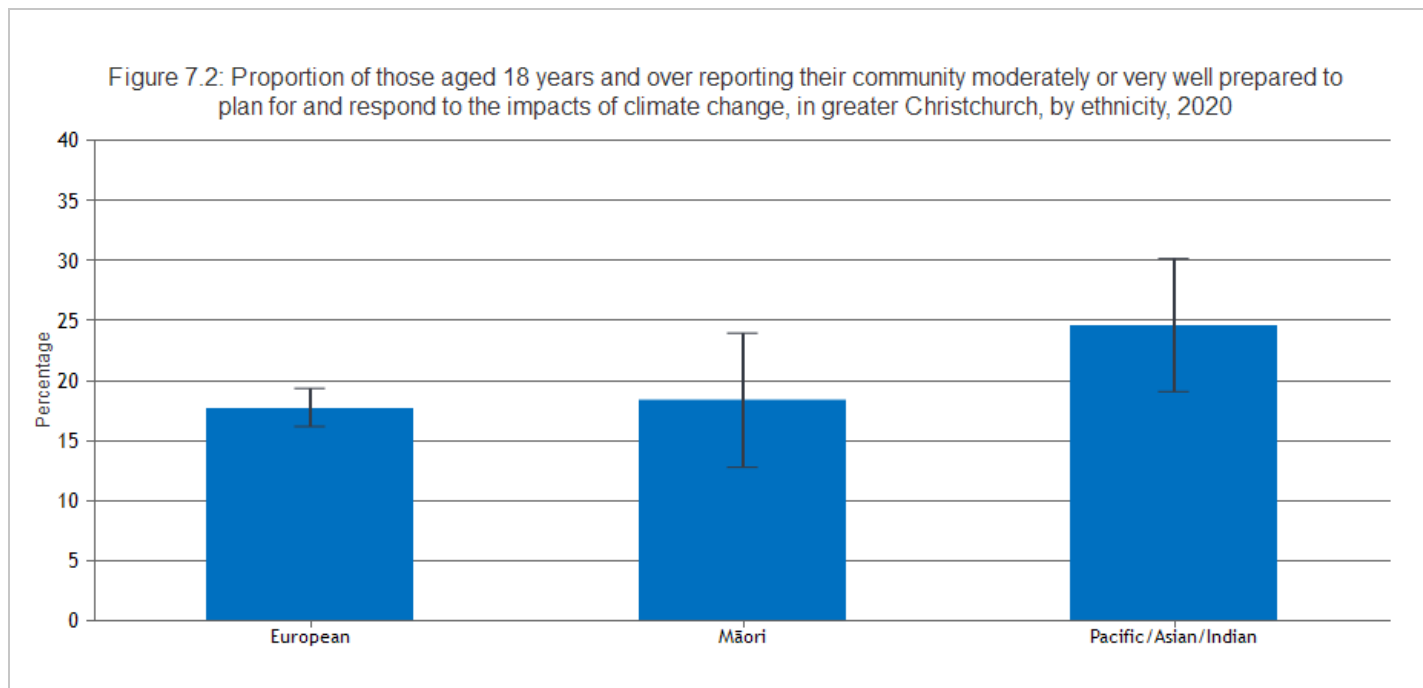
Climate change impacts will be experienced most intensely at the local level, therefore community-based preparation is important to build capacity to adapt and reduce vulnerabilities to climate change [31]. Communities have local knowledge of their social, political, economic, and environmental circumstances, 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 2020 Canterbury Wellbeing Survey.



