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Wellbeing during the first year of COVID-19

An analysis of the wellbeing
supplement to the NZ Household
Labour Force Survey

**SOCIAL
WELLBEING
AGENCY**

TOI HAU
TĀNGATA



Te Kāwanatanga o Aotearoa
New Zealand Government

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Executive summary

The emergence of COVID-19 almost immediately resulted in fundamental changes to the way New Zealanders lived their lives. This report focuses on how wellbeing in New Zealand changed in the immediate, short-term, and medium-term, using survey data over the first year of COVID-19, up until March 2021. We track outcomes for all New Zealanders, as well as key groups who might have been particularly impacted by COVID-19. These groups include parents, especially sole parents; disabled people; younger (18-39) and older (65+) people; Māori; Pacific people; and people living in Auckland.

Trends before and during the first year of COVID-19

We tracked 13 different wellbeing outcomes for 16 separate groups using the New Zealand General Social Survey and the Household Labour Force Survey (both representative of the New Zealand population, containing the same questions) before and during COVID-19. For each group and outcome, we conducted two statistical tests: one looking at the change between 2018 and June 2020 (collected during and immediately after the first national lockdown); and the second between June 2020 and March 2021 (the latest time point for which we have data). We repeated this analysis for only the subset of people in our 16 groups who were living in the Auckland region.

We found that, in general, reported wellbeing outcomes were more positive or about the same level in June 2020 as they were for the same group in 2018. The outcomes with statistically significant increases across most of the groups we looked at nationally were life satisfaction, having enough income, mental wellbeing, feelings of safety, trust in other people, trust in Parliament, trust in the police, trust in media, and trust in the health system.

The increase in life satisfaction across the population over this time is notable. Over the first year of COVID-19, the populations of Australia and UK were instead reporting a decline in life satisfaction. Using Treasury estimates of the value of social outcomes, the increase in life satisfaction in New Zealand implies a social benefit of \$4.5-19.8 billion – equivalent to 2-8% of New Zealand's GDP in 2020.

The only statistically significant worsening in wellbeing from 2018 to June 2020 was loneliness, particularly among Pacific people, men, people aged 65+, and people aged 18-39 in Auckland. However, for all of these groups other than 18-39 year-olds, rates of loneliness during COVID-19 were still better than other groups, despite worsening compared to 2018.

In the following 12 months, these initial benefits faded out for many outcomes. Self-reported health and most measures of trust fell for most groups between June 2020 and March 2021, so that by the end of our sample period, outcomes were at about the same level as in 2018. Some declines over the first year of COVID-19 were experienced only for some groups. For example, the life satisfaction of sole mothers in Auckland fell back to 2018 levels by March 2021, whereas for other parents (inside Auckland and nationally), life satisfaction remained higher. There was a similar pattern for Māori in Auckland relating to having enough income. For some groups and

outcomes, there was little initial improvement in June 2020, and then a subsequent decline. This includes family wellbeing of people aged 65+, sole mothers reporting having enough income, and experiences of discrimination among Māori. For many of these outcomes, this had the effect of further increasing inequities that already existed.

Impacts of lockdown

We examined immediate impacts of lockdown by observing reported outcomes for people who were interviewed immediately before the end of the Alert Level 3 lockdowns that occurred in May and August 2020. We compared these to outcomes for people interviewed immediately after the end of lockdown. We found clear evidence that life satisfaction was lower while people were in lockdown, and some evidence that loneliness also increased (potentially with delayed effects).

We also found evidence that lockdowns have different impacts on different groups. The largest negative impacts on life satisfaction were among Pacific people and sole mothers. We found a strong gender difference in loneliness, with men's reported levels of loneliness increasing much more during lockdowns than women. We found mixed effects of lockdown on trust in Parliament depending on group. For partnered mothers and working-aged women, trust was higher during periods of lockdown than immediately after lockdown, whereas for people aged 65+, lockdowns appeared to reduce trust in Parliament.

Drivers of wellbeing during COVID-19

Because Stats NZ returned to the same households four times over the first year of COVID-19, this meant that many of the same people were surveyed multiple times. We created statistical models that explained changes in reported wellbeing outcomes between June 2020 and March 2021 using changes in other things happening in peoples' lives over the same time. These statistical models are less likely to be affected by unobservable differences between people, and so might allow us to get closer to causal effects.

These statistical models indicate that life satisfaction over the first year of COVID-19 was heavily affected by health and loneliness. Various economic aspects, including having enough income and not being unemployed, were also moderately important. When looking at family wellbeing, loneliness and material hardship were about as important as for life satisfaction, but health, income and unemployment were less important.

These statistical models also included indications of whether the respondent was in lockdown or receiving the Winter Energy Payment (an economic support that was doubled during 2020) at the time of the survey. We found that life satisfaction, family wellbeing, and trust in other people were lower when the respondent was in lockdown than at other times in the first year of COVID-19. We also found evidence that Winter Energy Payment improved people's income adequacy (which likely indirectly improved various aspects of wellbeing, including life satisfaction) and family wellbeing during 2020.

Conclusion

These analyses indicated some concerning results relating to the wellbeing of some groups during the first year of COVID-19. We found evidence that loneliness increased for many groups from June 2020 to March 2021, relative to trends prior to COVID-19. Many groups (such as sole mothers in Auckland) did not experience the same benefits as the broader population, which increased inequity in many areas. While reported outcomes did improve for some outcomes and groups (for example, income adequacy among Pacific people), it was clear that substantial and inequitable barriers to wellbeing remained. Life satisfaction was lower during the weeks of lockdown in the 12 months we examined, and this appeared to particularly affect Pacific people, sole mothers, and people in Auckland.

The bulk of our results, however, were surprisingly positive, particularly given the circumstances during 2020 of the country responding to a new pandemic. Life satisfaction was increased for most groups over this period, as were many other aspects of wellbeing. While many positive effects did appear to fade out, they generally were not lower than baseline levels in 2018. We found some evidence of the positive impact of government supports on wellbeing over this time via the doubled Winter Energy Payment. Wellbeing was also likely to have been benefitted by actions we cannot directly measure here, including the coordinated and effective responses of communities such as non-government organisations, whānau, hapū and iwi, ethnic communities, churches, neighbours, and other support networks, looking out for one another in times of crisis.

Introduction

COVID-19 has been the largest shock to the way our society functions in recent memory. The pandemic, and the public health measures taken to respond to the pandemic, had very large impacts on the way business, employment, educational and training, migration and travel, leisure, and social interaction were undertaken. These changes to day-to-day life had the potential to impact on many different aspects of wellbeing, as well as how New Zealanders thought about each other and themselves in a global context.

The various impacts of the COVID-19 pandemic are still emerging and playing out, and it will be some time before it is clear what wellbeing in New Zealand looks like in the 'new normal', and how COVID-19 might have changed or accelerated existing trends in society. However, the changes brought on by COVID-19 can also be used as a case study to test the resilience of wellbeing in New Zealand, and the ability of institutions in this country to respond to a new and evolving challenge.

This report focuses on data collected from a nationally representative sample of the New Zealand population via Stats NZ surveys during the first year of COVID-19 (see Figure 1: Timeline of COVID-19 related events in New Zealand, Dec 2019 to Dec 2021). It explores how the reported wellbeing of the population – and key groups within this population – changed over this time. The report summarises key insights from three pieces of analytical work:

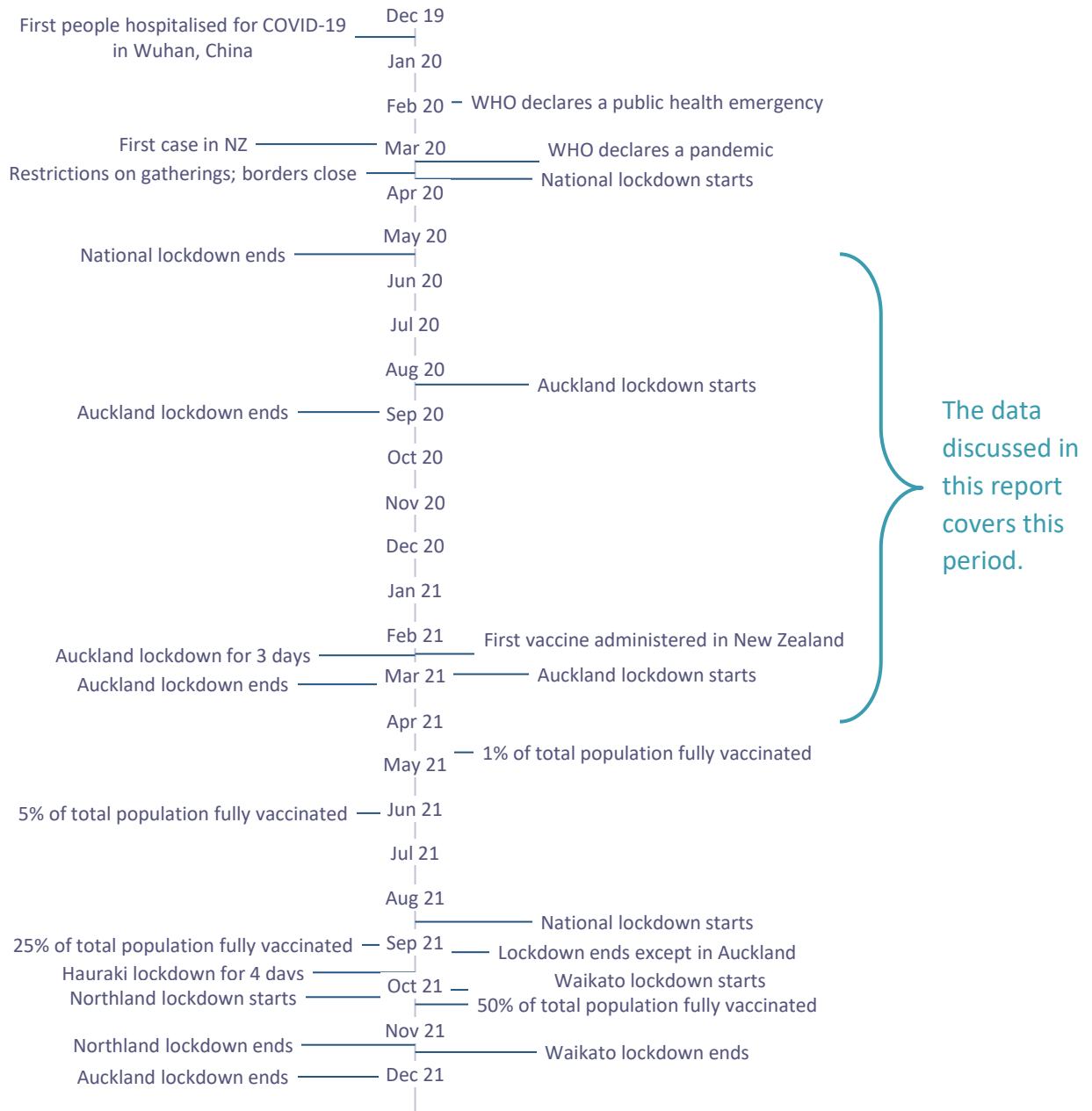
1. A comparison of high-level trends in various wellbeing measures, from the 2016 and 2018 New Zealand General Social Survey, and the 2020-21 Household Labour Force Survey.
2. An examination of how various aspects of wellbeing changed in the short-term after the ending of Level 3 lockdowns in May 2020, August 2020, and March 2021.
3. Statistical models looking at the drivers of wellbeing over the first year of COVID-19, leveraging the fact that in many cases, the same people were interviewed up to four times over this period.

