

# 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.

## 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). The alcohol licence density in greater Christchurch in 2016, was lower than for New Zealand as a whole, across the three main licence types: on-licences, off-licences, and club licences. However, time-series data 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.

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. Kaiapoi met the National Environmental Standards for Air Quality in 2020, however Christchurch and Rangiora did not.

## 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, and 2019). 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 2019 (but not significant for access to transport, with the exception of 2017).

## What this means for wellbeing

Many aspects of the environment continue to bear long-term damage caused by the Canterbury earthquake sequence. However, the pattern of change observed across many of the indicators in this domain is one of steady improvement. The impact of loss of sports, recreational, cultural and leisure-time facilities has been monitored since the first Canterbury Wellbeing Survey in 2012 [7] and has decreased year-on-year until showing an increase in 2018 when this question was last asked.

Three additional survey questions - satisfaction with local community facilities, ease of access to transport, and ease of access to the natural environment - were introduced from 2017, and there are high levels of satisfaction across these measures. Other environment indicators, showing lower density of alcohol licences in greater Christchurch, compared with New Zealand, and falling gambling machine density, have positive implications for wellbeing, as does improved air quality.

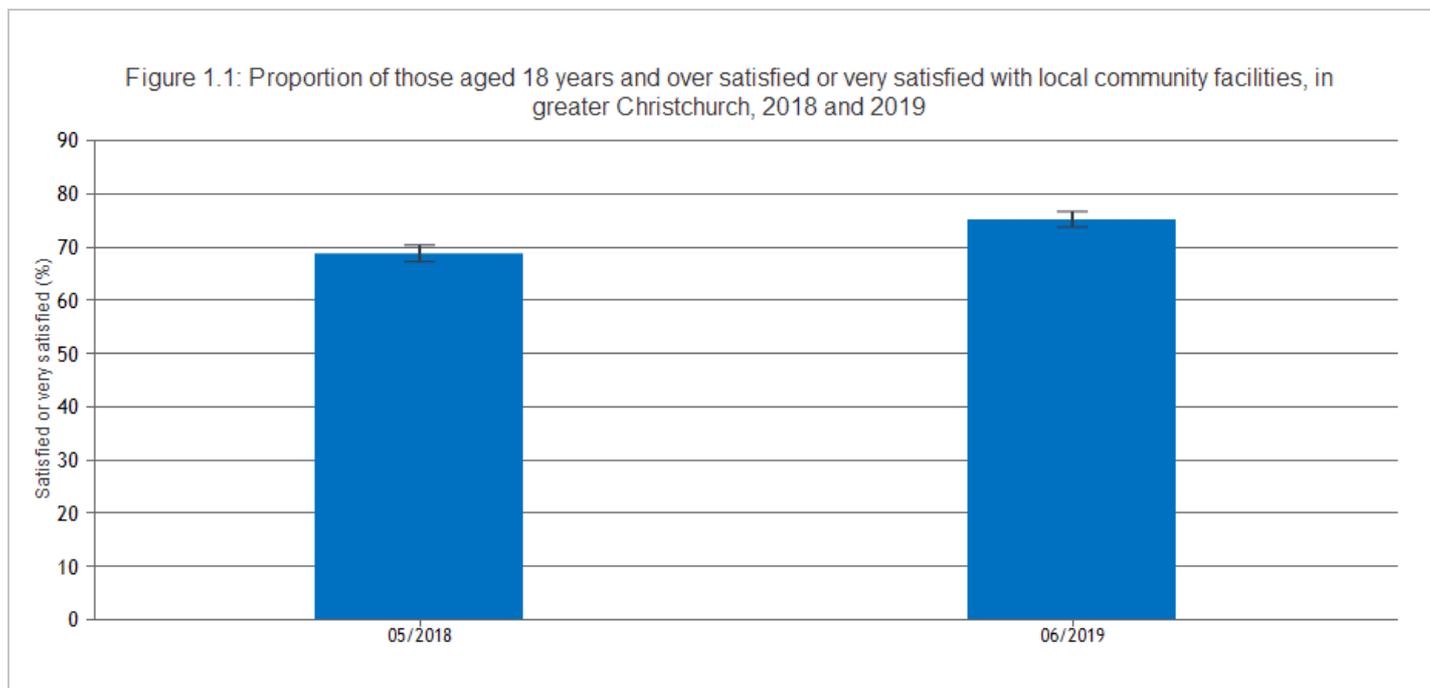
## Indicators in this domain

- **Community facilities**
- **Access to transport**
- **Recreational and cultural facilities**
- **Alcohol licences**
- **Gambling machines**
- **Access to natural environment**
- **Air quality**

## COMMUNITY FACILITIES

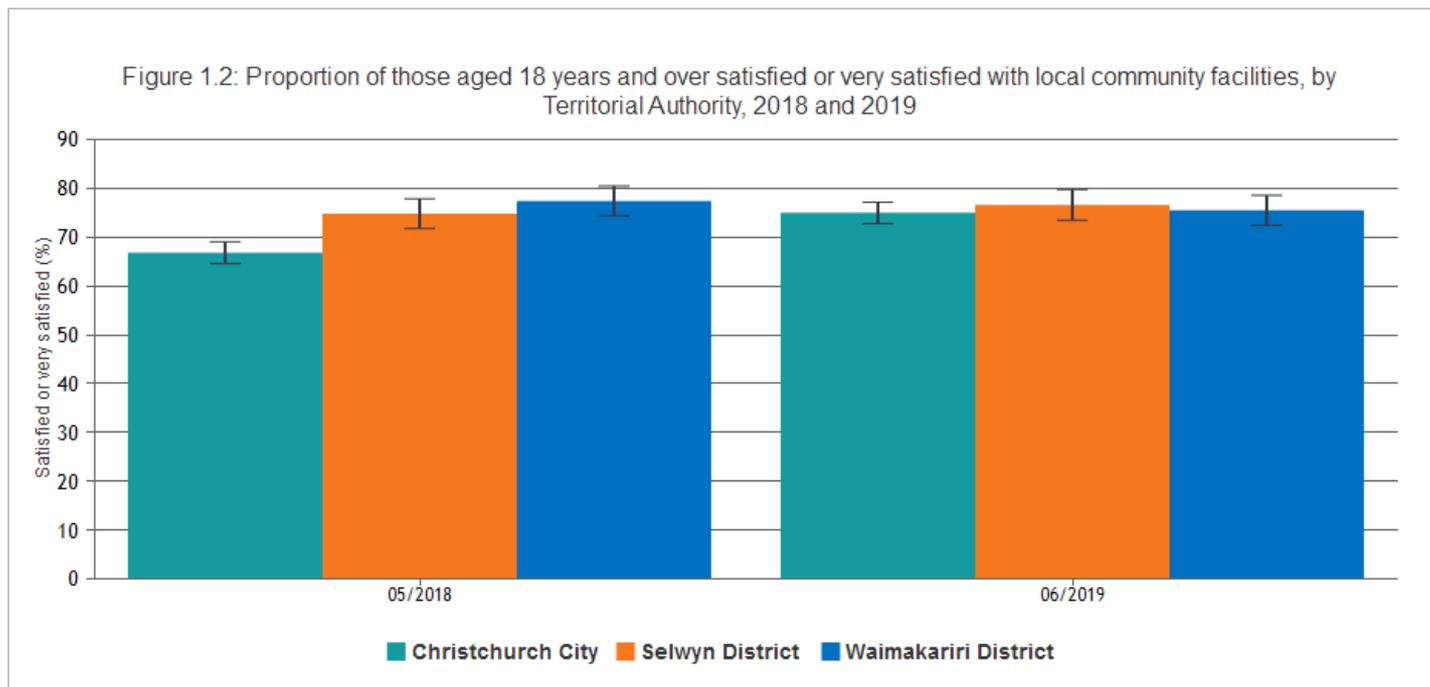
A number of questions included in the Canterbury Wellbeing Survey ask respondents about their satisfaction with various aspects of their everyday life. One of these questions asks survey respondents to rate their satisfaction with local community facilities.

This indicator presents the proportion of those 18 years and over satisfied or very satisfied with local community facilities. This question was new in 2018, making the current result the second time-point in this series.



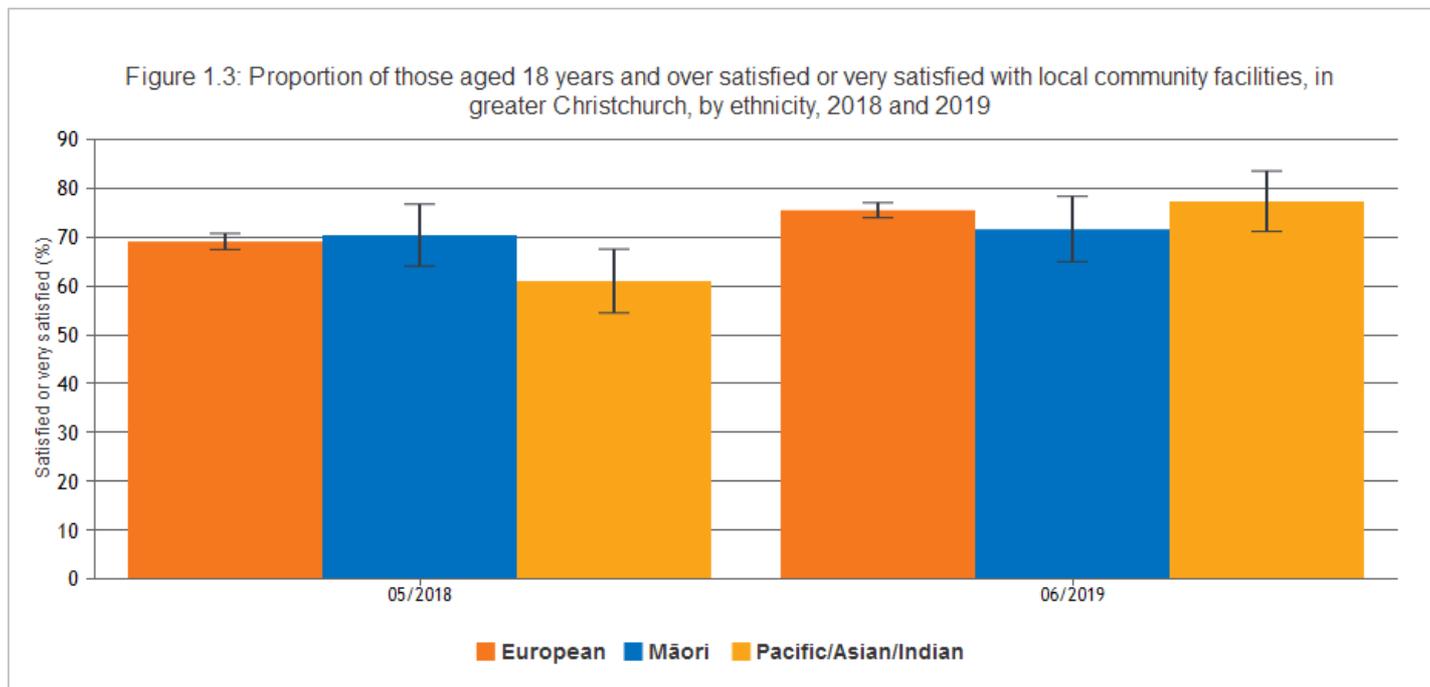
The figure shows that 68.8 percent of all respondents to the 2018 Canterbury Wellbeing Survey and 75.2 percent of all respondents to the 2019 survey indicated that they were satisfied or very satisfied with local community facilities. The 2018 to 2019 increase (6.4 percentage points) is statistically significant.

## Breakdown by Territorial Authority



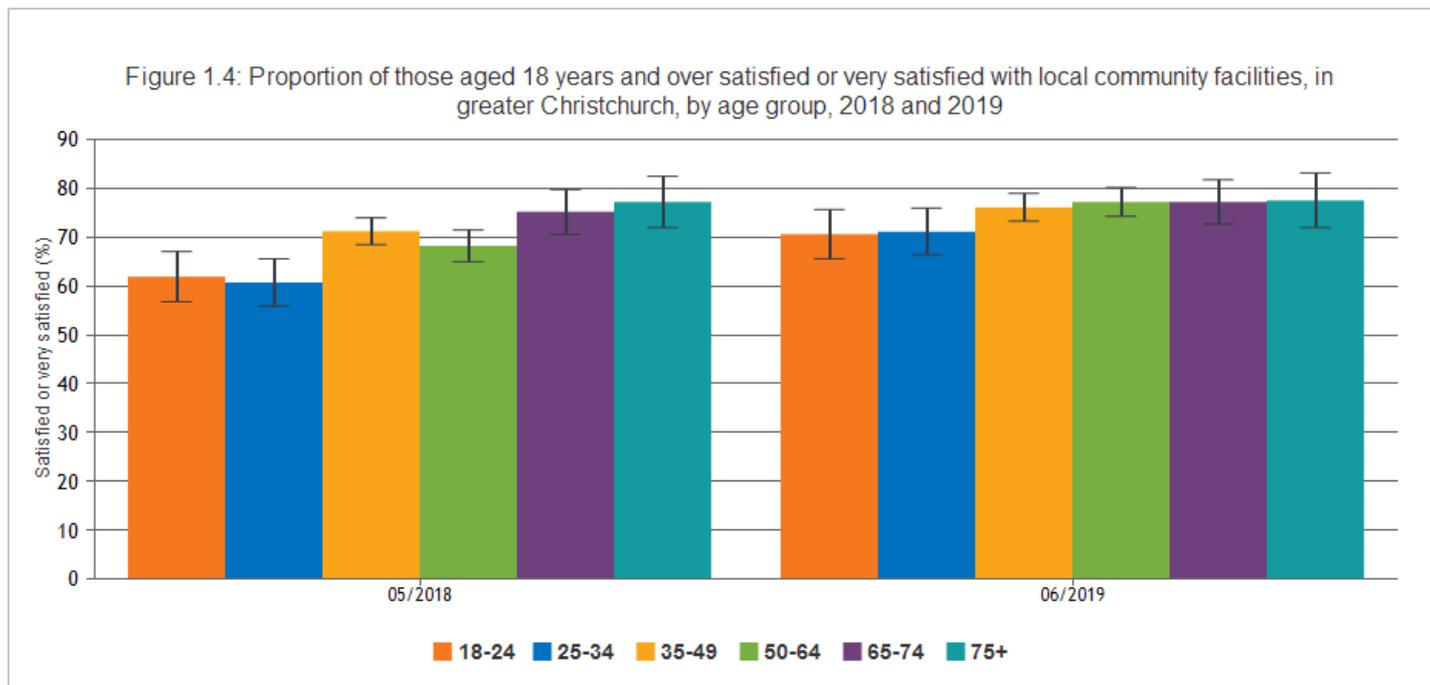
In 2018, there were higher levels of satisfaction with local community facilities in Waimakariri District and Selwyn District, compared with Christchurch City (77.4%, 74.8%, and 66.8% respectively). The satisfaction levels for Waimakariri District and Selwyn District were significantly higher than for Christchurch City. However, the 2019 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