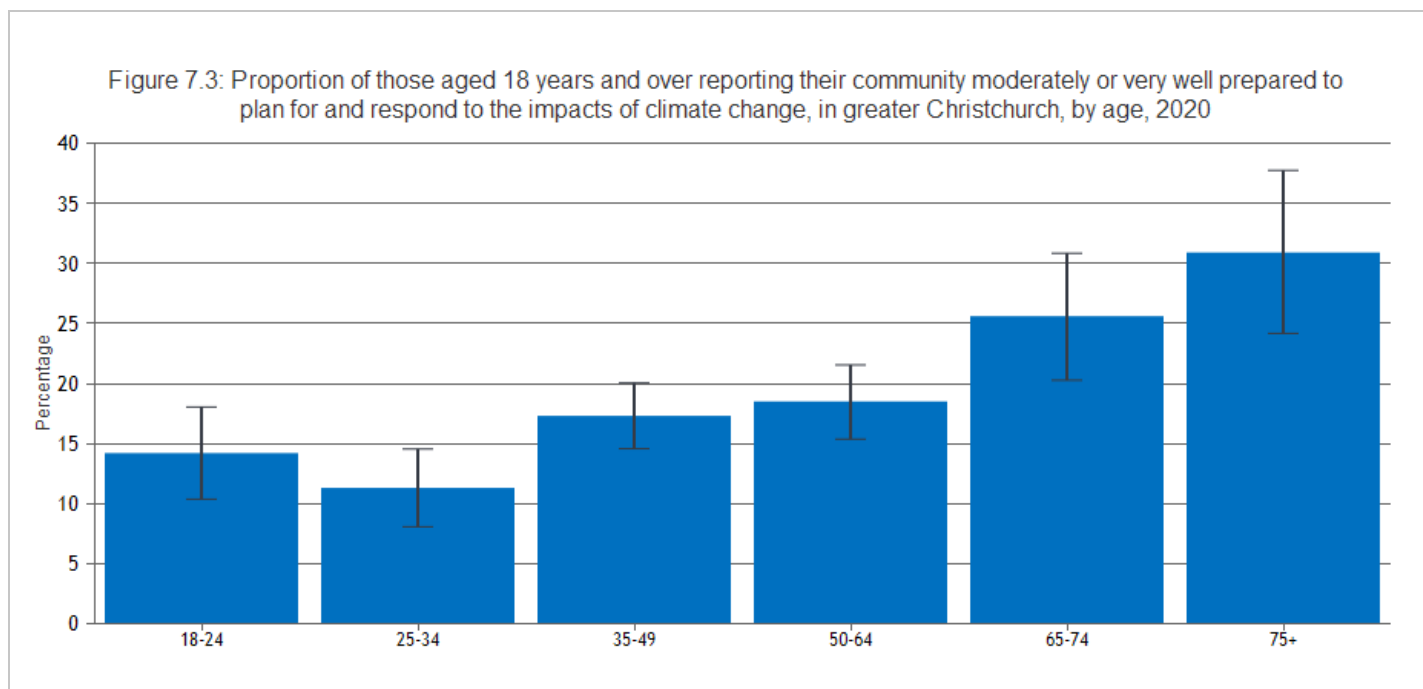
The figure shows that 18.2 percent of respondents in greater Christchurch indicated that their community is moderately or very well prepared to plan for and respond to the impacts of climate change. In Waimakariri District, a slightly higher proportion (21.7%) of respondents indicated that their community is moderately or very well prepared compared to Selwyn District and Christchurch City (19.1% and 17.6%, respectively), however, these differences are not statistically significant.

Breakdown by ethnicity



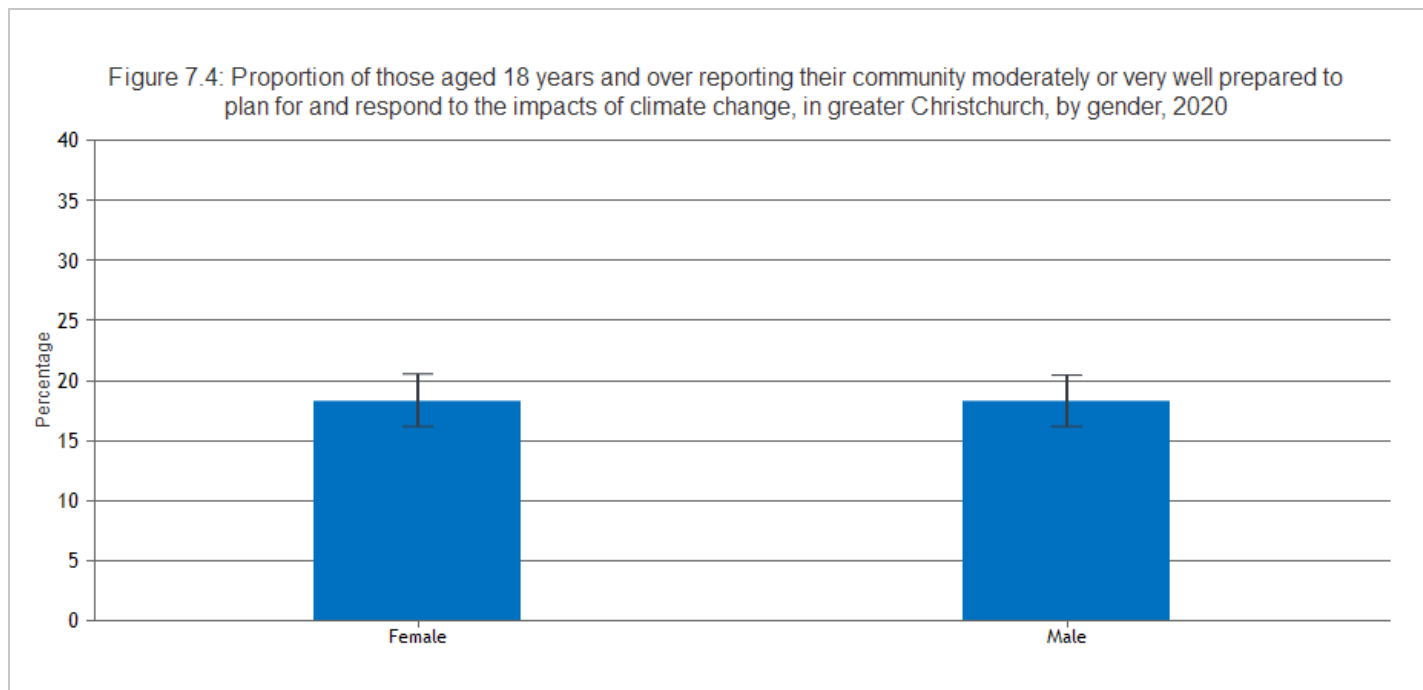
The figure shows no statistically significant differences, by ethnicity, in the proportion of respondents who reported that their community is moderately or very well prepared to plan for and respond to the impacts of climate change, in greater Christchurch, in 2020. While the proportion for Pacific/Asian/Indian respondents is higher than for European and Māori respondents (24.6% versus 18.4% for Māori and 17.7% for European respondents), this difference is not statistically significant.