In each of these pieces of work, we track outcomes for all New Zealanders, as well as key groups who might have been particularly impacted by COVID-19. These groups include parents, especially sole parents; disabled people; younger (18-39) and older (65+) people; Māori; Pacific people; and people living in Auckland.

This report is not intended to be an exhaustive look at wellbeing during COVID-19. It summarises quantitative data from a single set of survey questions during the first year of COVID-19. The Treasury (2022a) has produced a separate report that summarises a range of statistical data sources (including more recent data sources) to describe how various aspects of wellbeing in the Living Standards Framework have changed up until the first quarter of 2022. However, to get a fuller picture of wellbeing, it is also important to integrate the statistical findings in this report and the Treasury report with evidence from other sources, including qualitative data and community insights.¹

¹ Some relevant research reports that may help to provide this broader view include, regarding Māori: Cram (2020); Houkamau et al. (2021); Waitoki & McLachlan (2022); Te One & Clifford (2021); regarding Pacific people: Fa'alii-Fidow (2020); Su'a-Tavila,

Figure 1: Timeline of COVID-19 related events in New Zealand, Dec 2019 to Dec 2021



Note: In this figure (and elsewhere in this report), we use 'lockdown' to refer to periods of Alert Level 3 or Alert Level 4. These periods contained restrictions on internal and international travel, gatherings, employment, commerce and education and training, except in essential circumstances. For a more detailed history of changes in Alert Levels, and what specific restrictions each Alert Level represented, see New Zealand Government (2022). Vaccination data in this figure are taken from the Our World in Data COVID-19 database.

Pereira & Manuleleua (2020); Colmar Brunton (2020); Health Quality & Safety Commission (2021); regarding disabled people: Independent Monitoring Mechanism (2021); Orakani et al. (2022); Health Quality & Safety Commission (2022); regarding older people: Cheung et al. (2022); regarding children and their families: Overall et al. (2021); Walker et al. (2021); Meissel et al. (2021); Jeffs, Lucas & Walls (2021); Education Review Office (2021); McNeill & Gillon (2022); regarding various groups: Prickett et al. (2020); Officer et al. (2022).

How did wellbeing change before and during COVID-19?

This section examines time series data for each quarter during the first year of COVID-19 from the Household Labour Force Survey, and contrasts this with data from 2016 and 2018 from the NZ General Social Survey, to indicate pre-COVID trends.² We discuss results from 13 different outcomes, which we have grouped into subjective wellbeing, economic wellbeing, health, loneliness, and social cohesion. We have also looked at each of these outcomes for 16 separate groups, separately reporting national data and data for people in the Auckland region (so 32 groups in total). These groups include comparisons focused on:

- Parents (sole mothers, partnered mothers, all women, sole fathers, partnered fathers, all men)³
- Disabled people (disabled people aged 18-39, 40-64, and 65+, and the equivalent age groups for all people)⁴
- Māori, Pacific people, non-Māori/Pacific people, and all people.

Given this large number of groups and outcomes, it is not possible to discuss each individually. Instead, we focus on the key findings we think are most likely to be of interest. This is determined in part by which changes are statistically significant (that is, the changes we see are not likely to have been caused by chance alone). We conducted two sets of statistical tests: the change between 2018 and June quarter of 2020 (to indicate initial COVID-19 effects); and the change between the June quarter of 2020 and the March quarter of 2021 (to indicate how wellbeing changed over the first year of COVID-19). The full results of these tests, across all 13 outcomes and 32 groups, are shown in Tables A1-6 in the Appendix.

² In all cases, the wording of questions between the General Social Survey and the Household Labour Force Survey was identical. However, there are three key differences between the two collections that may affect comparability (see Stats NZ, 2021a for more detail on survey methodology, including changes in the COVID-19 period):

1. The reporting period used here is different, given we are comparing annual values (in 2016 and 2018) to quarterly values (over 2020-21). (However, our analysis of the 2016-2018 data indicated little evidence for strong seasonal effects.)
2. Although the questions were worded the same between the two surveys, the context of the surveys (a social values survey, compared to a supplement to an economic survey) may have affected responses. OECD (2013) summarises evidence indicating that survey framing can affect responses of life satisfaction, although it appears these are mainly in contexts where the surrounding context is less salient in a person's day-to-day life, which may not be the case for economic factors.
3. Surveys during 2016 and 2018 were conducted face-to-face, whereas some surveys over 2020 and 2021 were conducted over the phone. This could affect how respondents might answer some questions, as well as who responds to the survey (as some respondents might be harder to reach over the phone).

One way of testing the effect of these differences would be to create a continuous time series of outcomes between the end of the Household Labour Force Survey in March 2021 and the beginning of the next iteration of the General Social Survey, which began collection in April 2021. Sudden jumps in outcomes over this time might indicate impacts of the different method and context of the surveys. Unfortunately, individual-level General Social Survey data was not yet available at the time of writing.

³ Parents were identified on the basis of reporting that they were a parent of a dependent (0-17 year old) child who lives in the same household. Distinctions between sole parents and partnered parents are made based on whether there was a partner living in the same household.

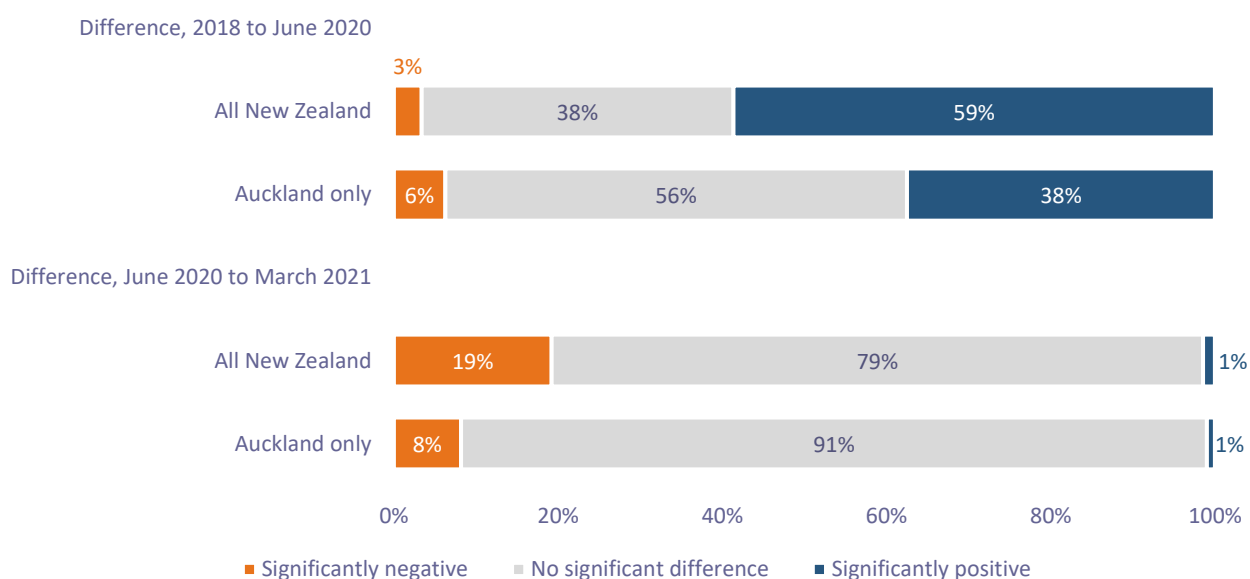
⁴ Disabled people were identified using the same method as described in Social Wellbeing Agency (2022). This is a proxy measure that is not based on identity, but rather primarily based on reported functional difficulties in undertaking everyday tasks.

Across the groups and measures we examined, most of the changes were positive

Between the 13 outcomes and 32 groups we focused on (and report in Tables A1-6), we estimated 416 differences between 2018 and June 2020, and a further 416 differences between June 2020 and March 2021. A summary of the statistical significance of these differences are summarised in Figure 2. Compared to 2018, 59% of the wellbeing measures we looked at were significantly higher in the June 2020 quarter, and for a further 38%, there was no statistically significant difference. Only 3% of group-outcome combinations indicated significantly worse results for wellbeing in June 2020 compared to 2018. When only looking at people in the Auckland region, more of our results (56%) showed no statistically significant difference (due to lower sample sizes), but relatively few (6%) indicated significantly worse wellbeing outcomes.

However, when comparing outcomes between the start and end of the first year of COVID-19, we found almost no cases (1%, nationally and in Auckland) where people reported statistically significant improvements in the March 2021 quarter, compared to the June 2020 quarter. A larger proportion (about 19% nationally) of comparisons implied worse wellbeing outcomes at the end of the first year of COVID-19 compared to the beginning. However, in both Auckland and nationally, the majority of comparisons over this time did not indicate a statistically significant change in outcomes.

Figure 2: Summary of statistical significance of differences in wellbeing outcomes



Note: This figure categorises all differences reported in Tables A1-6 into whether they are associated with statistically significant changes in results (at the 95% confidence level), or no significant change. For more details on potential issues with comparability between these surveys, see footnote 2.