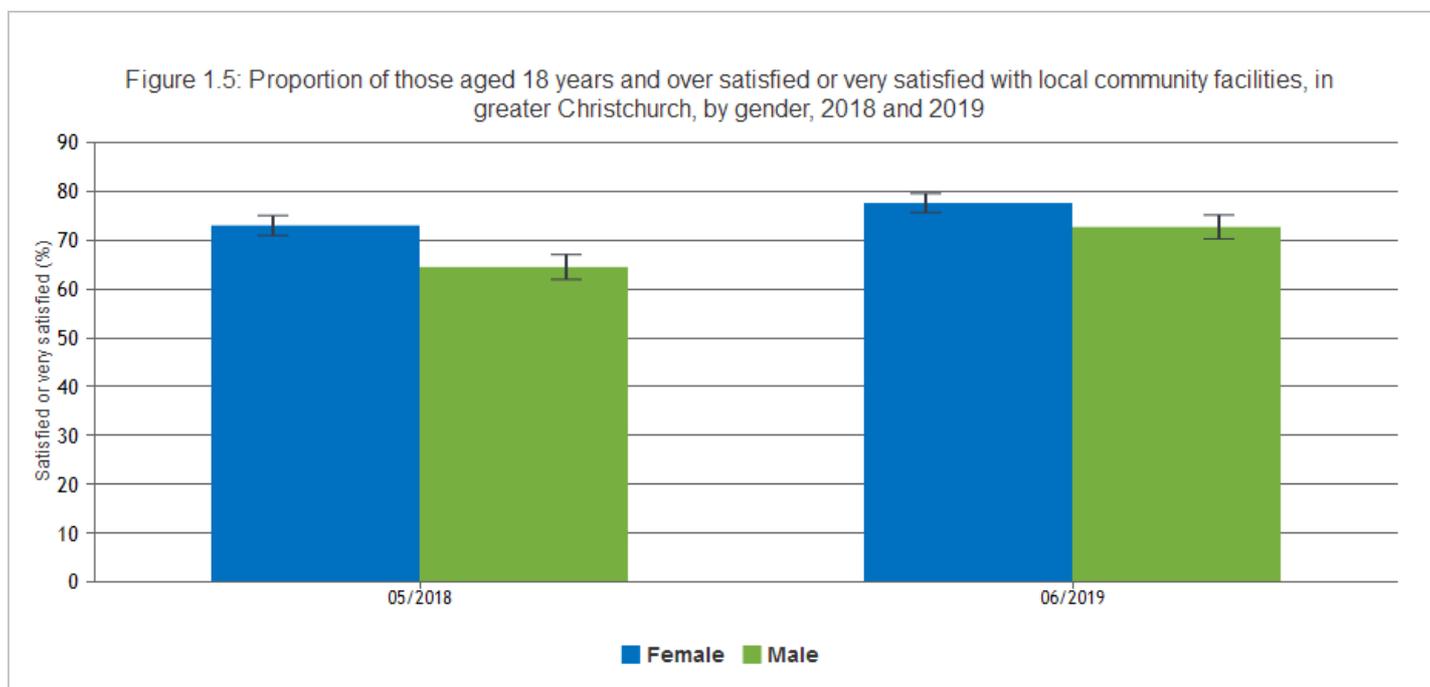
The figure shows differences by ethnicity in the proportion of respondents who indicated that they were satisfied or very satisfied with local community facilities in greater Christchurch. For 2018, the figure shows a higher proportion satisfied or very satisfied for European and Māori respondents, compared with Pacific/Asian/Indian respondents (69.1%, 70.4%, and 61% respectively). The 2018 proportion for European respondents is statistically significantly higher than for Pacific/Asian/Indian respondents but is not different from the proportion for Māori respondents. The 2019 results indicate that the proportions of European, Māori, and Pacific/Asian/Indian respondents reporting that they were satisfied or very satisfied with local community facilities have both increased and converged, and are statistically similar (75.5%, 71.6%, and 77.3%, respectively).

## Breakdown by age



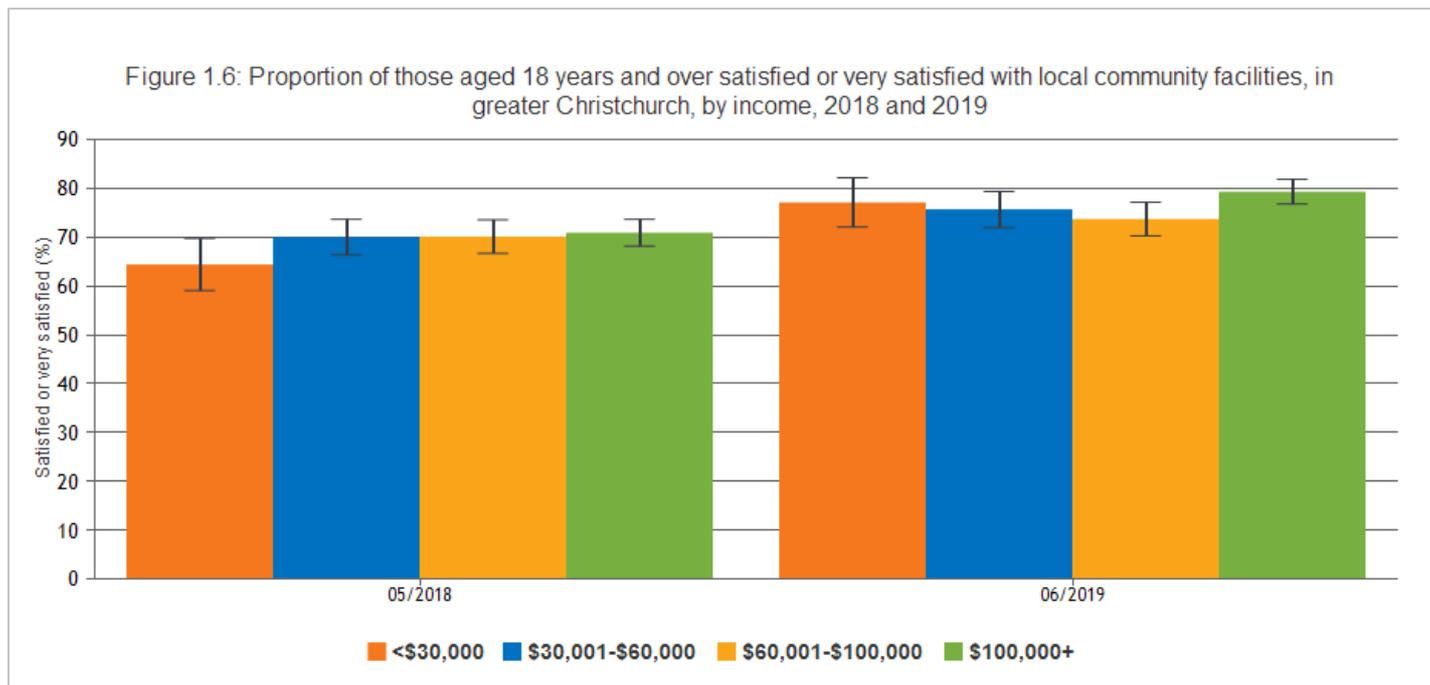
The figure shows some differences by age group in the proportion of respondents who indicated that they were satisfied or very satisfied with local community facilities in 2018 and 2019. The figure shows lower levels of satisfaction (a lower proportion satisfied or very satisfied) for the younger age groups (61.9% and 70.6% for 18 to 24 years group and 60.7% and 71.1% for 25 to 34 years group, 2018 and 2019, respectively) compared with the older age groups (77.2% and 77.5% for the 75+ age group, 2018 and 2019, respectively). These differences were statistically significant between the two younger age groups (18 to 24 and 25 to 34 years) and the 35 to 49, 65 to 74, and 75+ age groups in 2018, but not in 2019 (some convergence is apparent between the groups, 2018–2019).

## Breakdown by gender



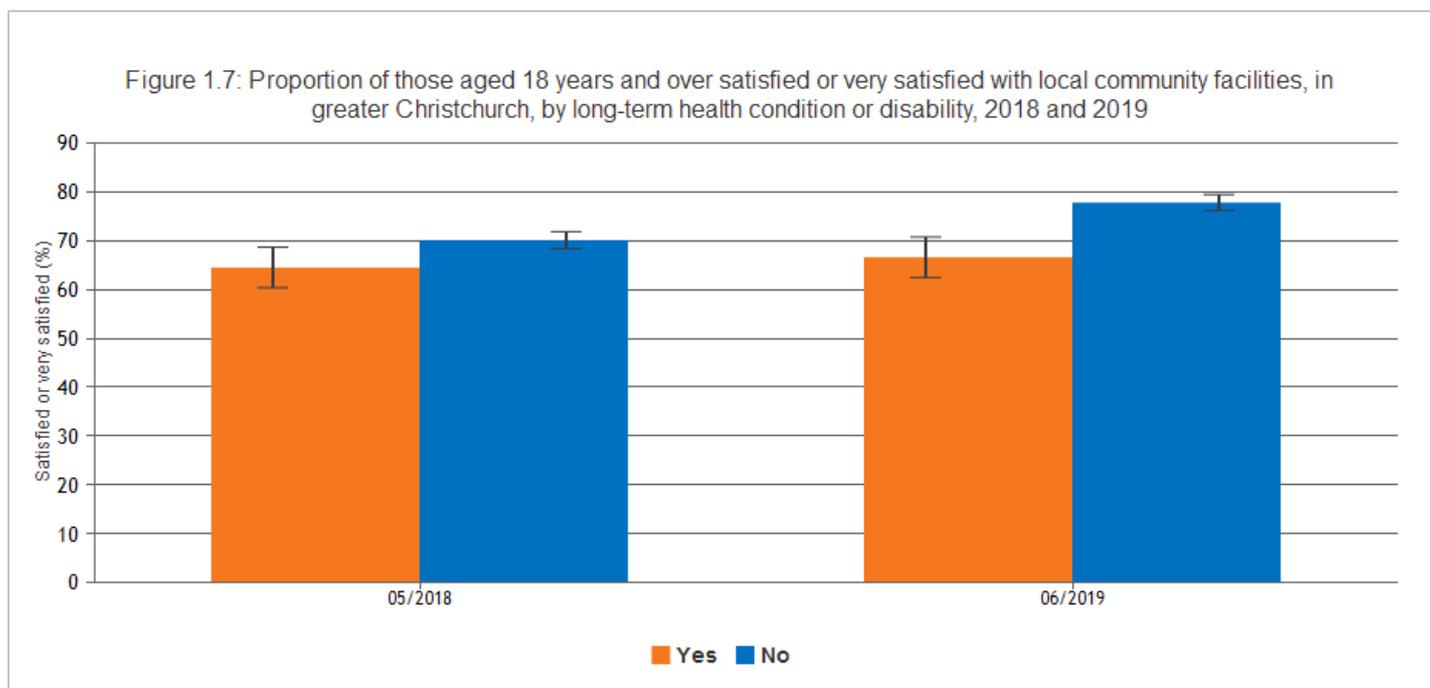
The figure shows a statistically significant difference in the proportion of female and male respondents in greater Christchurch who indicated that they were satisfied or very satisfied with local community facilities in both 2018 and 2019 (females 73% and 77.6%; males 64.5% and 72.7%, respectively).

## 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.

## Breakdown by disability



The figure shows no statistically significant difference in 2018 in the proportion of respondents in greater Christchurch who indicated that they were satisfied or very satisfied with local community facilities, by long-term health condition or disability (64.5% with a long-term health condition or disability and 70.1% without). However, in 2019, the proportion of those without a long-term health condition or disability who are satisfied or very satisfied with community facilities has increased, and the difference between the two groups is statistically significant (66.6% with a long-term health condition or disability and 77.8% without).

## Data Sources

**Source:** Canterbury District Health Board.

**Survey/data set:** Canterbury Wellbeing Survey to 2019. Access publicly available data from the Community and Public Health (Canterbury DHB)

website [www.cph.co.nz/your-health/wellbeing-survey/](http://www.cph.co.nz/your-health/wellbeing-survey/)

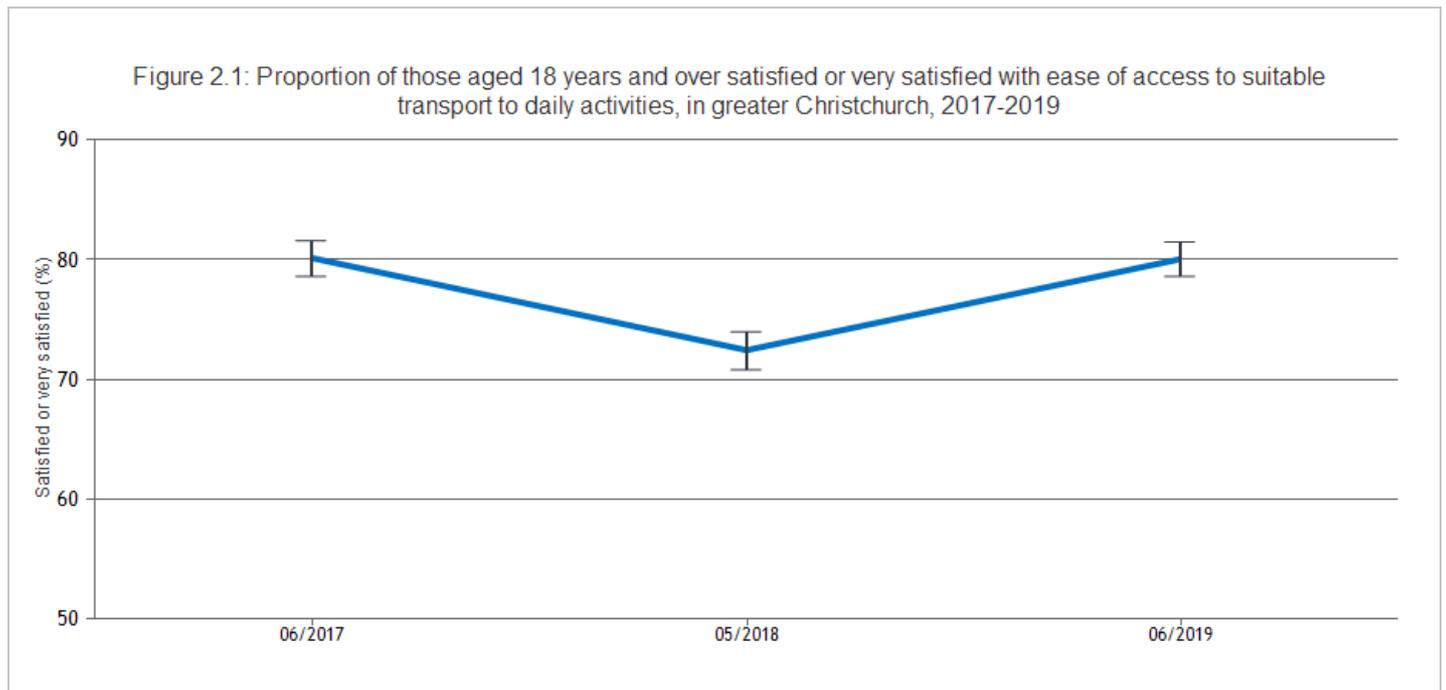
**Source data frequency:** Annually.