Breakdown by age



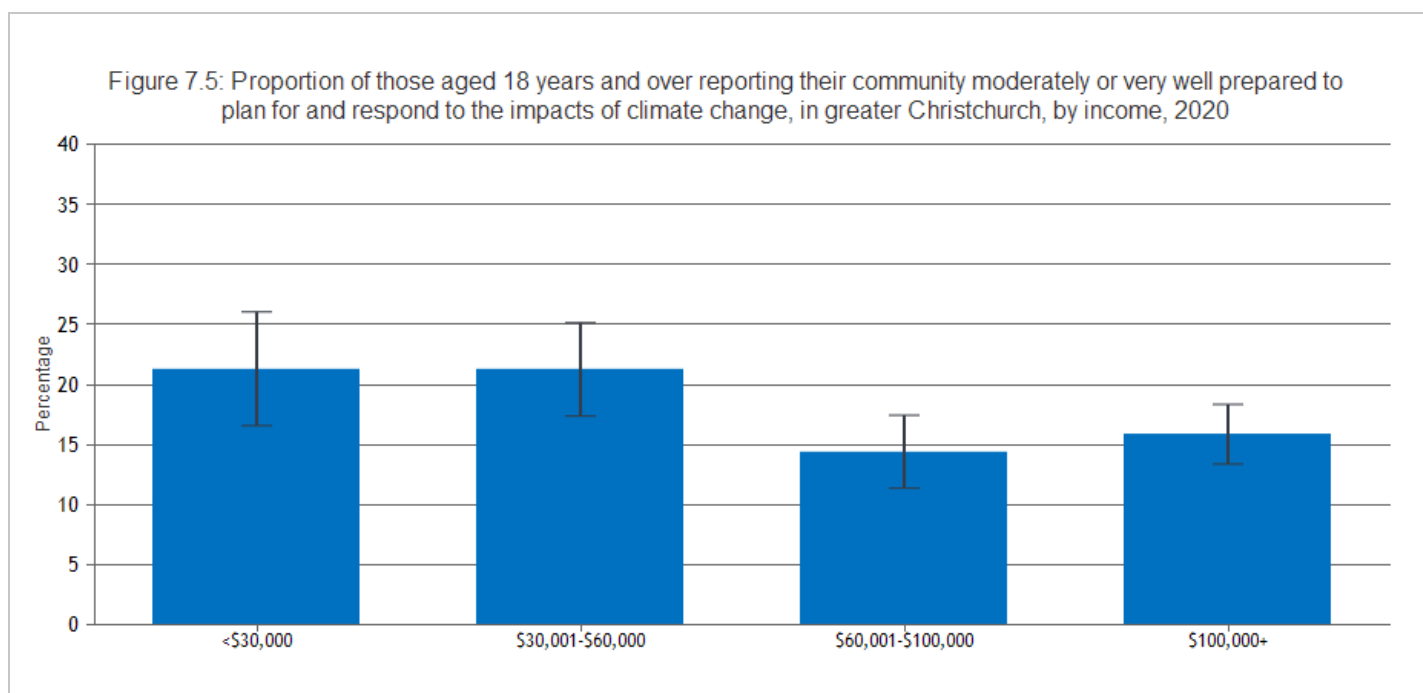
The figure shows a clear positive relationship between perceived climate change preparedness and age. Lower proportions of respondents from younger age groups reported that their community is moderately or very well prepared to plan for and respond to the impacts of climate change (14.2% for 18 to 24 years, 11.3% for 25 to 34 years, and 17.3% for 35 to 49 years) compared to the oldest age groups (25.6% for 65 to 74 years and 30.9% 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