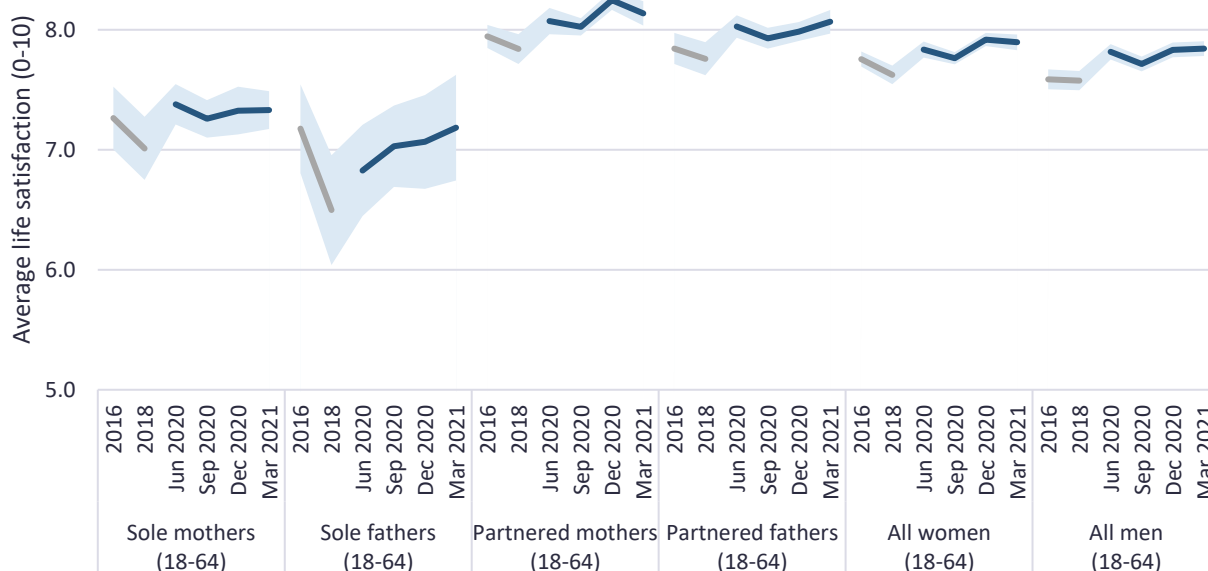
Subjective wellbeing

Reported life satisfaction was slightly higher in the period during COVID-19

Of the 32 groups we compared life satisfaction between 2018 and 2020, 24 reported a statistically significant increase in life satisfaction in the June 2020 quarter. For most groups we examined (in

particular, parents, older people, and Pacific people), the difference from 2018 to 2020 reverses a declining trend between 2016 and 2018 (see Figure 3 for trends among working-aged parents). While reported life satisfaction did change between May 2020 and April 2021, for most groups, these changes during COVID-19 were not as large as the differences between 2018 and first data point in 2020.

Figure 3: Life satisfaction, 2016 to March 2021, by parent status



Note: Shaded areas indicate 95% confidence intervals. Pre-COVID trends (from the NZ General Social Survey) are shown in grey; the trend over the first year of COVID-19 (from the Household Labour Force Survey) is shown in blue.

Whether these increases in life satisfaction are meaningful in people’s lives is a matter of interpretation. In one common method to determine practical significance, these differences work out to have effect sizes of 0.1 to 0.2, depending on group – magnitudes that would be characterised by most researchers as ‘small’.⁵ However, social wellbeing research indicates that life satisfaction is a highly sensitive and important outcome; even relatively small increases across the whole population can result in meaningful benefits for society; and many argue that life satisfaction should be used to make and evaluate policy decisions, including responding to COVID-19 (De Neve et al., 2020). In a tool commonly used to assess potential government investments, the Treasury (2022a) values an increase in wellbeing of one point on this scale of life satisfaction at between \$5,000 and \$22,000 per person per year. We can combine these values with the estimated differences in life satisfaction between 2018 and 2020-21 (Table 1). The resulting values provide an implied benefit across the whole adult (18+) population of \$4.5–19.8 billion. For comparison, this represents 1.7–7.7% of GDP of New Zealand in 2020.

⁵ These effect sizes are calculated by dividing the difference in a group’s average life satisfaction between 2018 and June 2020 by the standard deviation for the same group (standard deviations not reported here).

Table 1: Estimated value of increased life satisfaction in the adult population

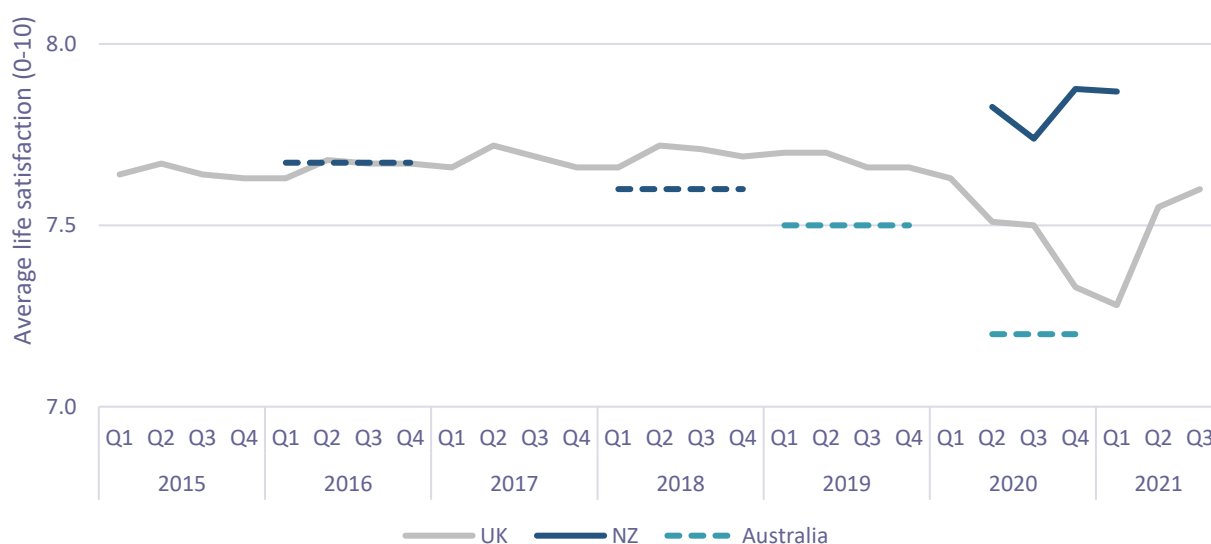
	2018	Jun 2020	Sep 2020	Dec 2020	Mar 2021	Total
Average life satisfaction	7.69	7.93	7.83	7.97	7.96	–
Difference from 2018	–	+0.24	+0.15	+0.28	+0.27	–
Estimated population	–	3,762,700	3,837,800	3,859,200	3,847,100	–
WELLBYs	–	226,878	139,123	274,355	261,388	901,744
Implied value - low (\$m)	–	\$1,134	\$696	\$1,372	\$1,307	\$4,509
Implied value - high (\$m)	–	\$4,991	\$3,061	\$6,036	\$5,751	\$19,838

Note: One ‘WELLBY’ represents one point on the life satisfaction scale for one person, over one year. We calculated WELLBYs by multiplying the life satisfaction difference from 2018 with the estimated adult population and dividing by four (to take into account that these surveys are quarterly). The estimated population was derived using population weights for survey respondents who answered the life satisfaction question – it may not be equal to the estimated resident population calculated using other means.

Over 2020, people in other countries were reporting lower life satisfaction

Both Australia and the United Kingdom have regular surveys of the population that ask a question on life satisfaction that is worded identically to the one used in New Zealand (UK Office for National Statistics, 2022; Australian Bureau of Statistics, 2021). In each of these countries, this question was asked prior to and after the initial outbreak of COVID-19. In both Australia and the United Kingdom, there was a rapid decline in reported life satisfaction over 2020 (Figure 4). This is in contrast with an increase in life satisfaction over the same period in New Zealand. The most recent data from the UK appears to show a return in life satisfaction to pre-COVID levels. Combined with a return to past levels of wellbeing in the most recent New Zealand data (as reported in The Treasury, 2022a), this might imply that COVID effects on life satisfaction is temporary.

Figure 4: Recent trends in life satisfaction across New Zealand, Australia, and UK



Note: Dotted lines indicate values that are reported annually.

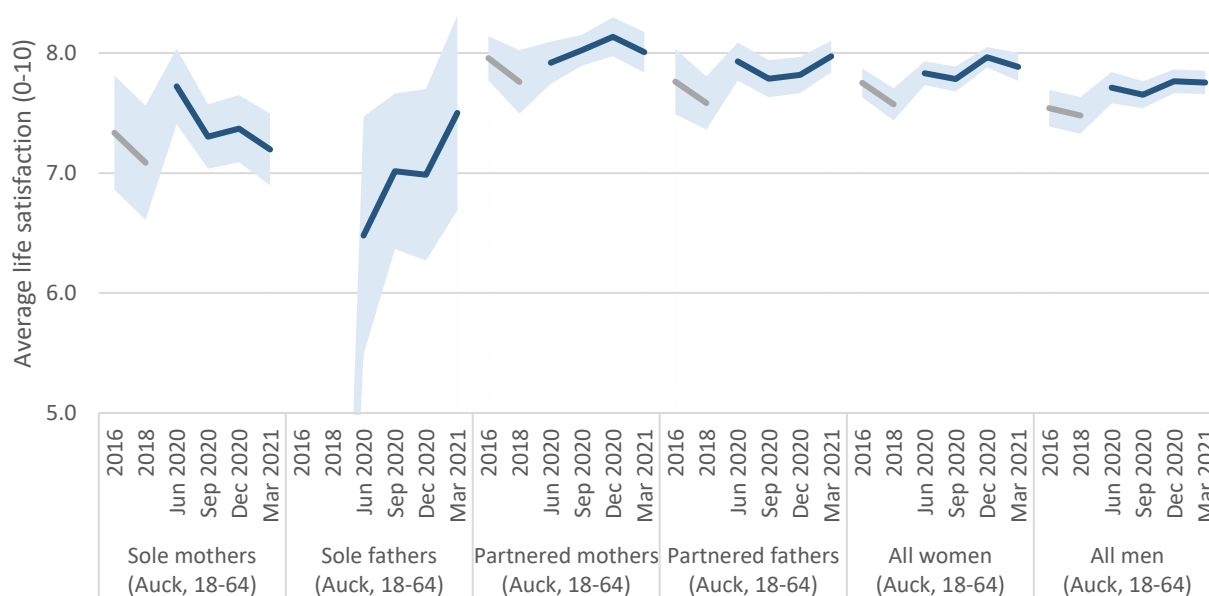
Sources: UK Office for National Statistics (2022); Australian Bureau of Statistics (2021).