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

## ACCESS TO TRANSPORT

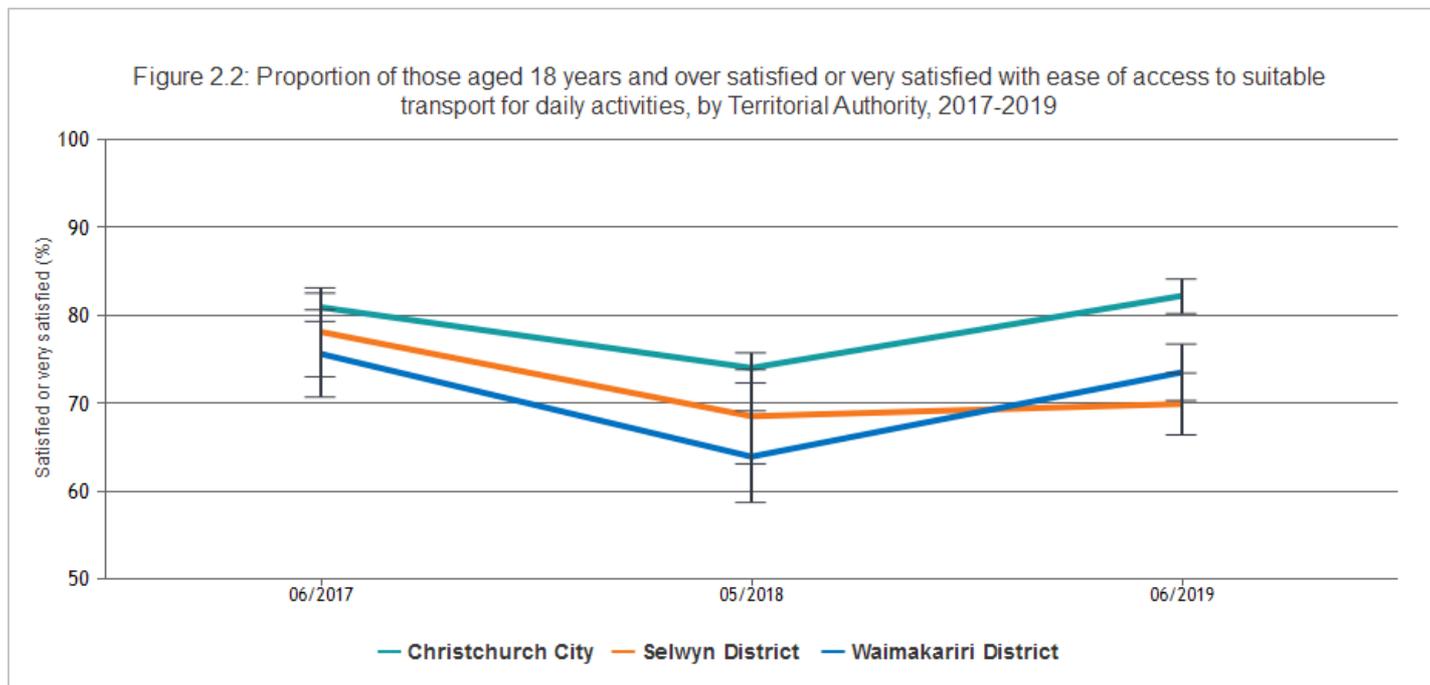
Transport systems and infrastructure (including public transport) influence health and wellbeing by enabling access to other important resources, such as employment, education, and social and health care services. Transport infrastructure that is safe and easy to navigate increases the likelihood of 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 2019.



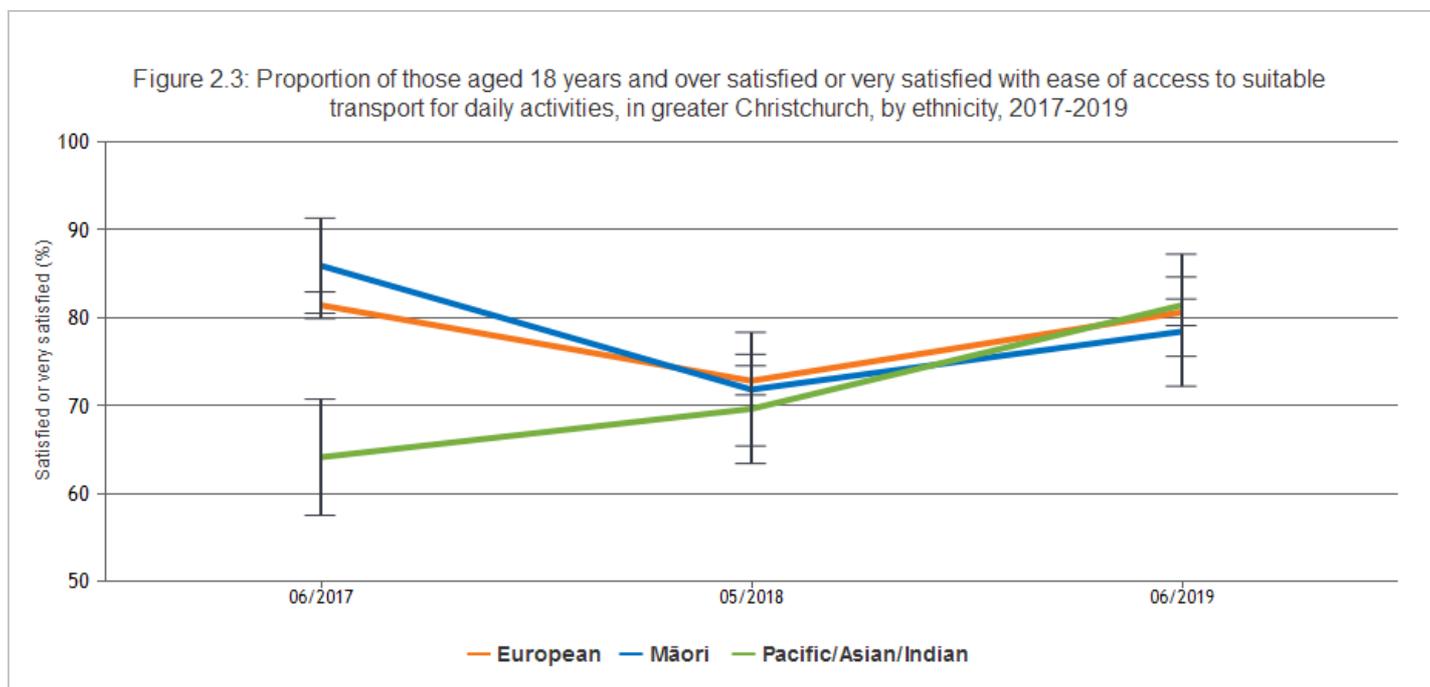
The figure shows that the proportion of respondents who indicated that they were satisfied or very satisfied with their ease of access to suitable transport to daily activities, has increased from 72.4 percent in 2018 to 80 percent in 2019. This increase, of 7.6 percentage points, is statistically significant.

## Breakdown by Territorial Authority



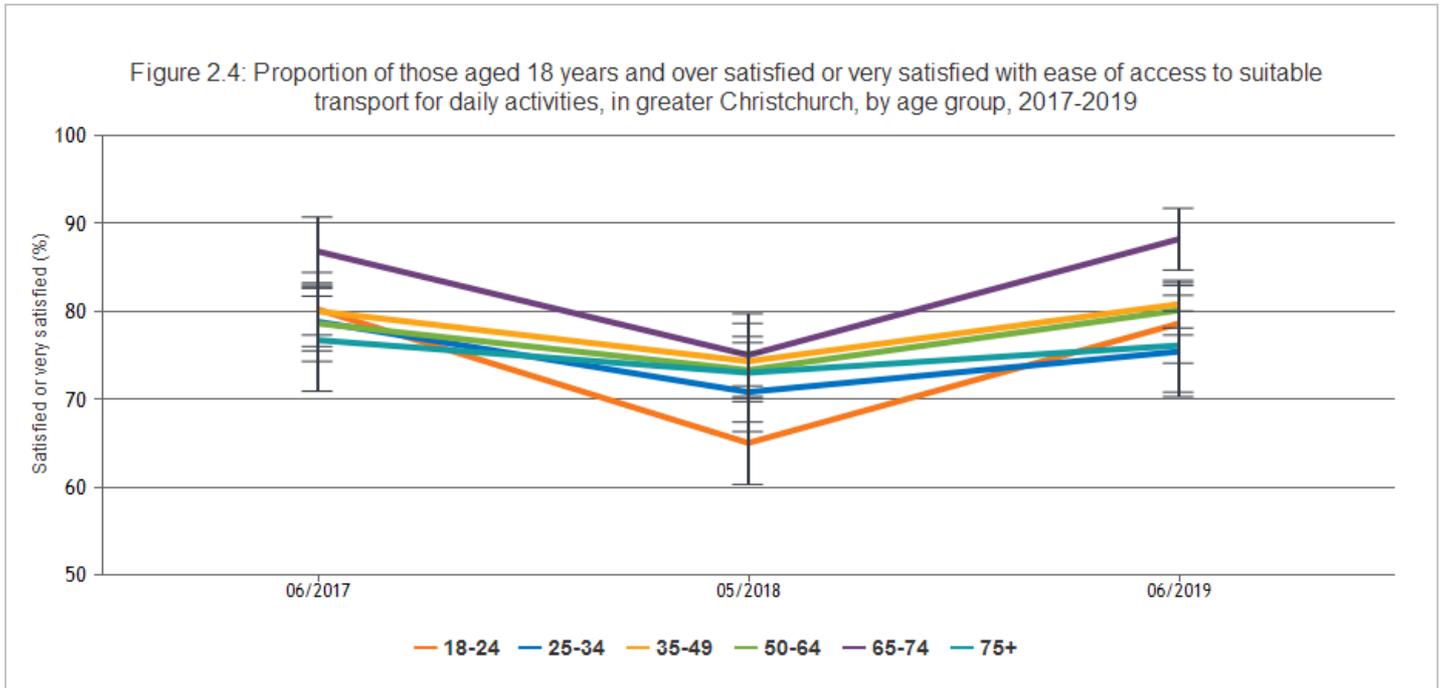
The figure shows that satisfaction with ease of access to suitable transport decreased over the 2017 to 2018 time period then increased over the 2018 to 2019 time period: in Christchurch City (74.0% to 82.2%; +8.2 percentage points); Selwyn District (68.5% to 69.9%; +1.4 percentage points); and Waimakariri 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.

## Breakdown by ethnicity



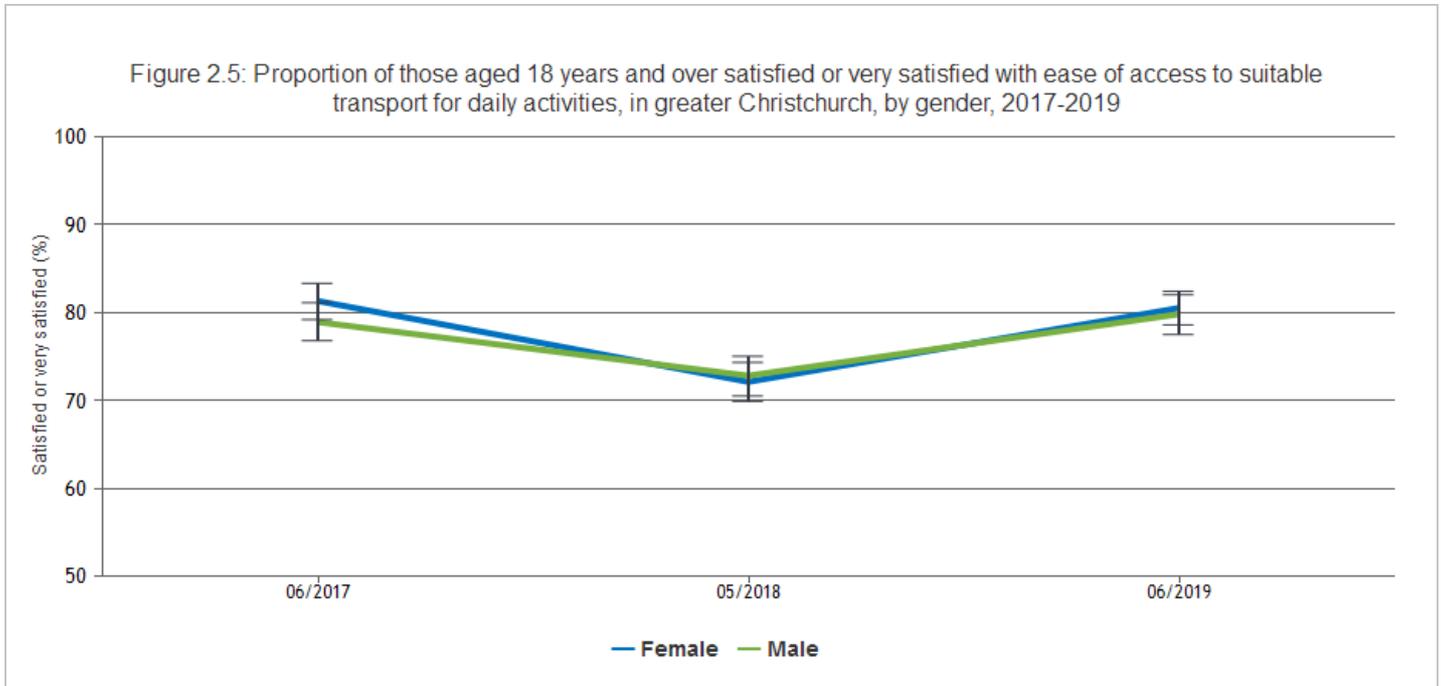
The figure shows that the proportion of European, Māori, and Pacific/Asian/Indian respondents who reported being satisfied or very satisfied with their ease of access to suitable transport, converged across greater Christchurch from 2017 to 2018. This pattern of convergence was followed by an overall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

## Breakdown by age



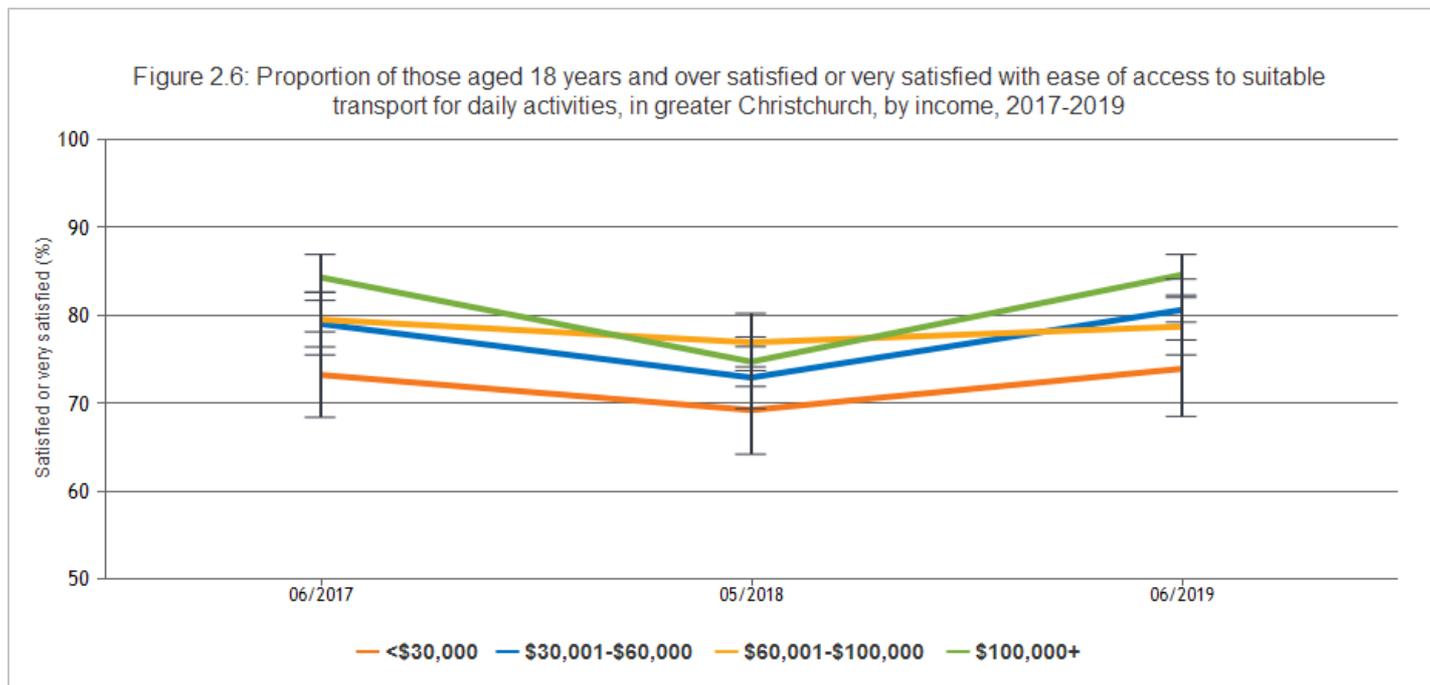
The figure shows that the proportion of respondents who reported being satisfied or very satisfied with their ease of access to suitable transport decreased for all age groups from 2017 to 2018. The largest decrease was in the 18 to 24 years age group, for which the proportion decreased by 15 percentage points (80.2% in 2017 and 65.0% in 2018). In 2019, there are less pronounced between-group differences compared with 2018, with the exception of the proportion for the 65 to 74 years age group being statistically significantly higher than for the other groups.