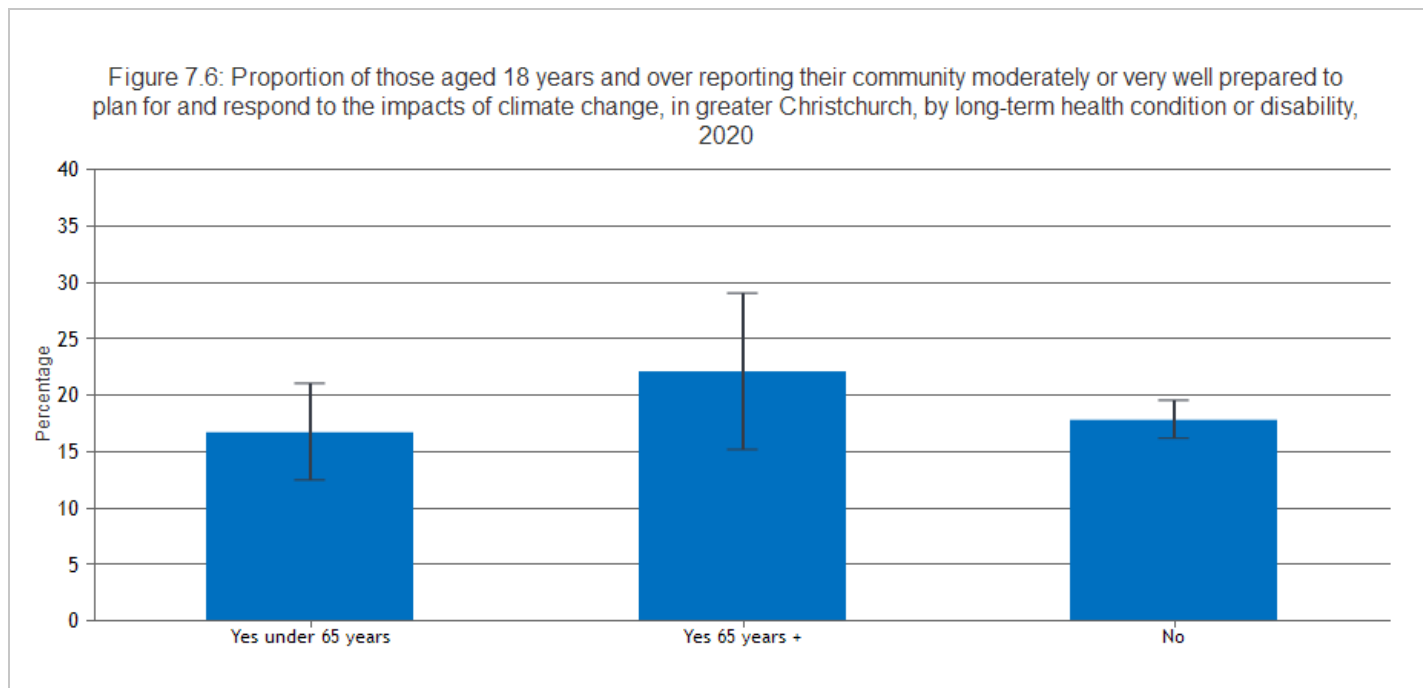
The figure shows no statistically significant difference, by gender, in the proportion of respondents who reported that their community is moderately or very well prepared to plan for and respond to the impacts of climate change, in greater Christchurch in 2020.

Breakdown by income



The figure shows no statistically significant differences, by income, 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.

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.

Data Sources

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

Survey/data set: Canterbury Wellbeing Survey 2020. 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>

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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, developed in 2017.

> **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 2020**

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