Sole mothers in Auckland reported declining life satisfaction and family wellbeing between June 2020 and March 2021

Figure 5 shows reported life satisfaction for parents in Auckland specifically. Relative to Figure 3, there is much more uncertainty (wider 95% confidence intervals, due to smaller sample sizes, as shown by the light blue shaded areas in the graph). Nevertheless, there are some differences here. Sole mothers in Auckland show a statistically significant and relatively large decline in life satisfaction from the June 2020 quarter to the March 2021 quarter, in contrast to a more flat (non-significant) trend for partnered mothers in Auckland, and sole mothers nationally. The largest drop for sole mothers in Auckland was between the June and September quarters in 2020, which corresponded with the Auckland lockdown in mid-August 2020.

The survey also asked a question about how their family was doing.⁶ Sole mothers in Auckland reported declines in family wellbeing in the March 2021 quarter. Partnered mothers, and both partnered and sole fathers, did not experience a statistically significant change in either life satisfaction or family wellbeing over the first year of COVID-19. In the case of sole fathers, the small sample means we cannot rule out a meaningful increase in life satisfaction over this time.

Figure 5: Life satisfaction in Auckland, 2016 to March 2021, by parent status



Note: The pre-COVID trend for sole fathers in Auckland has been suppressed due to low numbers of individuals. Shaded areas indicate 95% confidence intervals. Pre-COVID trends (from the NZ General Social Survey) are shown in grey; the trend over the first year of COVID-19 (from the Household Labour Force Survey) is shown in blue.

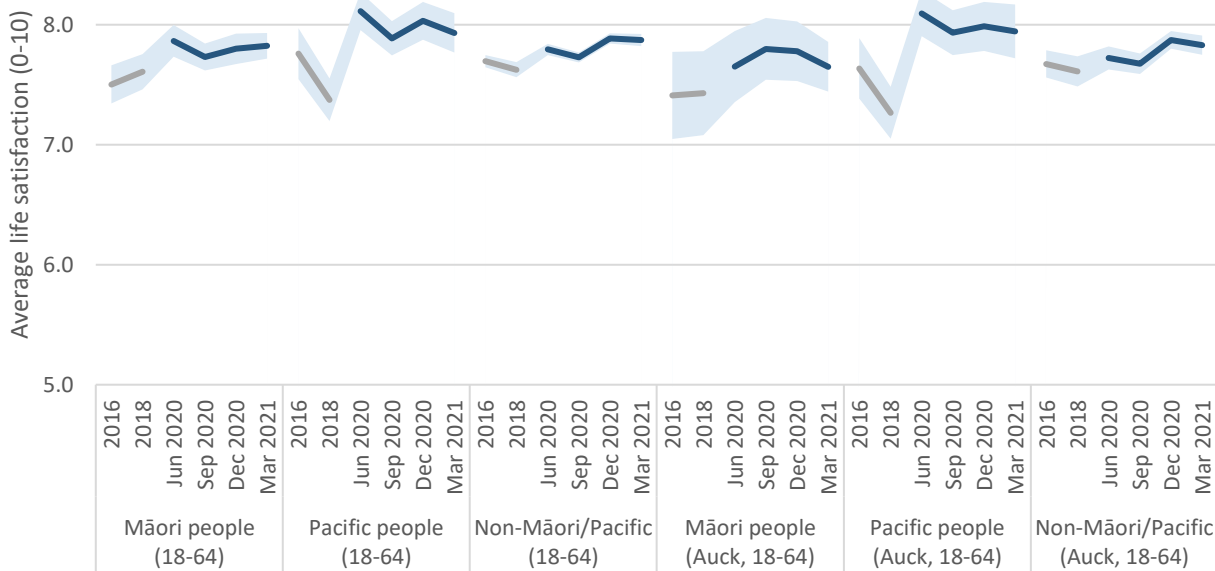
Pacific people and Māori reported higher life satisfaction and family wellbeing than in 2018

For both Māori and Pacific people (inside and outside of Auckland), reported life satisfaction had a statistically significant increase in the June 2020 quarter, compared to in 2018 (Figure 6). The increase between 2018 and 2020 was particularly large for Pacific people in Auckland, who

⁶ The definition of 'family', and relevant dimensions of wellbeing to consider when answering, were left up to the respondent.

reported an average of a 0.8 point increase (on the 0-10 life satisfaction scale), compared to 0.1 for non-Māori, non-Pacific people in Auckland.

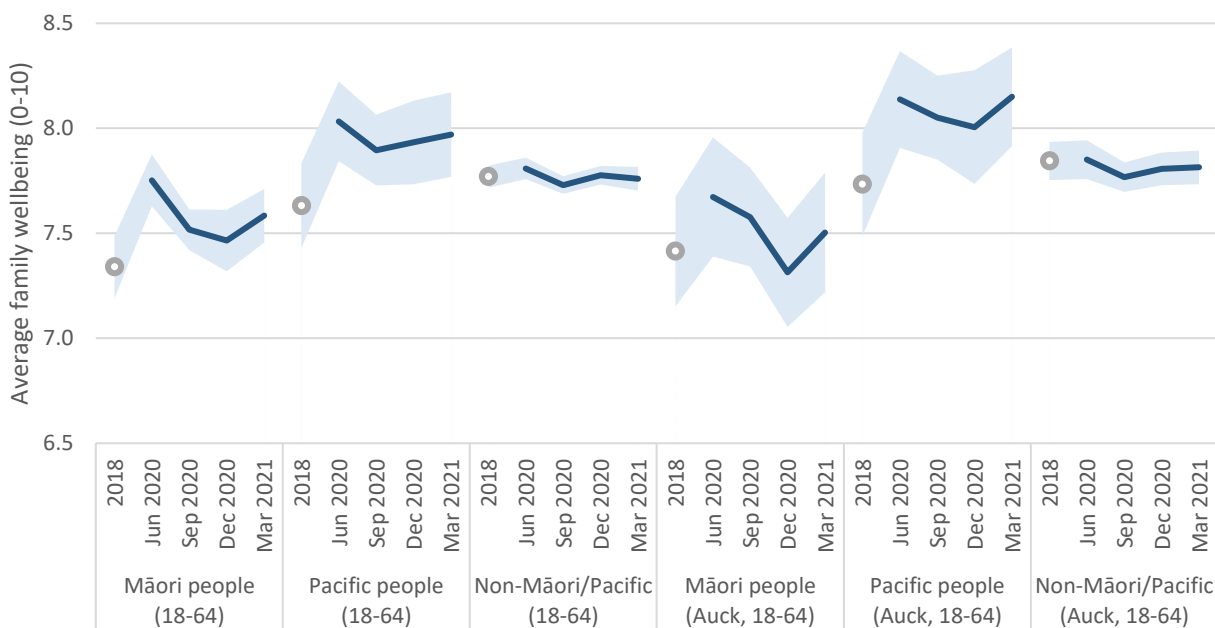
Figure 6: Life satisfaction, 2016 to March 2021, by Māori and Pacific



Note: Shaded areas indicate 95% confidence intervals. Pre-COVID trends (from the NZ General Social Survey) are shown in grey; the trend over the first year of COVID-19 (from the Household Labour Force Survey) is shown in blue.

Reported family wellbeing similarly rose between 2018 and June 2020 for both Māori and Pacific people, in contrast to no statistically significant difference for non-Māori, non-Pacific people (Figure 7). However, reported family wellbeing fell for Māori between the June and December quarters in 2020, and for Māori in Auckland, family wellbeing in the December 2020 quarter was back to 2018 levels.

Figure 7: Family wellbeing, 2018 to March 2021, by Māori and Pacific



Note: Shaded areas indicate 95% confidence intervals. Pre-COVID trends (from the NZ General Social Survey) are shown in grey; the trend over the first year of COVID-19 (from the Household Labour Force Survey) is shown in blue.

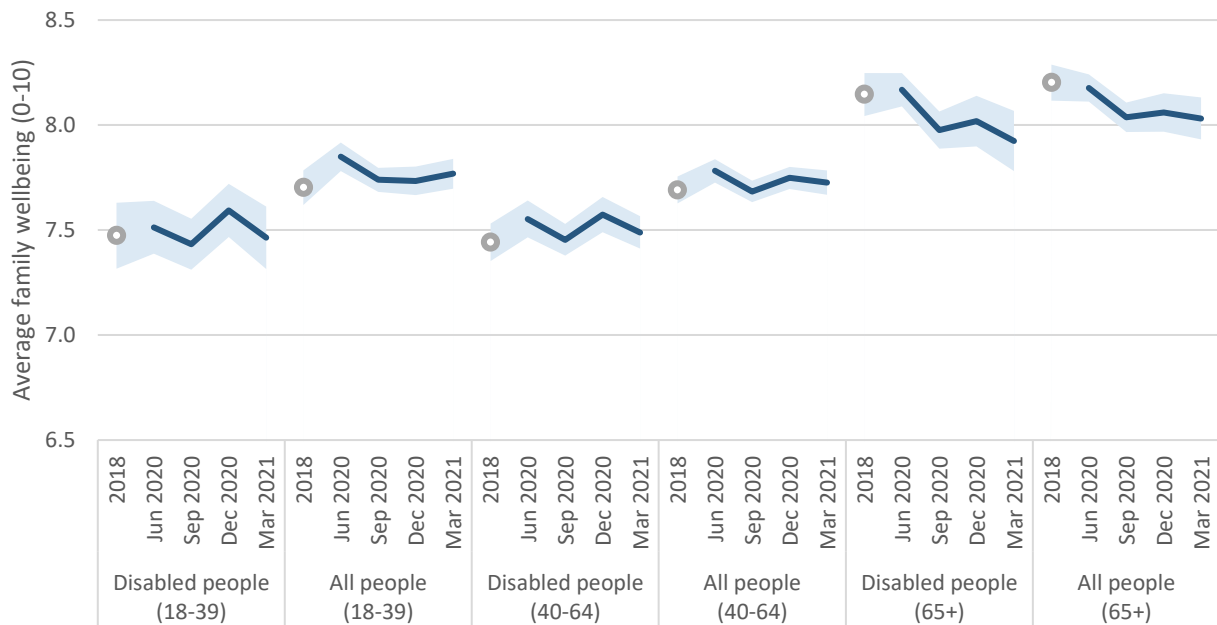
Younger disabled people reported increasing life satisfaction in late 2020, but not earlier in the year

In contrast to most other groups (including non-disabled younger people), disabled people aged between 18 and 39 did not report a statistically significant change in life satisfaction in June 2020 or September 2020, compared to in 2018. However, younger disabled people did later report a significant increase in life satisfaction in the December 2020 quarter. Given that the June and September quarters in 2020 were the most affected by lockdowns, the lack of an increase in life satisfaction for disabled people in these quarters might indicate that lockdowns have a particularly negative effect on the life satisfaction of younger disabled people.