## 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, in 2017, 2018, and 2019.

## 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 2019 (73.9% for <\$30,000 to 84.6% for \$100,000+). However, there is a general pattern of increasing satisfaction with increasing income. In 2017 - but not 2018 - 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 indicating that they were satisfied or very satisfied with their ease of access to suitable transport in greater Christchurch in 2017, 2018, and 2019 (for example, 70.4% with a long-term health condition or disability and 82.6% without, 2019). The size of this difference remained relatively unchanged from 2017 to 2019 ( $\approx 12$  percentage points at each time-point).

## Data Sources

Source: Canterbury District Health Board.

**Survey/data set:** Canterbury Wellbeing Survey, 2019. Access publicly available data from the Community and Public Health (Canterbury DHB) website [www.cph.co.nz/your-health/wellbeing-survey/](http://www.cph.co.nz/your-health/wellbeing-survey/)

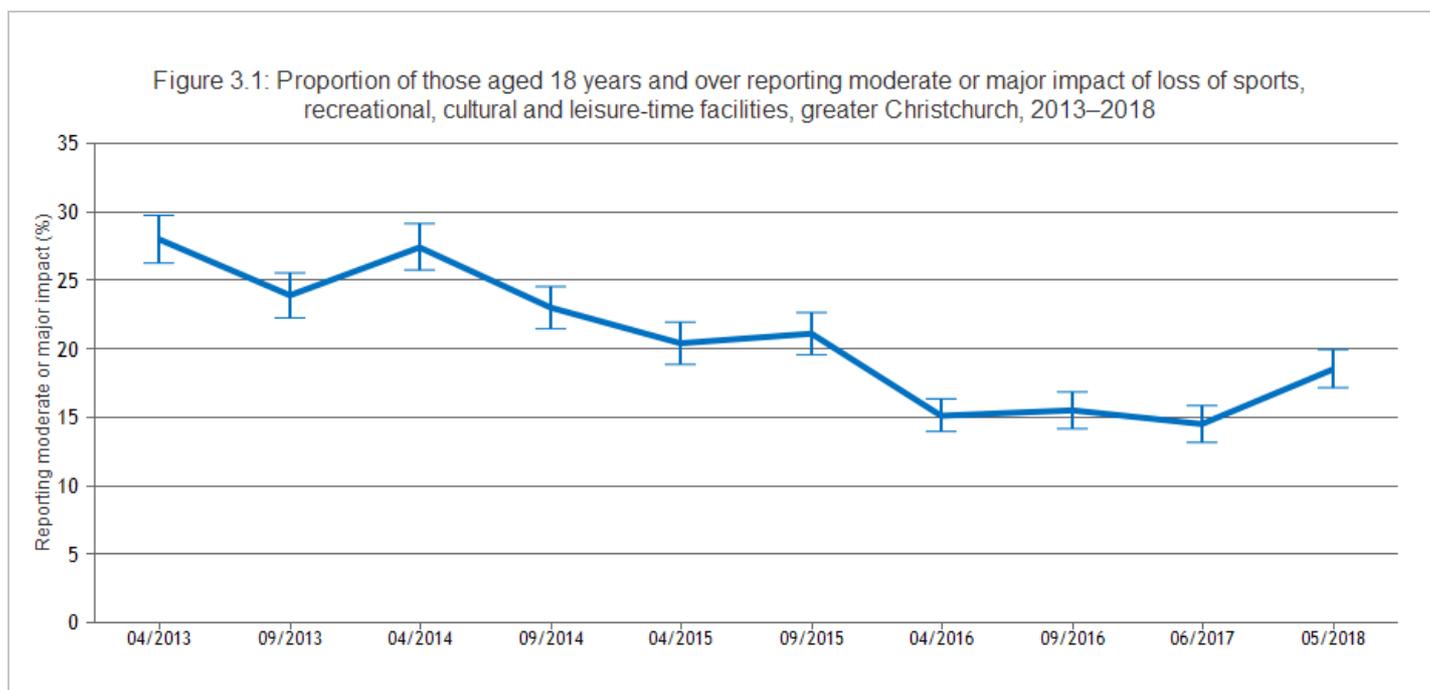
**Source data frequency:** Annually.

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

## RECREATIONAL AND CULTURAL FACILITIES

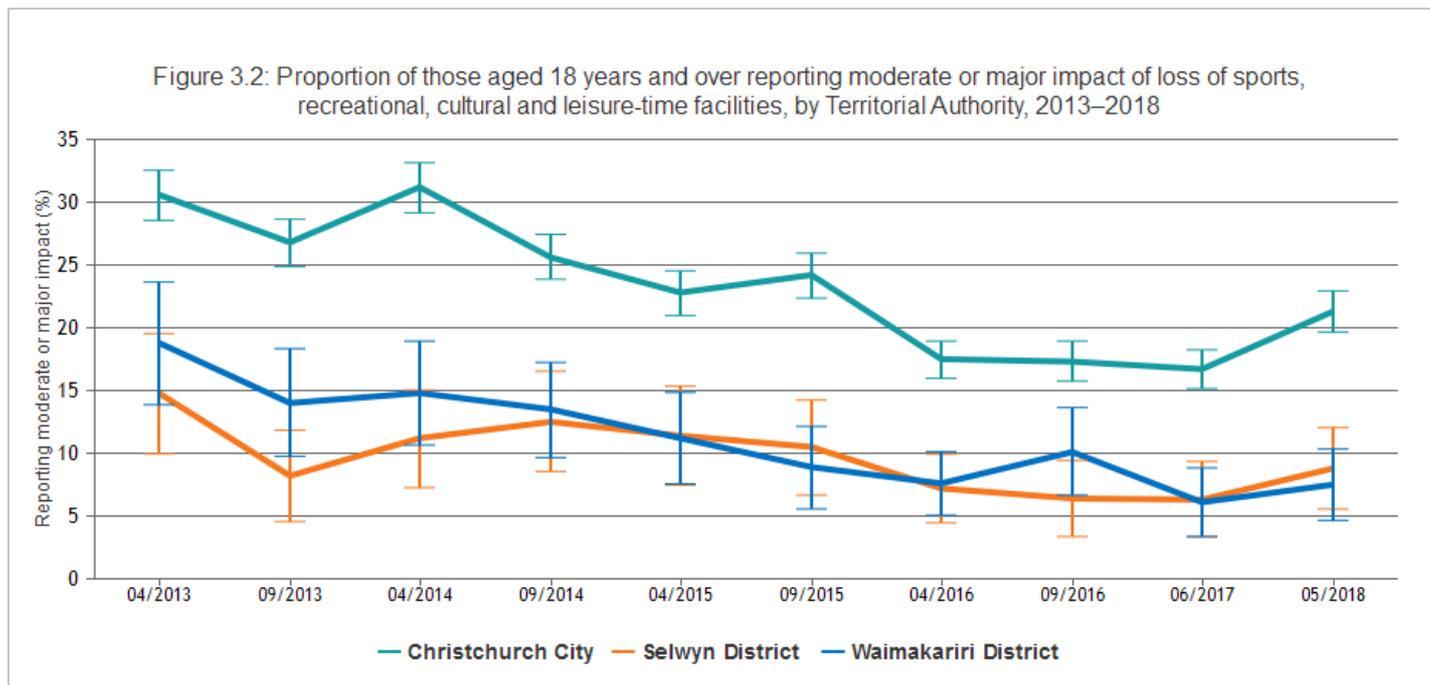
From the first Canterbury Wellbeing Survey in 2012 through until 2018, a group of questions addressed the impact of issues arising due to the Canterbury earthquakes. This group included questions regarding earthquake-related impact on sports, recreational, cultural and leisure-time facilities. These questions were discontinued in 2019 as part of the ongoing evolution of the survey.

This indicator presents the proportion of those 18 years and over, reporting moderate or major negative impact of loss of sports, recreational, cultural and leisure-time facilities.



The figure shows that the proportion of respondents reporting a moderate or major impact resulting from the loss of sports, recreational, cultural and leisure-time facilities declined steadily between April 2013 and April 2016. However, when these questions were last asked in 2018, 18.5 percent of respondents reported a moderate or major impact, up from 14.5 percent in 2017. This increase was statistically significant.

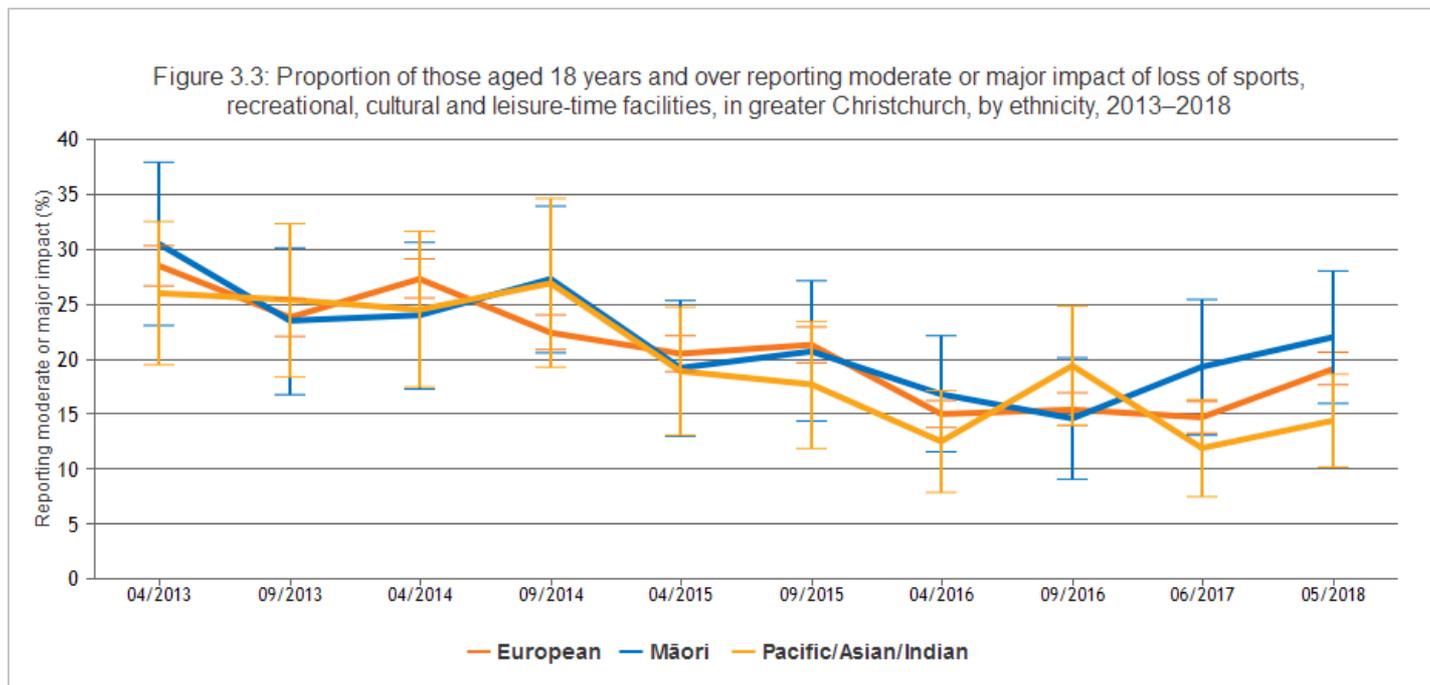
## Breakdown by Territorial Authority



The figure shows that respondents from Christchurch City accounted for most of the reported increase in moderate or major impacts from the loss of sports, recreational, cultural and leisure-time facilities, between 2017 and 2018. In 2018, 21.3 percent of Christchurch City respondents reported a moderate or major impact, up from 16.7 percent in 2017. This increase was statistically significant.

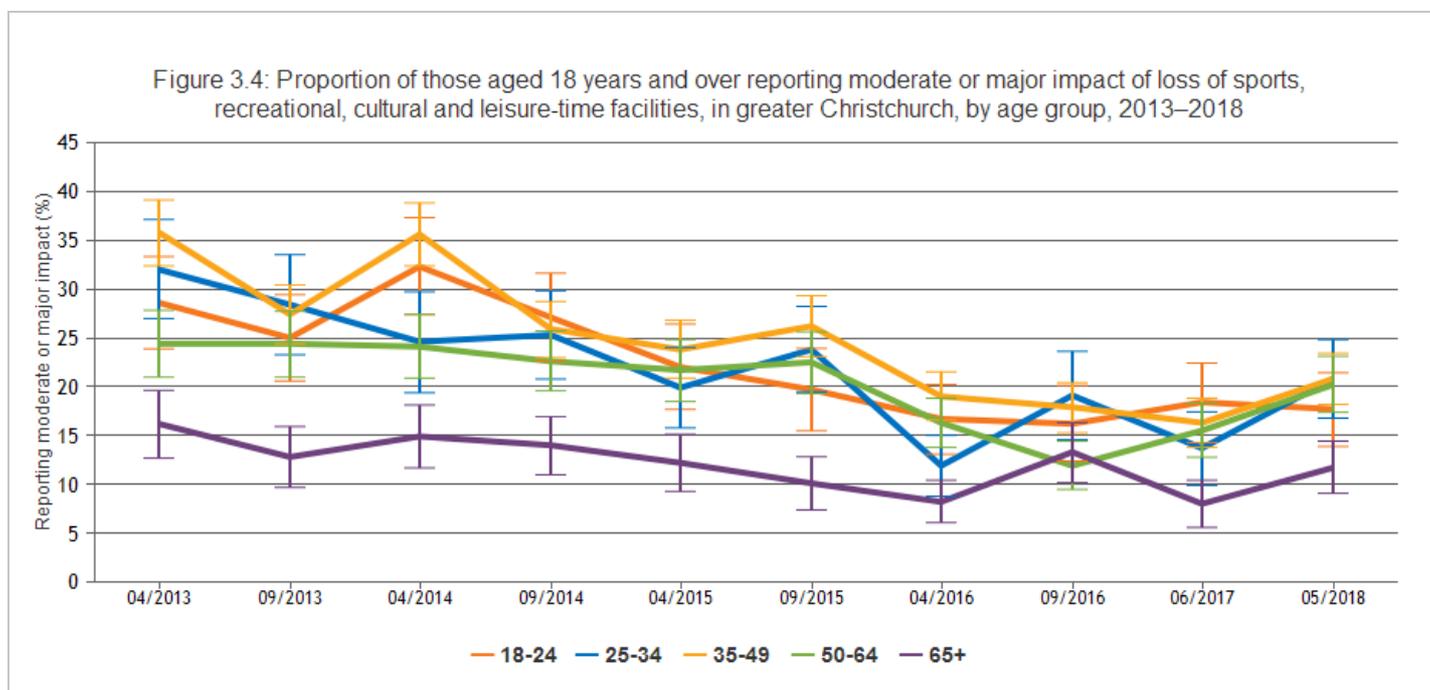
However, the overall trend in Christchurch City was a sizeable and statistically significant decline in the proportion reporting a moderate or major impact between 2013 and 2018 (from 30.6% to 21.3%). The time-series for Selwyn and Waimakariri districts showed lower proportions reporting a moderate or major impact (compared to Christchurch City) and flatter rates of decline.