Older people reported much lower family wellbeing

While people aged 65 and above reported significantly higher life satisfaction over 2020 and 2021 than in 2018, there was no significant difference in reported family wellbeing between 2018 and June 2020, for either disabled or for all older people. In the September 2020 quarter, family wellbeing fell for older people, and remained at this lower level (well below 2018 levels) up until the March 2021 quarter. In contrast, people younger than 65 (disabled as well as all people) did not report significantly lower family wellbeing during COVID-19, compared to 2018 (Figure 8).

Figure 8: Family wellbeing, 2018 to March 2021, by age and disability



Note: Family wellbeing was not asked in 2016. Shaded areas indicate 95% confidence intervals. Pre-COVID trends (from the NZ General Social Survey) are shown in grey; the trend over the first year of COVID-19 (from the Household Labour Force Survey) is shown in blue.

Economic wellbeing

Most groups were more likely to report having enough income in 2020 than 2018, but many still reported income was a major concern

Both the General Social Survey and Household Labour Force Survey asked respondents a question about whether the income in their household was enough to meet their needs. Of the 32 groups we examined, 21 reported a statistically significant increased rate in having enough income in June 2020 than in 2018. Nationally, the largest statistically significant increases in this measure over this time were for Pacific people (+17%), Māori (+12%), people aged between 18 and 39 (+11%), working-aged men (+8%) and sole mothers (+7%). Increases were generally larger in Auckland than in the rest of the country.

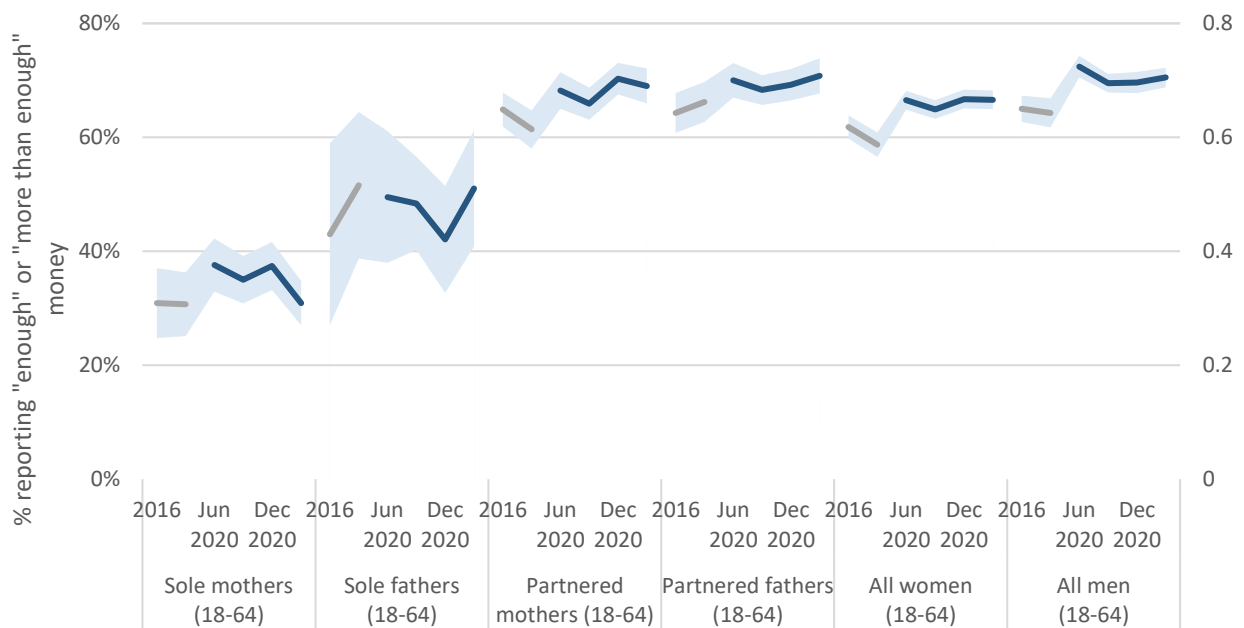
Although there was a relatively large increase for many of these groups, income still remained a major barrier to wellbeing for many groups during COVID-19. For example, 55% of Pacific people in New Zealand, and 62% of Pacific people in Auckland, still reported not having enough income in June 2020 (even after the significant change from 2018). For sole mothers, 62% reported not having enough money in June 2020. This accords with findings from a COVID-19 consumer impacts study in New Zealand, which found in February 2021, 69% of Pacific respondents had used more savings than they planned, and 57% had increased debt (GravitasOPG, 2021).

Income adequacy during the first year of COVID-19 could have been positively affected by economic supports announced in response to the pandemic (including increases in benefit rates and the temporary doubling of the Winter Energy Payment, as well as the COVID-19 Wage Subsidy scheme, and other initiatives to freeze rent, defer mortgage payments and increase availability of loans for small business; see RANZCP, 2022), or from increases in income support implemented before COVID-19, such as the Families Package introduced in 2018, which increased the Accommodation Supplement (from April 2018), increased Working for Families tax credits, and introduced a new 'Best Start' tax credit and Winter Energy Payment (MSD, 2022a). This measure could have also been impacted by changes in expenditures, particularly during lockdowns (such as reduced childcare or transportation expenses). However, our statistical model (discussed in the third section of this report) did not find a statistically significant relationship between being in lockdown and income adequacy.

Sole mothers reported more income concerns in March 2021 than in June 2020

Despite the initial increase in the June 2020 quarter, rates of reported income adequacy then dropped for sole mothers over the subsequent year, falling back to 2018 levels in the March quarter (Figure 9). Sole mothers in Auckland did not report a statistically significant boost to income adequacy early in the pandemic, and by March 2021, were reporting more money concerns than baseline 2018 levels. Benefit payments for sole mothers were subsequently increased in April 2021, outside of the period for which we have data (Graham & Arnesen, 2022). Income concerns may have also worsened for Māori in Auckland over this time: there was a 11% decrease in the proportion of Māori reporting having enough or more than enough money from June 2020 to March 2021. However, due to the lower sample size in Auckland, this difference was not statistically significant.

Figure 9: Having enough money, 2016 to March 2021, by parent status



Note: Shaded areas indicate 95% confidence intervals. Pre-COVID trends (from the NZ General Social Survey) are shown in grey; the trend over the first year of COVID-19 (from the Household Labour Force Survey) is shown in blue.

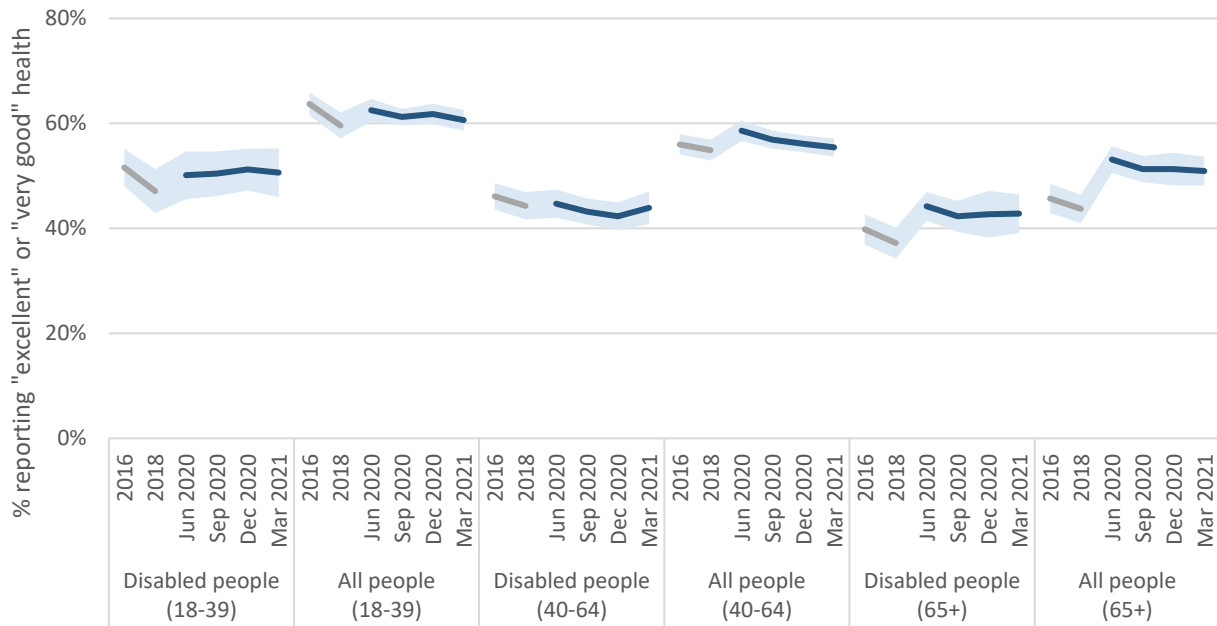
Physical and mental health

Most groups reported increases in health that faded out over the pandemic

Close to a third of the groups we examined (9 of 32 groups) were significantly more likely to report being in very good or excellent health when interviewed during or immediately after the initial national lockdown in the June 2020 quarter, compared to 2018. This might be due to protective effects of social isolation preventing the spread of both COVID-19 and other communicable diseases, as well as an effect where some respondents might have been comparing public health conditions in New Zealand to other countries more affected by COVID-19 at the time. Notable exceptions to this initial boost in health were among disabled people younger than 65 and sole mothers.

However, most groups that reported an initial boost in health between 2018 and June 2020 subsequently reported decreases in health over the next three quarters, so that by March 2021, most people were roughly as likely to be in very good or excellent health as they were in 2018. The exception to this is people aged 65 and older, who continued to be more likely to report being in good health a year after the initial lockdown (Figure 10). One reason for this could be additional caution (through reduced public activity or social interaction) exercised by older people in response to being much more susceptible to COVID-19. This could also be why older people also reported particularly large decreases in family wellbeing and increases in loneliness over the first year of the pandemic.

Figure 10: Being in very good or excellent health, 2016 to March 2021, by age and disability

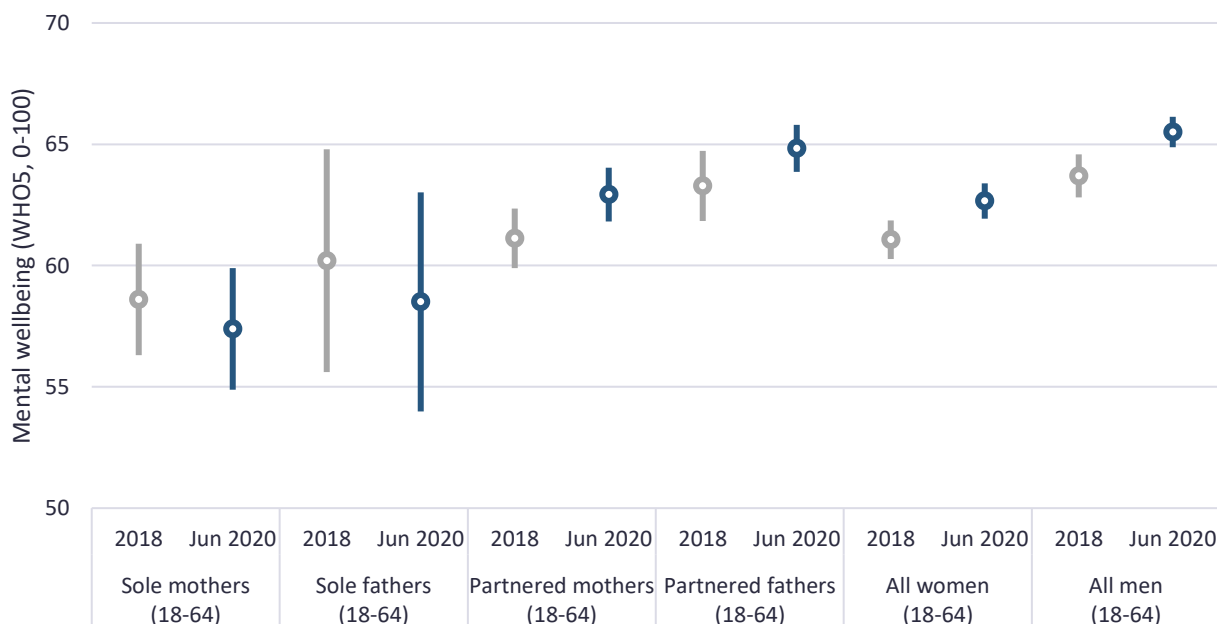


Note: Shaded areas indicate 95% confidence intervals. Pre-COVID trends (from the NZ General Social Survey) are shown in grey; the trend over the first year of COVID-19 (from the Household Labour Force Survey) is shown in blue.

Mental wellbeing improved for many groups, but not for sole parents or disabled people

Both the 2018 General Social Survey and the June 2020 quarter of the Household Labour Force Survey contained a measure of mental wellbeing, the WHO-5. Using this measure, mental wellbeing at the end of the first national lockdown in 2020 was higher than in 2018 across most groups we examined. However, there were several exceptions to this increase: sole parents (mothers and fathers, see Figure 11); disabled people aged 18-39, and disabled people (of any age) in Auckland. For these groups, there was no significant difference.

Figure 11: Mental wellbeing, 2018 to June 2020, by parent status



Note: Vertical lines indicate 95% confidence intervals. This data has only been collected in 2018 and June 2020, so wider trends are not available. Pre-COVID values (from the NZ General Social Survey) are shown in grey; data from the first year of COVID-19 (from the Household Labour Force Survey) is shown in blue.

In recent analysis by the Treasury (Crichton & Nguyen, forthcoming, as cited in Hughes, 2022), the strongest single predictor of life satisfaction was mental wellbeing. The trends we identified during COVID-19 are generally consistent with the findings of that Treasury study – most groups we examined reported a statistically significant increase in both life satisfaction and mental wellbeing between 2018 and June 2020; and younger disabled people reported similar levels of life satisfaction and mental wellbeing in both time periods. The exception to this was sole parents, who reported a statistically significant increase in life satisfaction in June 2020 *despite* reporting no difference in mental wellbeing. This might indicate that, for sole parents, life satisfaction was more likely to be boosted by aspects such as improved economic wellbeing.

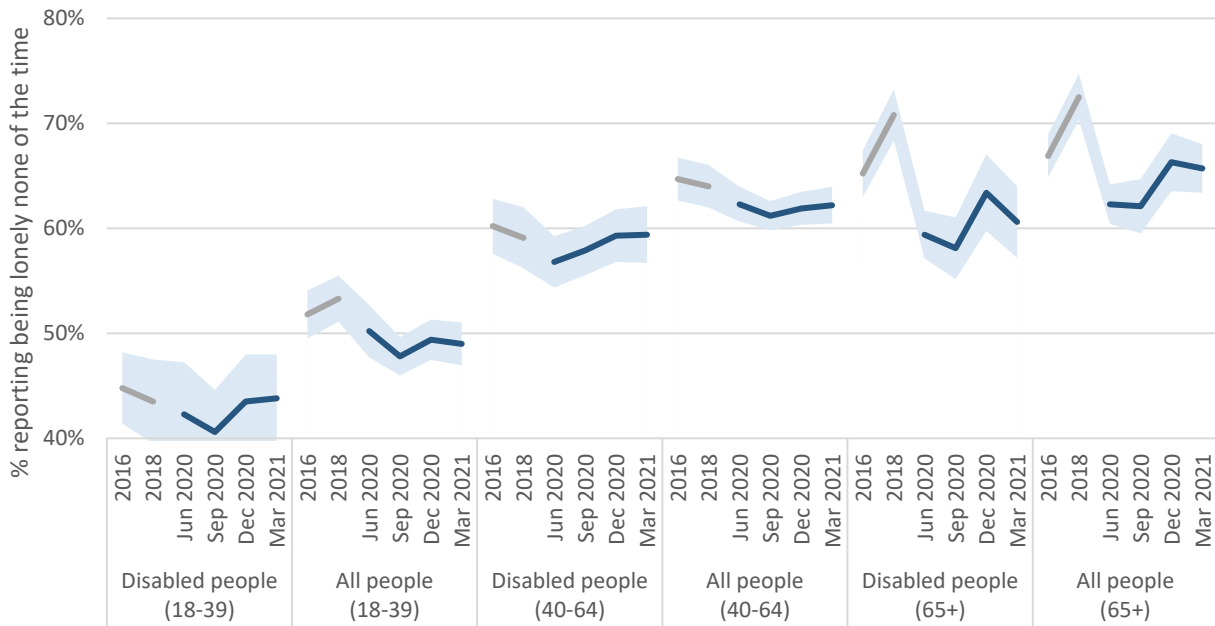
Loneliness

Loneliness particularly increased among men, older people, and Pacific people

Many groups were much more likely to report feeling lonely at least some of the time during the first year of COVID-19, compared to in 2016 or 2018. There was a strong gender difference in loneliness, with 5% more men reporting feeling lonely in the June 2020 quarter (a statistically significant change from 2018), compared to only 0.4% more women (not statistically significant). People over 65, whether disabled or non-disabled, similarly reported much more loneliness in June 2020, as did non-disabled people under 40 (Figure 12). These groups might be more likely to be living by themselves, and so be more affected in terms of social interaction during a lockdown.

It is important here to put these changes in the context of existing differences between age groups. While people 65 and older had the largest *increase* in loneliness of any age group between 2018 and June 2020 (an increase of 9% reporting being lonely at least some of the time), people aged between 18 and 39 were much more likely to report being lonely in any time period (a difference of 20% between 18-39 and 65+ in 2018, or a difference of 12% between the groups in June 2020). That is, while the potential effect of COVID-19 may be larger for older than younger people, it was still true during the first year of COVID-19 that loneliness was more concentrated in younger people.

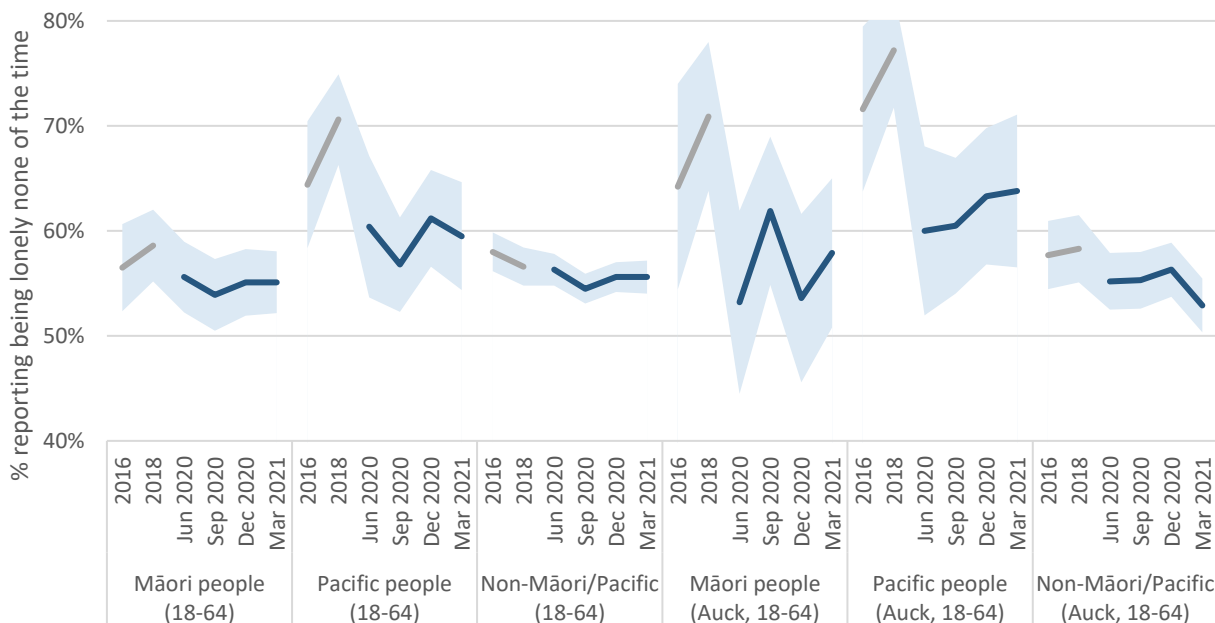
Figure 12: Never being lonely, 2016 to March 2021, by age and disability



Note: Shaded areas indicate 95% confidence intervals. Pre-COVID trends (from the NZ General Social Survey) are shown in grey; the trend over the first year of COVID-19 (from the Household Labour Force Survey) is shown in blue.

The groups with the largest increases in loneliness, however, were Pacific people (inside and outside of Auckland), and Māori in Auckland (Figure 13). In 2018, these groups reported the lowest levels of loneliness of any group we examined, but during the first year of COVID-19, reported levels of loneliness substantially increased.

Figure 13: Never being lonely, 2016 to March 2021, by Māori and Pacific



Note: Shaded areas indicate 95% confidence intervals. Pre-COVID trends (from the NZ General Social Survey) are shown in grey; the trend over the first year of COVID-19 (from the Household Labour Force Survey) is shown in blue.