## Breakdown by ethnicity



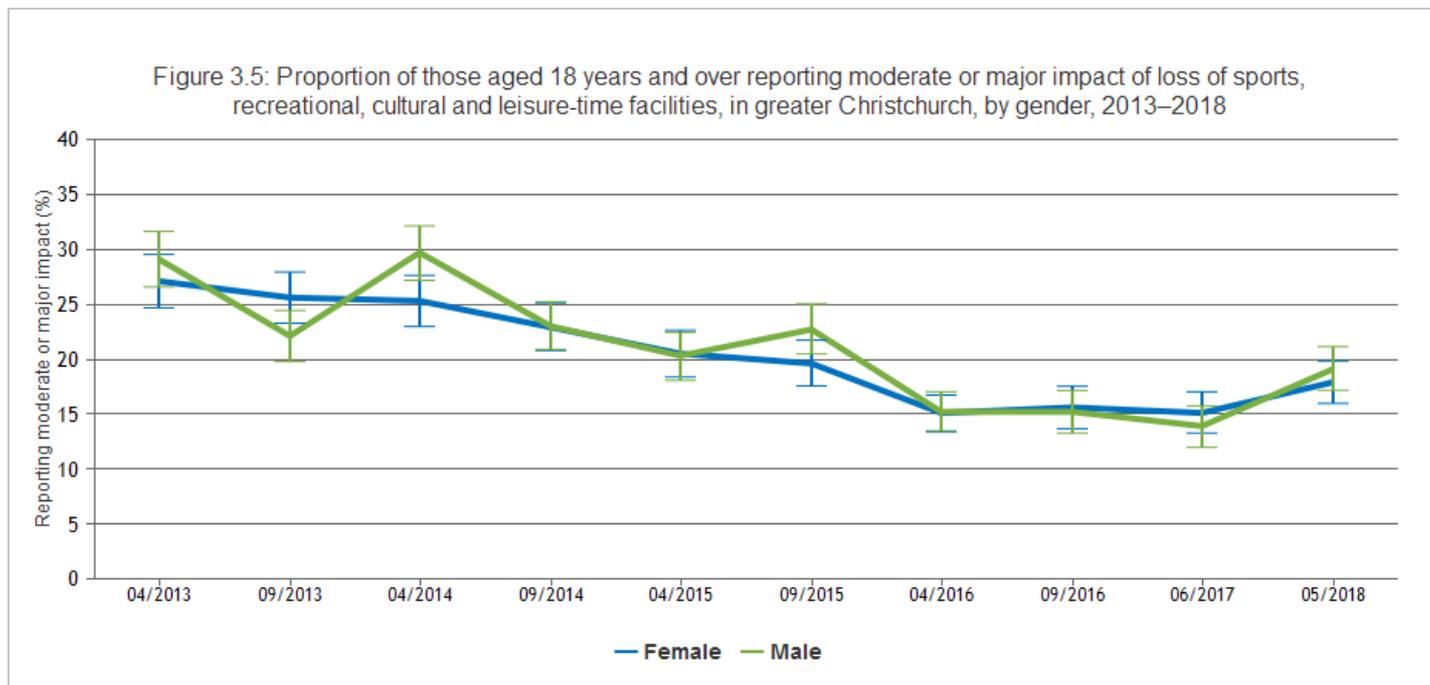
The figure shows that the proportion of respondents reporting a moderate or major impact from the loss of sports, recreational, cultural and leisure-time facilities declined between 2013 and 2016 for all ethnic groups. However, between 2017 and 2018, all ethnic groups showed an increase in the proportion reporting a moderate or major impact. European respondents showed the largest increase (4.4 percentage points) and this was the only statistically significant increase between 2017 and 2018. In 2018, Māori respondents (22%) showed the highest proportion reporting moderate or major impact, followed by European (19.1%) and Pacific/Asian/Indian (14.4%) respondents. These differences were not statistically significant.

## Breakdown by age



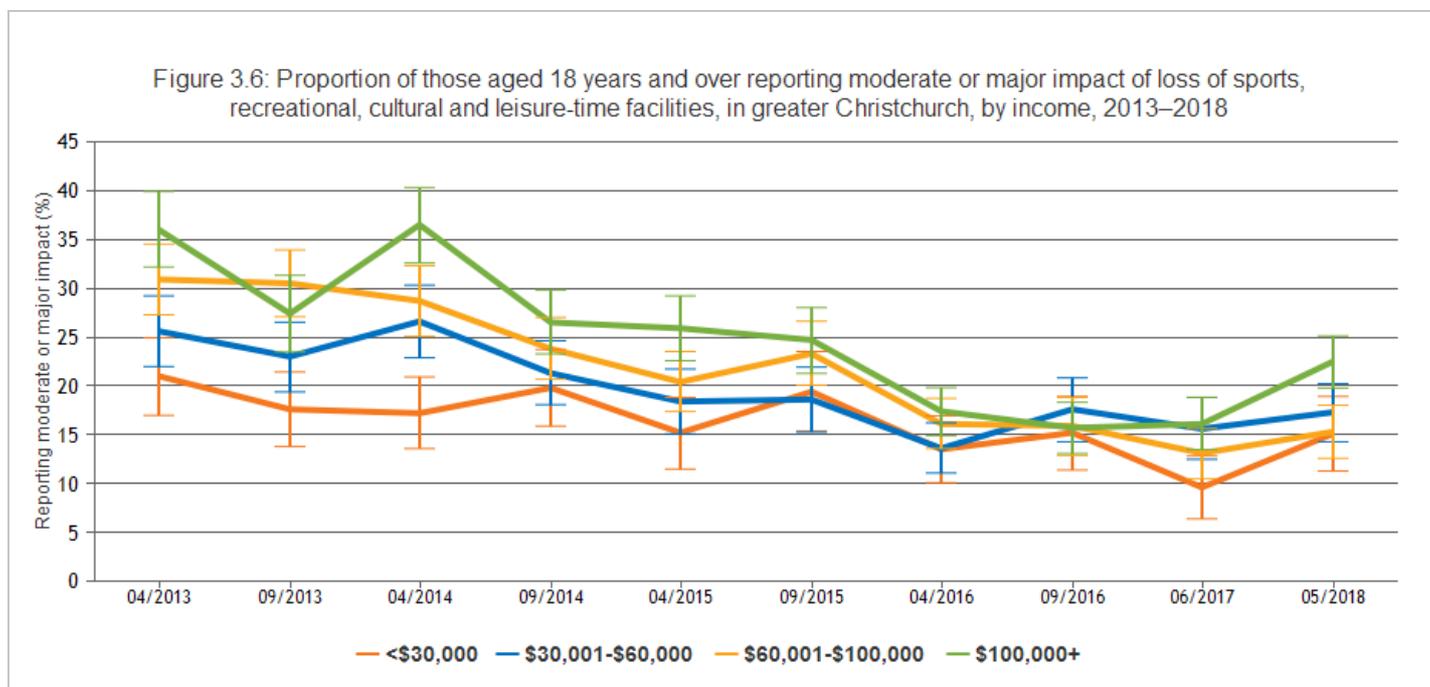
The figure shows that the proportion of respondents reporting a moderate or major impact resulting from the loss of sports, recreational, cultural and leisure-time facilities declined overall from 2013 to 2018, for all age groups. Over much of the time-series shown, those aged 65 years and over were less likely to report a moderate or major impact resulting from the loss of recreational and cultural facilities compared with all other age groups (the difference was statistically significant up until April 2016).

## Breakdown by gender



The figure shows that the proportion of respondents reporting a moderate or major impact resulting from the loss of sports, recreational, cultural and leisure-time facilities declined steadily for both females and males from 2013 to 2016. From 2017 to 2018, the proportion of females and males reporting a moderate or major impact from loss of recreational and cultural facilities, increased by 2.8 and 5.3 percentage points, respectively. This increase was statistically significant for males.

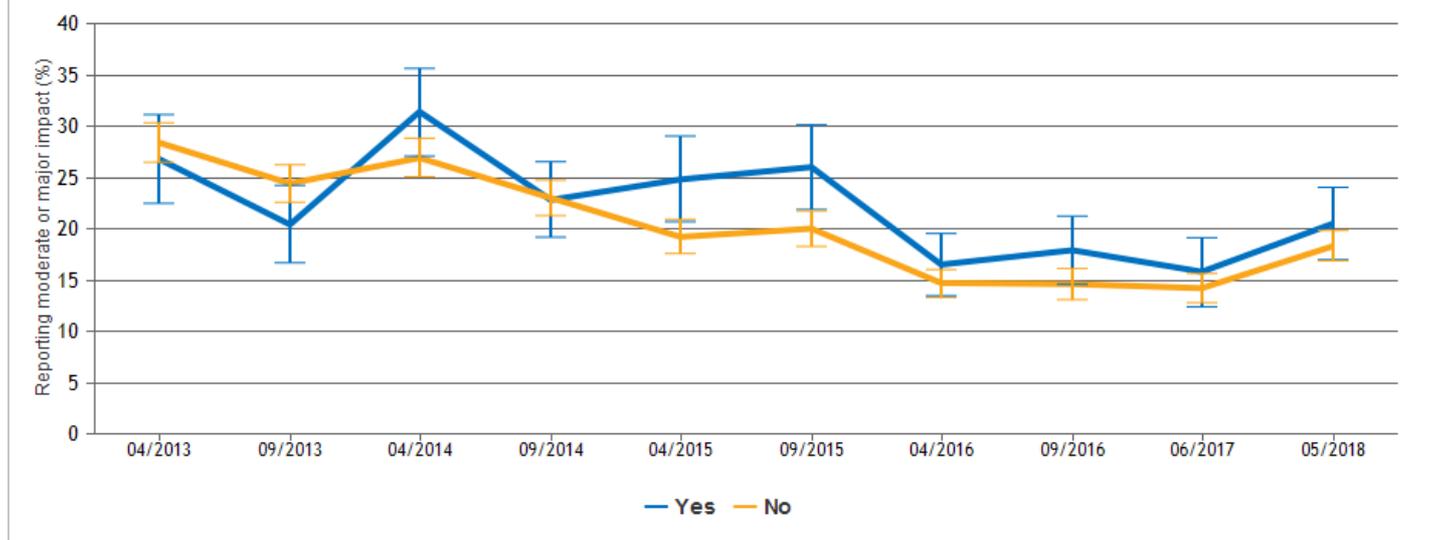
## Breakdown by income



The figure shows that from 2013 to 2018, there was an overall decrease, for all income groups, in the proportion of respondents reporting a moderate or major impact from the loss of sports, recreational, cultural and leisure-time facilities. In 2018, there was a statistically significant difference between the highest and lowest income groups: a higher proportion of those in the \$100,000+ annual household income group reported a moderate or major impact compared with the lowest income group (<\$30,000, 15.1%; \$100,000+, 22.5%, in 2018).

## Breakdown by disability

Figure 3.7: Proportion of those aged 18 years and over reporting moderate or major impact of loss of sports, recreational, cultural and leisure-time facilities, in greater Christchurch, by long-term health condition or disability, 2013–2018



The figure shows no statistically significant differences (at any time-point) in the proportion of respondents reporting moderate or major impact of loss of sports, recreational, cultural and leisure-time facilities in greater Christchurch, by long-term health condition or disability (for example 20.5% of those with a long-term health condition or disability reported moderate or major impacts, compared to 18.3% of those without in 2018).

### Data Sources

**Source:** Canterbury District Health Board.

**Survey/data set:** Canterbury Wellbeing Survey to 2018. Access publicly available data from the Community and Public Health (Canterbury DHB) website [www.cph.co.nz/your-health/wellbeing-survey/](http://www.cph.co.nz/your-health/wellbeing-survey/)

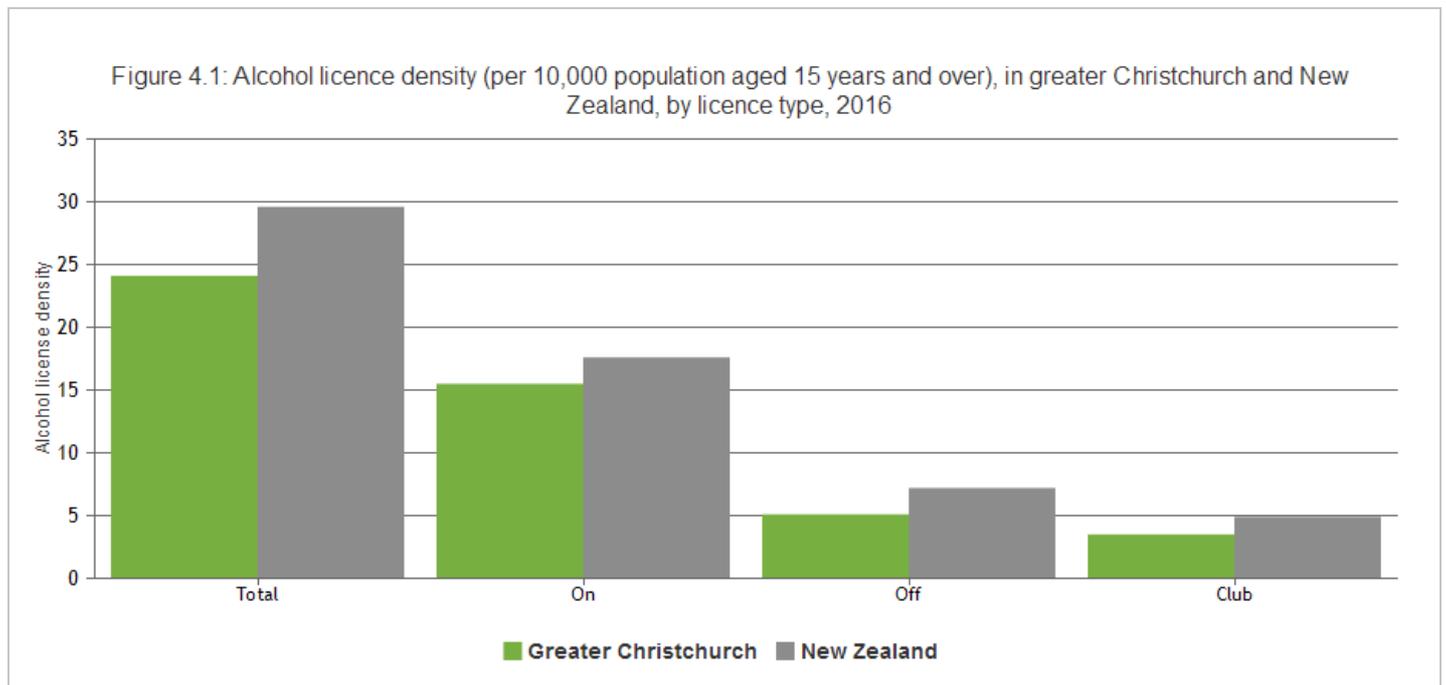
**Source data frequency:** No longer updated.