Most parents did not report more loneliness during the pandemic

Sole parents (inside or outside Auckland), partnered parents outside of Auckland, and partnered mothers in Auckland were all not significantly more likely to report feeling lonely in either June 2020 or March 2021, compared to in 2018. Partnered fathers in Auckland were significantly more likely to report feeling lonely in the June 2020 quarter, but by March 2021, this had moved back to 2018 levels.

Social cohesion

Most measures of trust had a short-term boost in early 2020, then fell back to 2018 levels

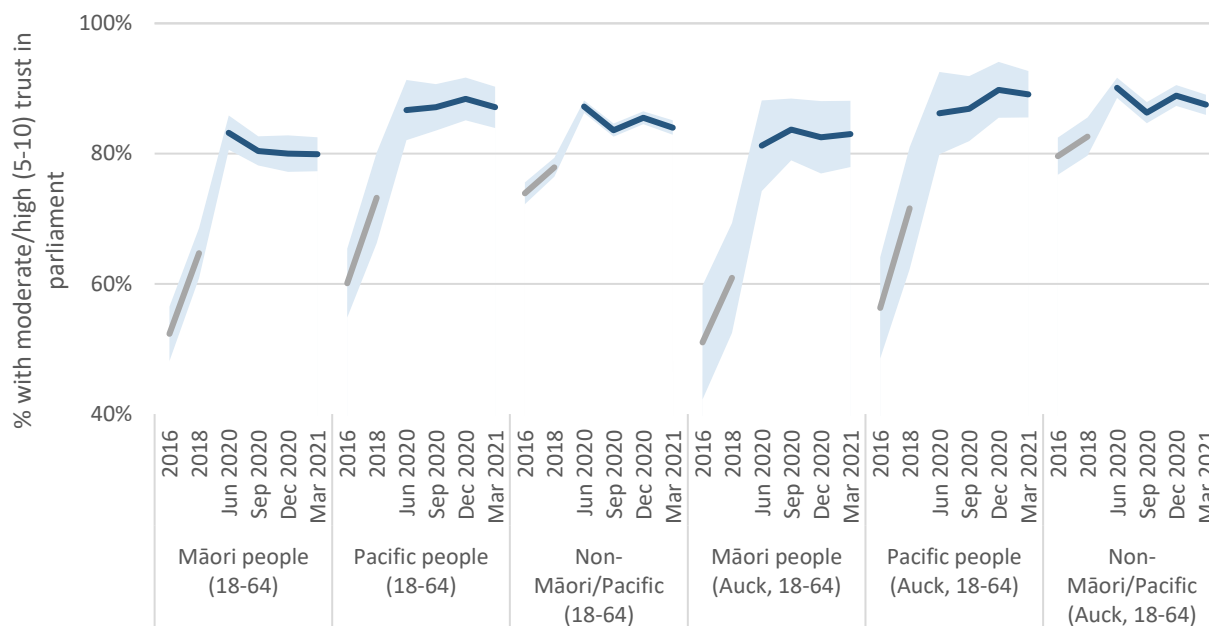
Across the 32 groups we examined, a majority of the groups reported a statistically significant increase in June 2020 compared to 2018 across trust in the health system, media, police, and Parliament. Most groups in our national sample also reported statistically significant increases in trust in other people.⁷ This is potentially evidence for a positive effect for social cohesion early in the pandemic (the ‘team of five million’). However, the predominant trend across 2020, across most measures of trust, and most groups we examined, was a decline in trust from the levels in the June 2020 quarter. This means that by March 2021, reported levels of trust had moved back to approximate 2018 levels (often slightly higher reported trust in March 2021 than 2018, but differences were generally not statistically significant).

Trust in Parliament and the health system remained higher as at early 2021

Two aspects of trust that did not appear to completely fade out during 2020 were trust in Parliament and the health system. All groups had a statistically significant increase in the proportion reporting moderate or high trust (scored at 5+ on a 0-10 scale) in Parliament in June 2020 compared to 2018. This increase was larger than the change in any other dimension of trust asked about in these surveys. The largest increases were among Māori (19% increase between 2018 and June 2020 quarter), sole mothers (+17%), Pacific people (+14%), and sole fathers (+13%). Although this did subsequently decrease between June 2020 and March 2021 for most groups, every group continued to report higher levels of trust in Parliament in March 2021 than they did in 2018 (Figure 14). Increases in trust in the health system were generally smaller than increases for Parliament, but still relatively large and generally statistically significant from 2018 to June 2020. Trust in the health system was still higher than 2018 levels for most groups (other than sole mothers) in March 2021.

⁷ Most groups in Auckland reported small to moderate increases in trust in other people, but these tended to not be statistically significant, potentially due to the smaller sample size in Auckland.

Figure 14: Moderate/high trust in Parliament, 2016 to March 2021, by Māori and Pacific



Note: Shaded areas indicate 95% confidence intervals. Pre-COVID trends (from the NZ General Social Survey) are shown in grey; the trend over the first year of COVID-19 (from the Household Labour Force Survey) is shown in blue.

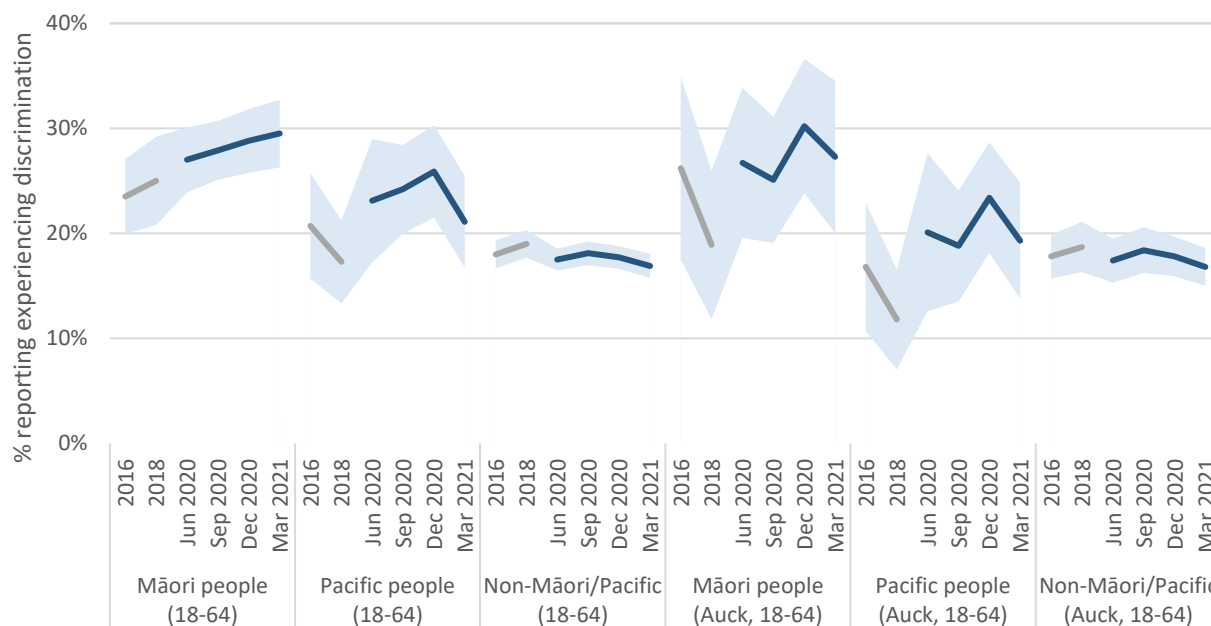
These levels of increased trust in Parliament and the health system could be attributed to a combination of increased public visibility of politicians and health officials (through channels such as daily briefings directly to the public), as well as public satisfaction with New Zealand’s public health and policy response to COVID-19 in 2020. Importantly, our sample of data ends about 12 months before the high-profile protests of Parliament in February 2022, meaning we cannot observe how trust in Parliament changed in the leadup to and following that event.

Pacific, Māori, disabled, and older people reported increases in discrimination during the pandemic

Respondents were asked whether they had experienced some form of discrimination in the past 12 months (due to any group they belonged to or seemed to belong to). There were several groups who reported increases in reported discrimination early in the pandemic in June 2020, compared to 2018. At the national level, the largest increases were among Pacific people (+5.8%); disabled people aged 65+ (+4.3%); all people aged 65+ (+4.0%); and disabled people aged 18-39 (+3.3%).

These increases were typically larger for people in Auckland. There were increases in reported discrimination for disabled people aged 18-39 (+10.3%); Pacific people (+8.3%); Māori (+7.8%); and people aged 65+ (+5.2%) living in Auckland. For younger disabled people (but not for older people, Māori, or Pacific people), this increased exposure to discrimination appeared to fade out over the first year of COVID-19.

Figure 15: Experiences of discrimination, 2016 to June 2020, by Māori and Pacific

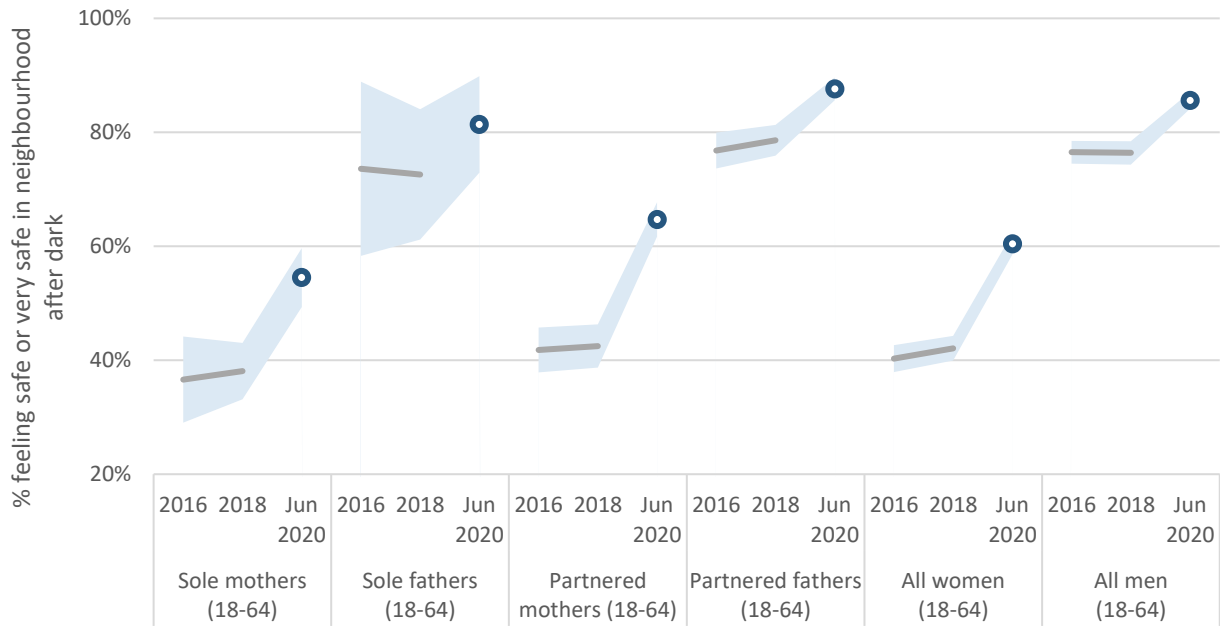


Note: In contrast to the rest of this report, this graph measures a negative outcome. Shaded areas indicate 95% confidence intervals. Pre-COVID trends (from the NZ General Social Survey) are shown in grey; the trend over the first year of COVID-19 (from the Household Labour Force Survey) is shown in blue.