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

# ALCOHOL LICENCES

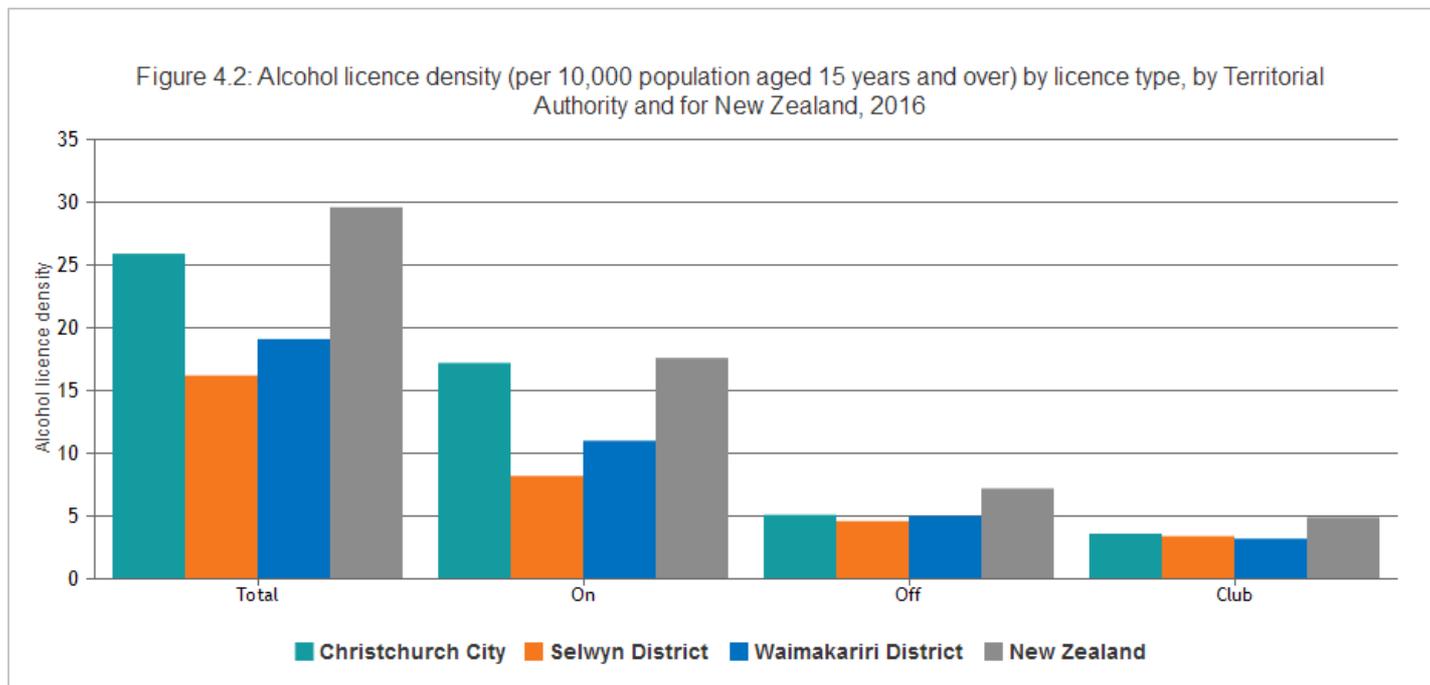
New Zealand and international research [8-10] highlights a clear relationship between the density of alcohol outlets (and the proximity of outlets to residential areas, and areas of higher social deprivation) and measures of alcohol-related harm, although the relationships are complex [11]. Broadly, 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 and New Zealand, for 2016 (the licence types are: off-licence— such as supermarket and grocery 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.

## Breakdown by Territorial Authority



The figure shows that alcohol licence density for 2016 differs across the three Territorial Authorities in greater Christchurch, particularly for the on-licence outlet type. For Christchurch City, the densities of the different alcohol licences (on-licence, off-licence, and club-licence) were: 17.2, 5.1, and 3.6 outlets per 10,000 population, respectively (total for Christchurch City 25.9/10,000). For Selwyn District, the densities of the different alcohol licences were 8.2, 4.6, and 3.4 outlets per 10,000 population, respectively (total 16.2/10,000), and in Waimakariri District, 11.0, 5.0, and 3.2 outlets per 10,000 population, respectively (total 19.1/10,000). Selwyn District had the lowest alcohol licence density in the greater Christchurch area in 2016.

### Data Sources

**Source:** Environmental Health Indicators Programme, Massey University.

**Survey/data set:** Administrative data for 2016. Access publicly available alcohol licence density data from the Massey University website [www.healthspace.ac.nz/maps/maps\\_Alcohol.html](http://www.healthspace.ac.nz/maps/maps_Alcohol.html)

**Source data frequency:** Next planned update in 2020.

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

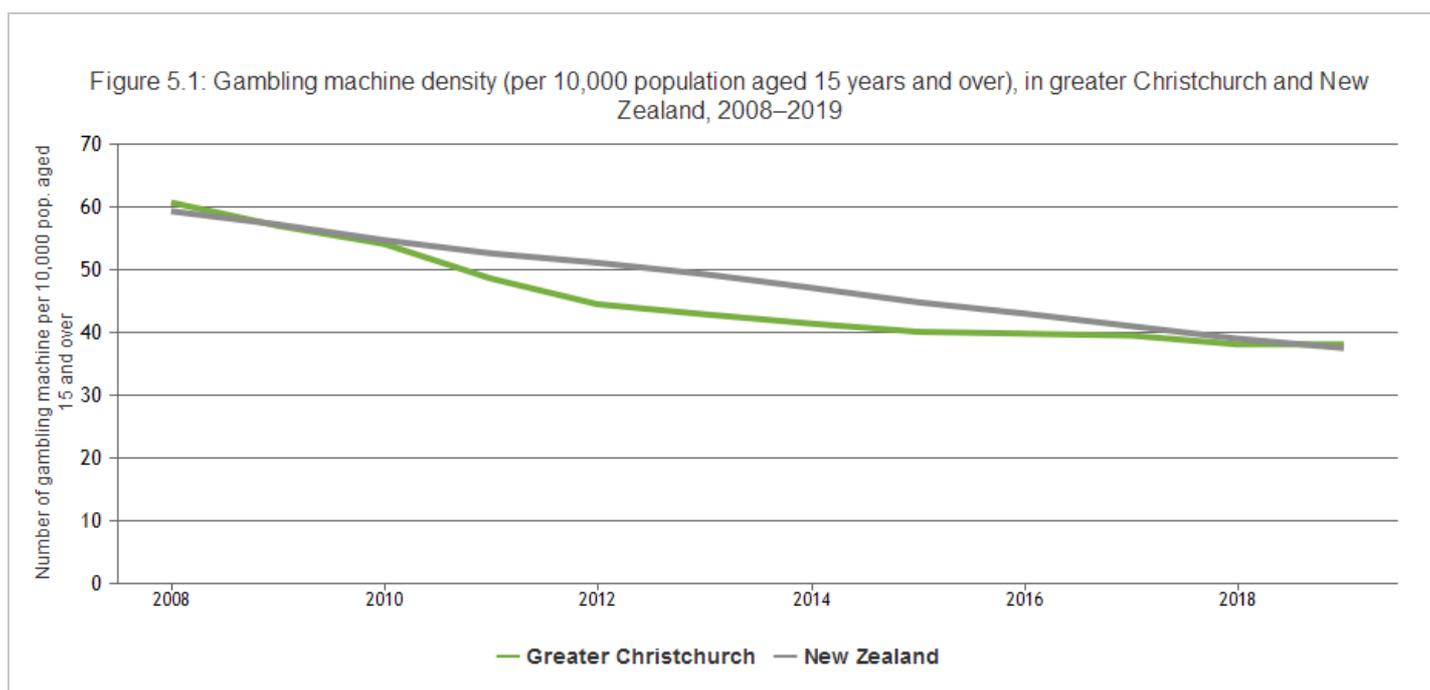
## GAMBLING MACHINES

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 2019 (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.



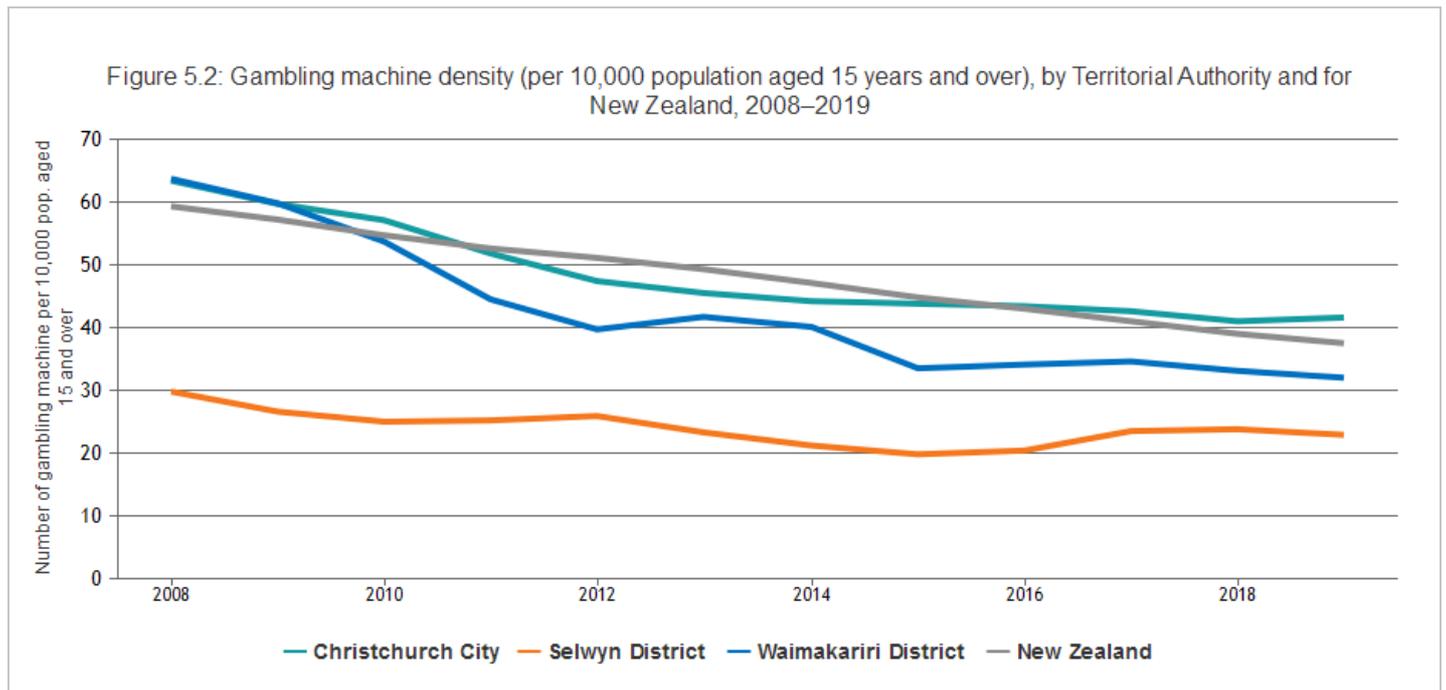
The figure shows that gambling machine density in greater Christchurch has declined substantially over the last ten years, from 60.7 machines per 10,000 population in 2008 to 38.1 machines per 10,000 population in 2019. This pattern is broadly in line with gambling machine density across New Zealand.

Similarly, gambling machine proceeds, per annum, per 10,000 population aged 15 years and over have been steadily declining across greater Christchurch and New Zealand over the last ten years. 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 \$2.12M per 10,000 population aged 15 years and over, in 2019 (\$212 per person), (data not shown).

For New Zealand, gambling machine proceeds have declined from \$2.71M to \$2.38M per 10,000 population over this time period. Although proceeds are down overall between 2008 and 2019, gambling machine proceeds for New Zealand have been

increasing slightly over the last four years, up from \$2.25M in 2015.

## 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 2019. The pattern is one of declining density overall, in keeping with the national picture. There is higher gambling machine density in Christchurch City, as the largest urban centre, and lower density in Selwyn District.

The pattern for gambling machine proceeds for Christchurch City and the Waimakariri and Selwyn districts (NZD per annum, per 10,000 population aged 15 years and over) is one of overall decline, which is broadly in line with gambling machine density across New Zealand overall (data not shown). For 2019, gambling machine proceeds are highest in Christchurch City (equivalent to \$241 per person aged 15 years and over) and lowest in Selwyn District (\$84 per person). Gambling machine proceeds for the Waimakariri District were approximately midway between Christchurch City and Selwyn District in 2019 (\$164 per person).

### Data Sources

**Source:** Department of Internal Affairs.

**Survey/data set:** Administrative data to December 2019. Access publicly available data from the Department of Internal Affairs website [www.dia.govt.nz/diawebsite.nsf/wpg\\_URL/Resource-material-Information-We-Provide-Gaming-Machine-Venues-Numbers-and-Expenditure-by-Territorial-AuthorityDistrict](http://www.dia.govt.nz/diawebsite.nsf/wpg_URL/Resource-material-Information-We-Provide-Gaming-Machine-Venues-Numbers-and-Expenditure-by-Territorial-AuthorityDistrict)

**Source data frequency:** Quarterly.

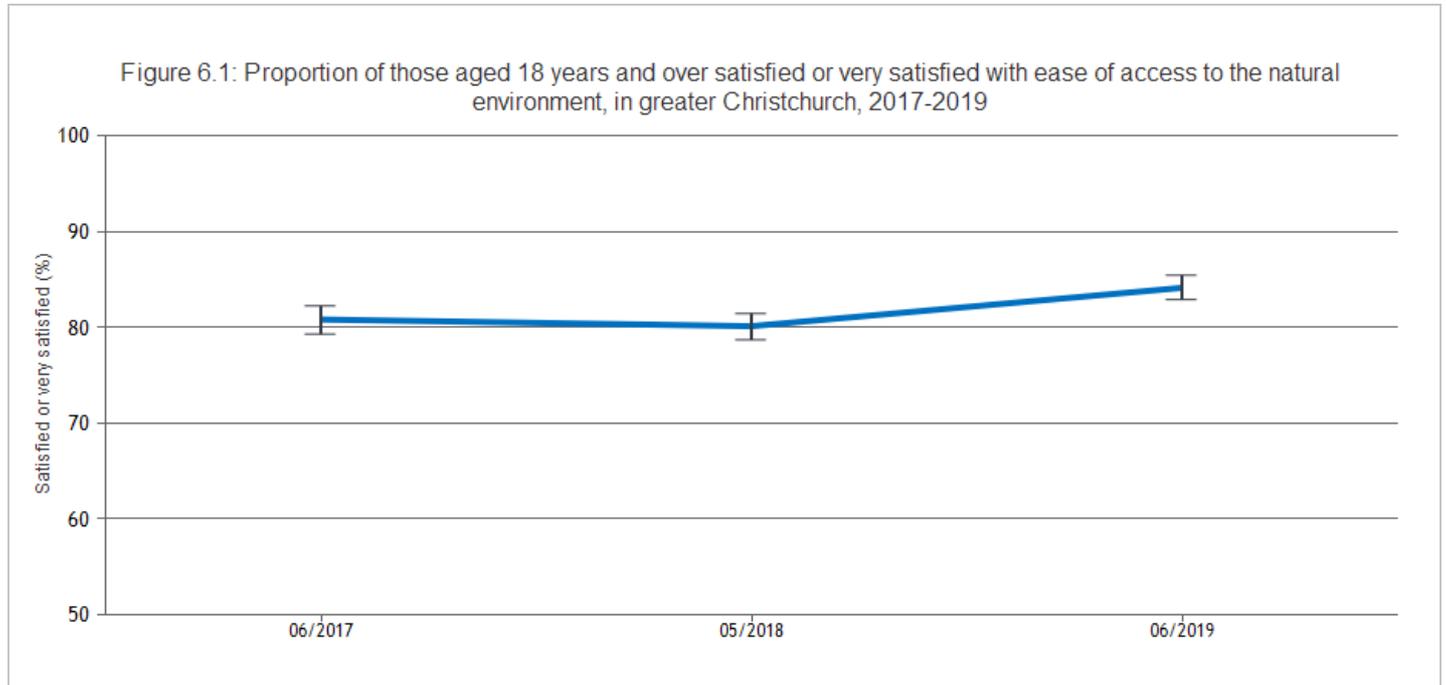
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## ACCESS TO NATURAL ENVIRONMENT

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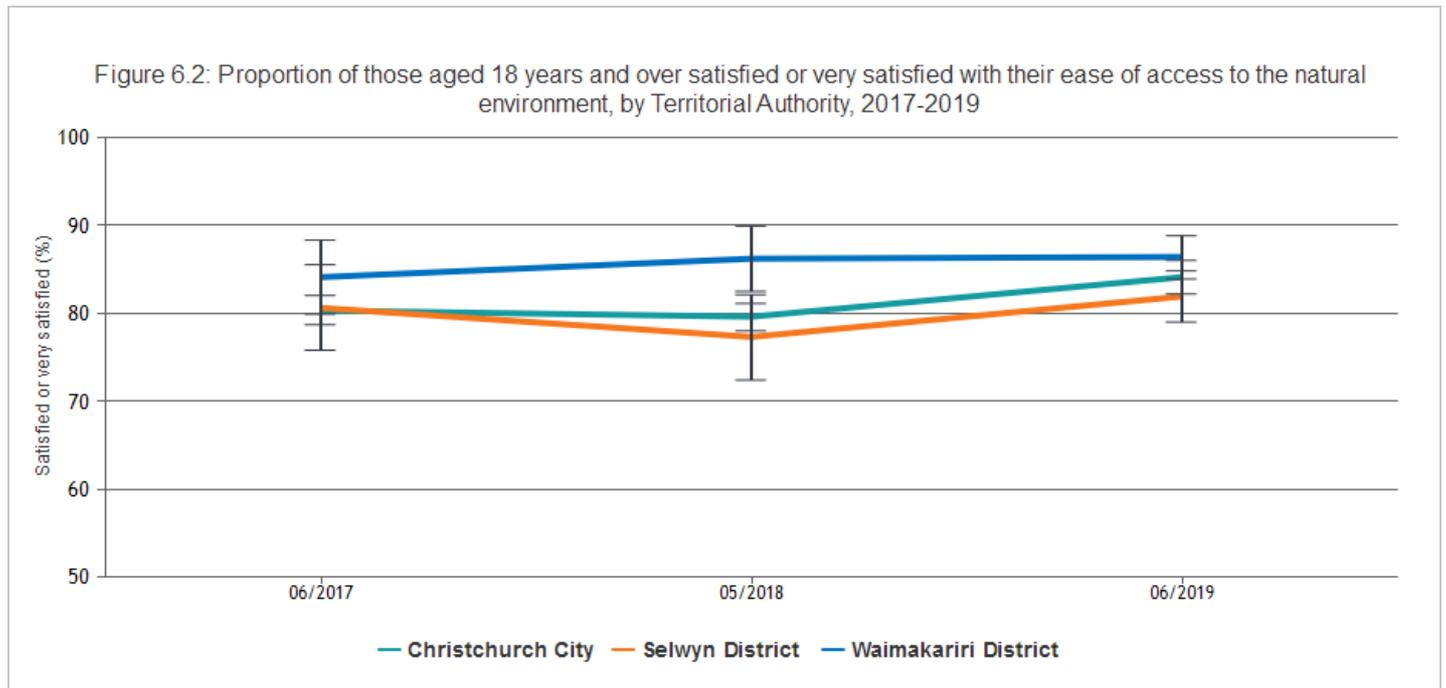
Access to natural environments can buffer stress [4], and visits to public conservation areas can improve mental health and wellbeing [5]. This indicator is based on the Canterbury Wellbeing Survey's 'access to the natural environment' question, that broadly defines the natural environment as "rivers,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



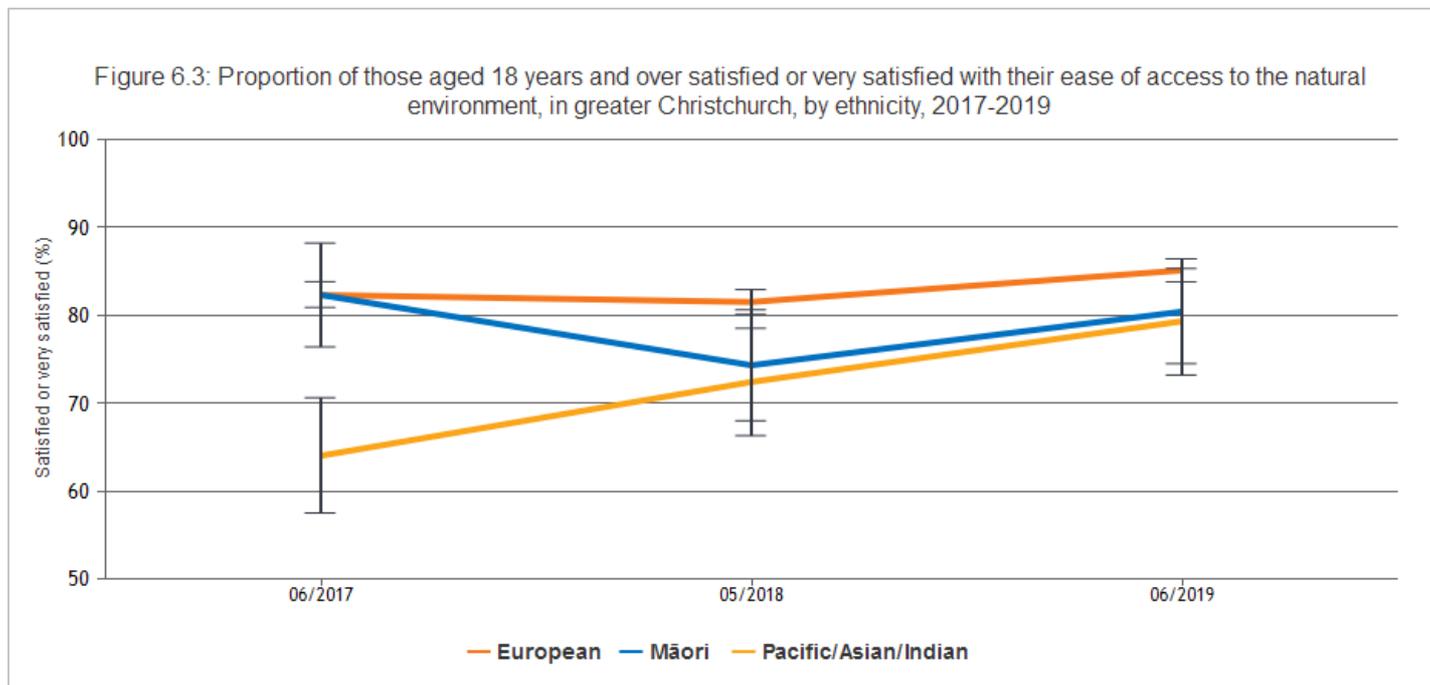
The figure shows that more than eighty percent of greater Christchurch residents expressed satisfaction with their ease of access to the natural environment in 2017, 2018 and 2019 (80.8%, 80.1%, and 84.1%, respectively).

## Breakdown by Territorial Authority



The figure shows a slight shift in the proportion of respondents, satisfied or very satisfied with their ease of access to the natural environment, by Territorial Authority, between 2017 and 2019. 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 have converged and there are no statistically significant differences between the Territorial Authorities (Christchurch City, 84.1%; Selwyn District, 81.9%; and Waimakariri District 86.4%).

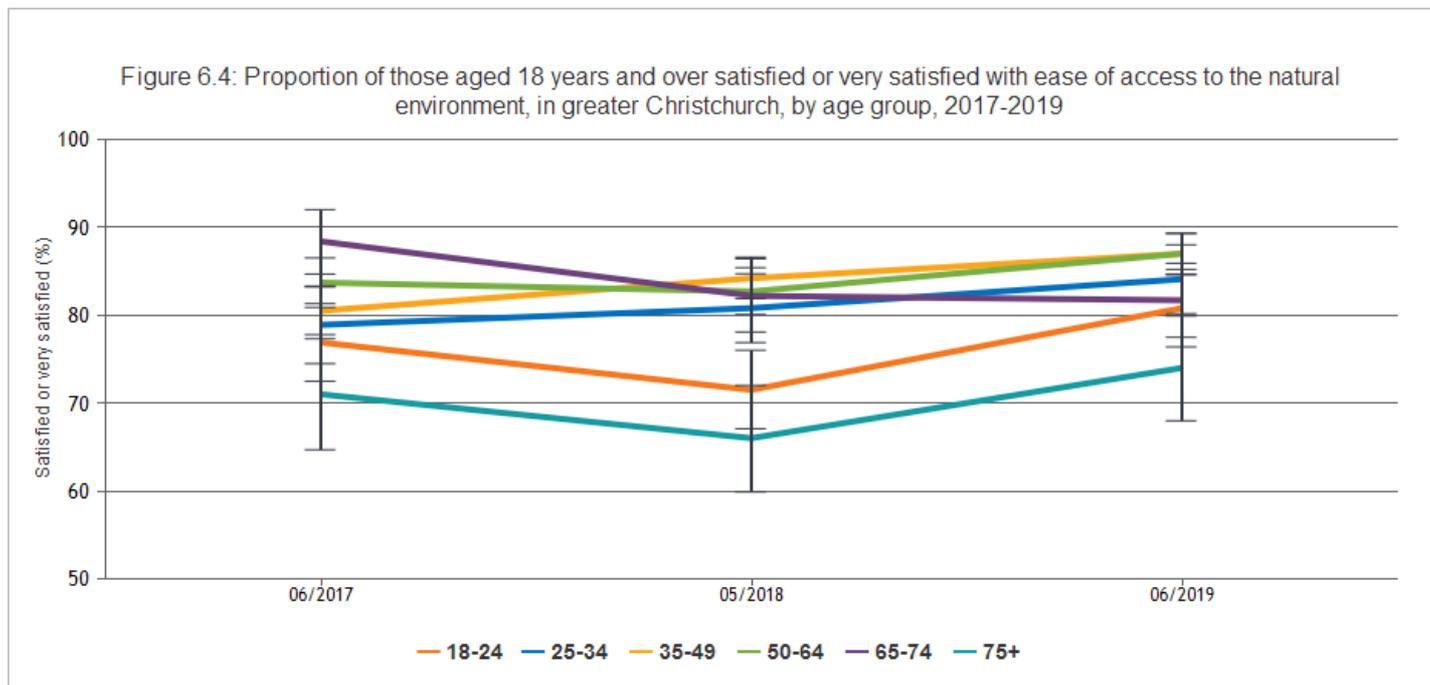
## Breakdown by ethnicity



The figure shows a shift in the proportions of European, Māori, and Pacific/Asian/Indian respondents, who reported being satisfied or very satisfied with their ease of access to the natural environment, across greater Christchurch from 2017 to 2019. In 2017, a statistically significantly lower proportion of Pacific/Asian/Indian respondents were satisfied with their ease of access to the natural environment, compared with both European and Māori respondents.

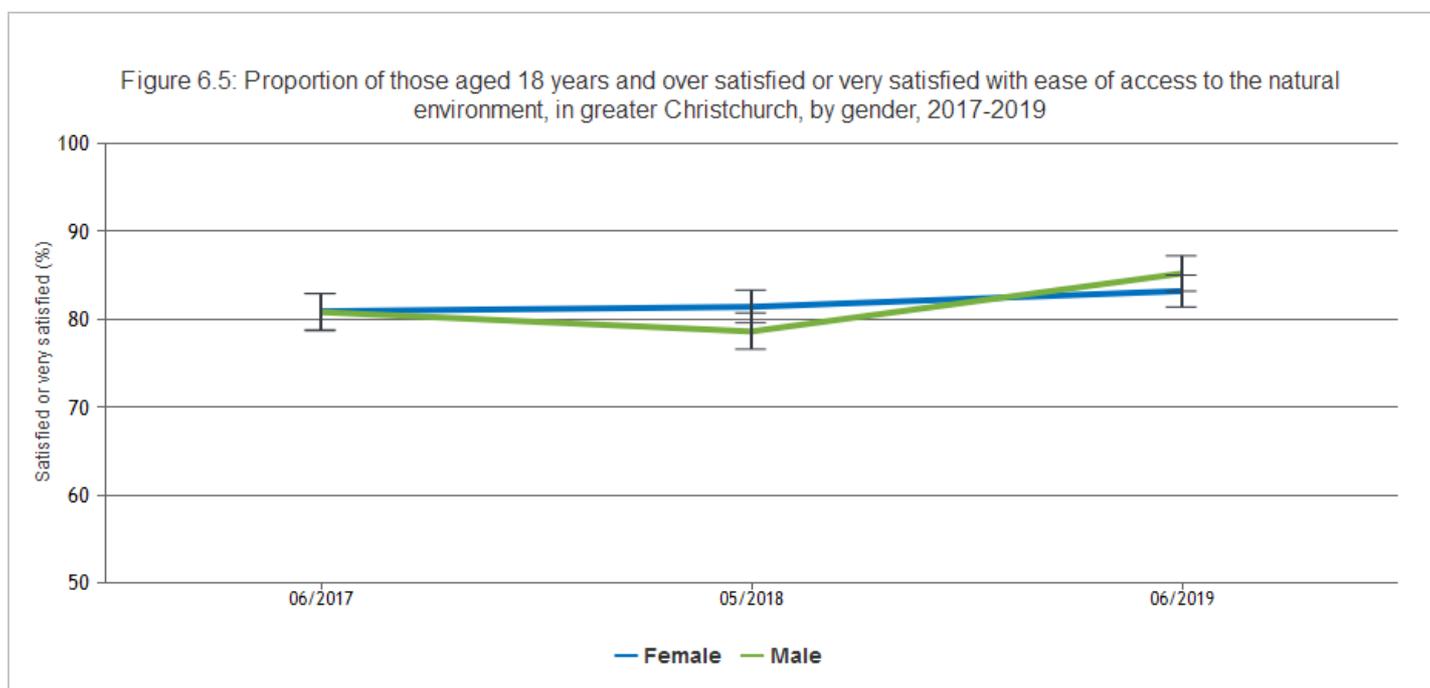
The 2019 result highlights substantial and statistically significant improvement in Pacific/Asian/Indian respondents' satisfaction levels (64% satisfied or very satisfied 2017; 79.3% 2019). The proportions for the Pacific/Asian/Indian, European, and Māori groups are all statistically similar in 2019.

## Breakdown by age



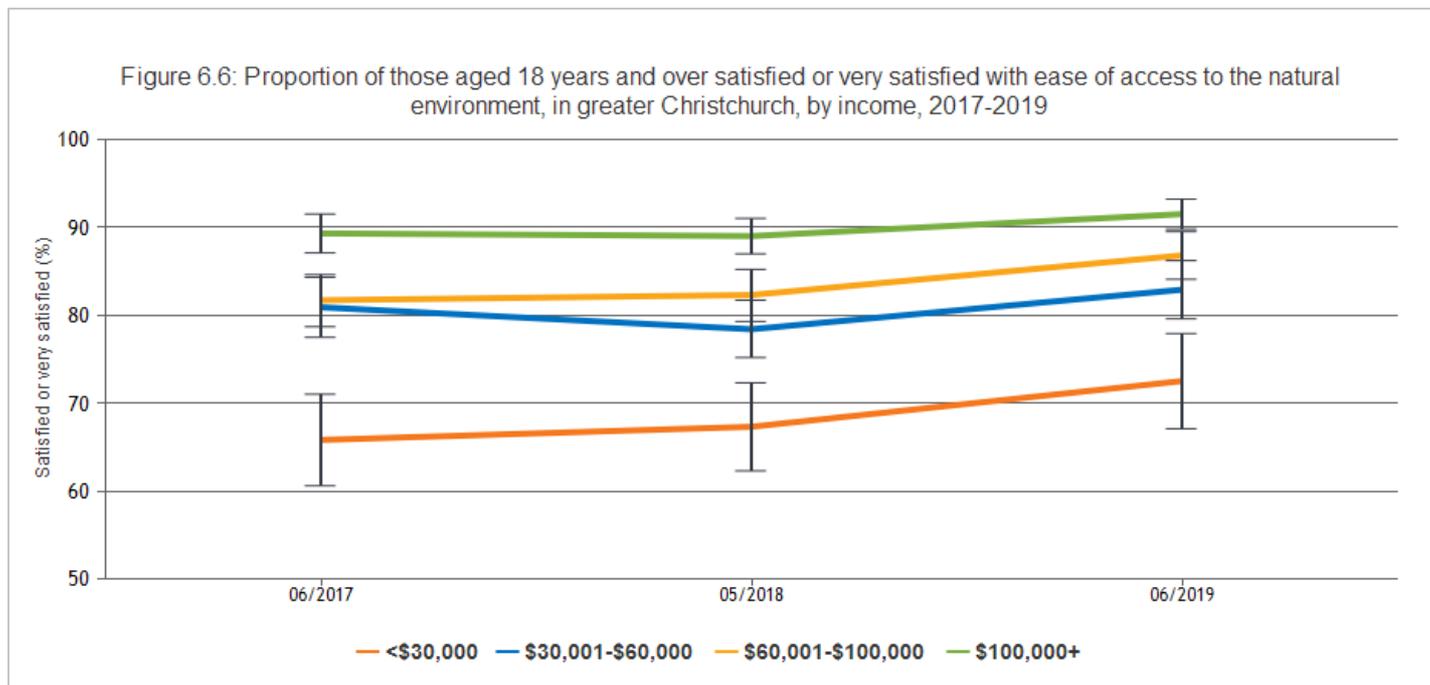
The figure shows that a majority of respondents, across all age groups reported being satisfied or very satisfied with their ease of access to the natural environment, in greater Christchurch, from 2017 to 2019. The current result indicates that the youngest age group and the oldest age group are both less satisfied with their access to the natural environment than the middle age groups (80.8% for the 18–24 years group and 74.0% for the 75+ years group, compared with 87.0% for both the 35–49 and 50–64 years groups). The difference between the oldest age group (least satisfied) and the middle age groups (most satisfied) is statistically significant.

## Breakdown by gender



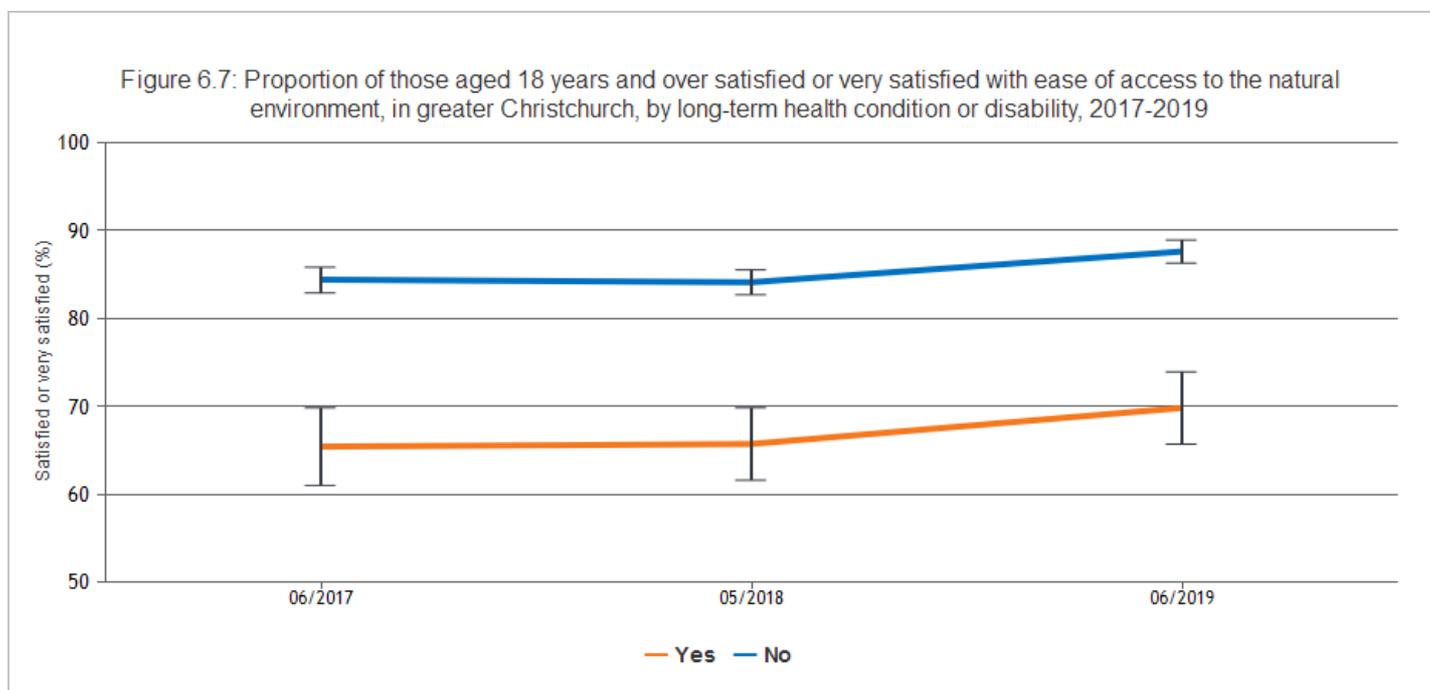
The figure shows that 78 percent or more of female and male respondents indicated that they were satisfied or very satisfied with their ease of access to the natural environment in greater Christchurch in 2017, 2018, and 2019 (females 83.2% and males 85.2% in 2019). There are no statistically significant 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 2019. There is a clear pattern of increasing satisfaction with increasing income. In 2019, 91.5 percent of respondents in the \$100,000+ annual household income group were satisfied with their ease of access to the natural environment compared with 72.5 percent of respondents in the <\$30,000 income group. The difference between these two groups was statistically significant at all three 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, who indicated that they were satisfied or very satisfied with their ease of access to the natural environment (in 2019, 69.8% of those with a long-term health condition or disability were satisfied or very satisfied; compared to 87.6% of those without). The difference between the two groups remains close to 20 percentage points (19 percentage points, 2017; 18.4 percentage points, 2018; and 17.8 percentage points, 2019).

## Data Sources

**Source:** Canterbury District Health Board.

**Survey/data set:** Canterbury Wellbeing Survey to 2019. Access publicly available data from the Community and Public Health (Canterbury DHB) website [www.cph.co.nz/your-health/wellbeing-survey/](http://www.cph.co.nz/your-health/wellbeing-survey/)

**Source data frequency:** Annually.

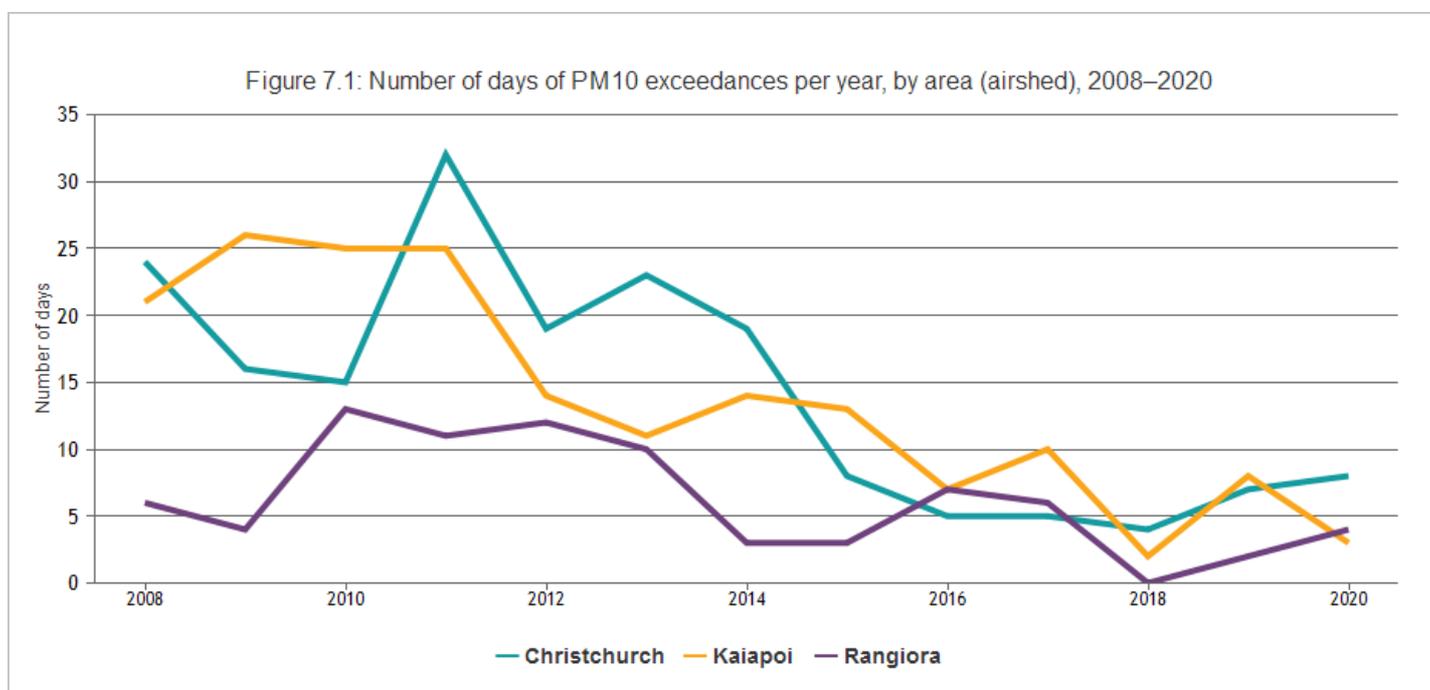
Metadata for this indicator is available at <https://www.canterburywellbeing.org.nz/index-data>

## 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 PM<sub>10</sub> 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 (2020) reporting year indicate that Kaiapoi met the National Environmental Standards for Air Quality in 2020 (3 exceedances), whereas Rangiora and Christchurch did not (4 and 8 exceedances, respectively). Some unusual winter weather patterns in 2018 resulted in unusually low PM 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/your-region/your-environment/air-quality/](http://www.ecan.govt.nz/your-region/your-environment/air-quality/)

**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>

## REFERENCES

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- 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. *Int J Behav Nutr Phys Act* 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 Juan de Dios Ortúzar, Willumsen LG (2011) *Modelling Transport*. New York: Wiley.
- 7 CERA (2012) *CERA Wellbeing Survey 2012 Report, prepared by AC Nielsen for the Canterbury Earthquake Recovery Authority*. AC Nielsen and the Canterbury Earthquake Recovery Authority.
- 8 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.
- 9 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.
- 10 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.
- 11 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.
- 12 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*.
- 13 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.
- 14 Rook H, Rippon R, Pauls R, Doust E, Prince J (2018) *Gambling harm reduction needs assessment*. Wellington, New Zealand: Sapere research group.
- 15 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.
- 16 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.
- 17 Pearce J, Mason K, Hiscock R, Day P (2008) A national study of neighbourhood access to gambling opportunities and individual gambling behaviour. *J Epidemiol Community Health* 62: 862-868.
- 18 Binde P (2013) Why people gamble: A model with five motivational dimensions. *International Gambling Studies* 13: 81-97.
- 19 Wardle H, Keily R, Astbury G, Reith G (2014) 'Risky places?': mapping gambling machine density and socio-economic deprivation. *J Gambl Stud* 30: 201-212.
- 20 Beckert J, Lutter M (2009) The inequality of fair play: Lottery gambling and social stratification in Germany. *European Sociological Review* 25: 475-488.
- 21 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.
- 22 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).
- 23 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.
- 24 Department of Internal Affairs Gambling in Pubs and Clubs (Class 4). Wellington: The Department of Internal Affairs.

- 25 Canterbury District Health Board (2019) *Canterbury Wellbeing Survey, June 2019: Report prepared by Nielsen for the Canterbury District Health Board and partnering agencies*. Christchurch: Canterbury District Health Board.
- 26 Environment Canterbury Regional Council (2019) *Air Quality in the Canterbury Region- Winter 2019 Update: Environment Canterbury Environmental Snapshot Report*. Christchurch: Environment Canterbury Regional Council.
- 27 World Health Organization (2013) *Health effects of particulate matter*. Copenhagen: World Health Organization.
- 28 World Health Organization (2005) *WHO Air quality guidelines for particulate matter, ozone, nitrogen dioxide and sulfur dioxide: Global update 2005, Summary of risk assessment*.

## FIND OUT MORE

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> **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 2019 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 Community and Public Health (Canterbury DHB) 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.