All groups, but especially women, reported feeling safer in 2020

The June 2020 quarter survey (but not the surveys for subsequent quarters) also asked respondents about whether they feel safe walking in their neighbourhood after dark. All the groups we examined (except for sole fathers, and Māori and Pacific people in Auckland, likely due to small sample sizes) had a statistically significant increase in likelihood of reporting feeling safe in June 2020 compared to 2018 (see Figure 16 for differences by parent status). These differences were especially large for partnered mothers (+22% reporting feeling safe in June 2020); all women (+18%); sole mothers (+16%); and people aged 65+ (+16%). These increases were larger for these groups in Auckland. Some of this difference could be related to differences in neighbourhood activity during lockdown, however almost all interviews in the June 2020 quarter were undertaken after the national lockdown ended.

Figure 16: Feeling safe after dark, 2016 to June 2020, by parent status



Note: This question was not asked between September 2020 and March 2021. Shaded areas indicate 95% confidence intervals. Pre-COVID trends (from the NZ General Social Survey) are shown in grey; the trend over the first year of COVID-19 (from the Household Labour Force Survey) is shown in blue.

Focus on wellbeing during and after lockdowns

The events most likely to have impacted on aspects of wellbeing over May 2020 to April 2021 are the Alert Level 3 lockdowns. These restricted the movement of people outside their homes from performing non-essential activities. For most people, this meant that during the lockdown periods, participation in employment and education was done remotely from home, or not at all (for a full description of restrictions, see New Zealand Government, 2022). There were four periods of lockdown over the period for which we have survey data:

- 23 March 2020 – 14 May 2020 (national). The survey data starts on 7 May 2020; we do not observe any outcomes for the period between 23 March and 6 May, which includes the entirety of Alert Level 4.
- 12 August 2020 – 30 August 2020 (Auckland only).
- 15 February 2021 – 17 February 2021 (Auckland only).
- 28 February 2021 – 6 March 2021 (Auckland only).

One way of estimating causal short-term impacts of lockdown on wellbeing is to examine people who were interviewed just before or just after lockdowns begin or end. If Stats NZ randomly chooses households to interview on any given day, then the people who happened to be interviewed on the day just before lockdown will be (on average) no different from the people interviewed the day just after lockdown starts, and differences in responses between these groups of people might tell us something about the impact of lockdown. However, because Stats NZ does not interview large numbers of people, the data tends to jump around from day to day. We have attempted to smooth out these jumps by presenting 3-day moving averages when presenting graph data.

How Aucklanders' wellbeing changed in the August 2020 lockdown

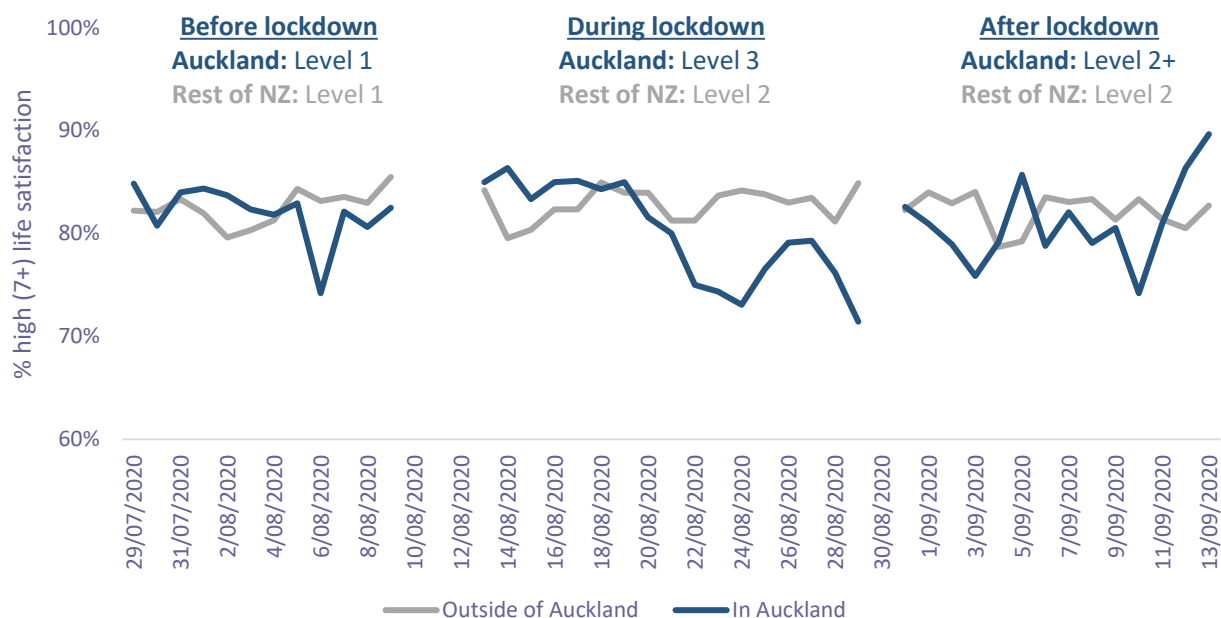
One useful case study for the short-term effects of lockdown is the lockdown occurring in August 2020. This included a 20-day period of Alert Level 3 in Auckland (but not the rest of the country), which was preceded and followed by several months of far lower restrictions (Alert Levels 1 and 2). This allows us to track both Auckland and non-Auckland regions in terms of trends in reported wellbeing before, during and after the lockdown period.

It took a week and a half for the impact of lockdown on life satisfaction to be felt

A comparison of the percentage of respondents reporting high life satisfaction in these periods is shown in Figure 17. Before the announcement of new COVID-19 cases in the community, trends in life satisfaction appear roughly equivalent between Auckland and non-Auckland region. In the first week of Alert Level 3 in Auckland, this trend continues – with Auckland respondents possibly being

even more likely to report high life satisfaction than non-Auckland respondents. However, by 21 August (nine days after the beginning of lockdown), life satisfaction substantially dips in Auckland (but not in other regions). Life satisfaction in Auckland then appears to return to levels more comparable to those reported by non-Aucklanders shortly after the end of the lockdown and move to Alert Level 2 in Auckland.

Figure 17: Reports of high life satisfaction around August 2020 lockdown

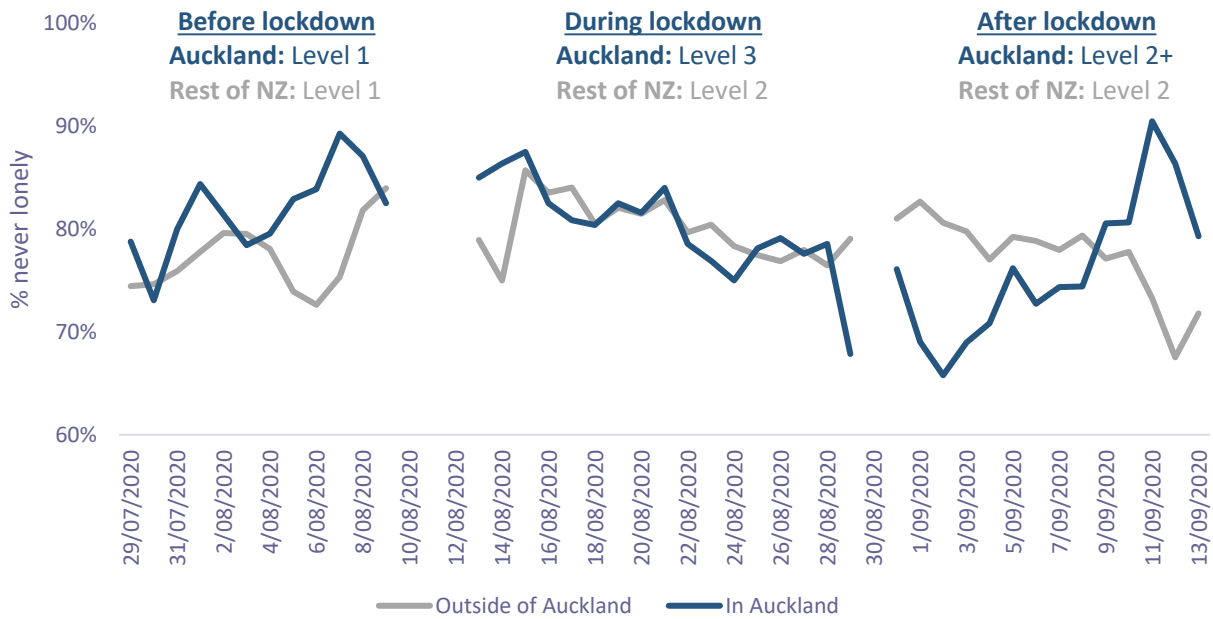


Note: Each data point in this graph is a moving average made up of the people interviewed on the relevant date, the people interviewed the day prior, and the people interviewed the day after.

The biggest impact on loneliness happened at the tail end of the lockdown

An even more delayed apparent effect of the August 2020 Auckland lockdown occurred for loneliness. There was a strongly negative trend of reported loneliness for people in Auckland during lockdown (moving from 85% of people reporting never being lonely on the first few days of the lockdown to 68% over the last few days), but this did not consistently dip below the non-Auckland group until after the lockdown ended, and then persisted for a week after this point (Figure 18). This might be reflective of the negative effects of social isolation taking some time to manifest, as well as the cautious behaviours of people even after lockdown ends and the region moved to Alert Level 2. However, because the small number of people being interviewed day-to-day causes a lot of variation in the trend, some of these differences could be statistical noise.

Figure 18: Never being lonely around August 2020 lockdown

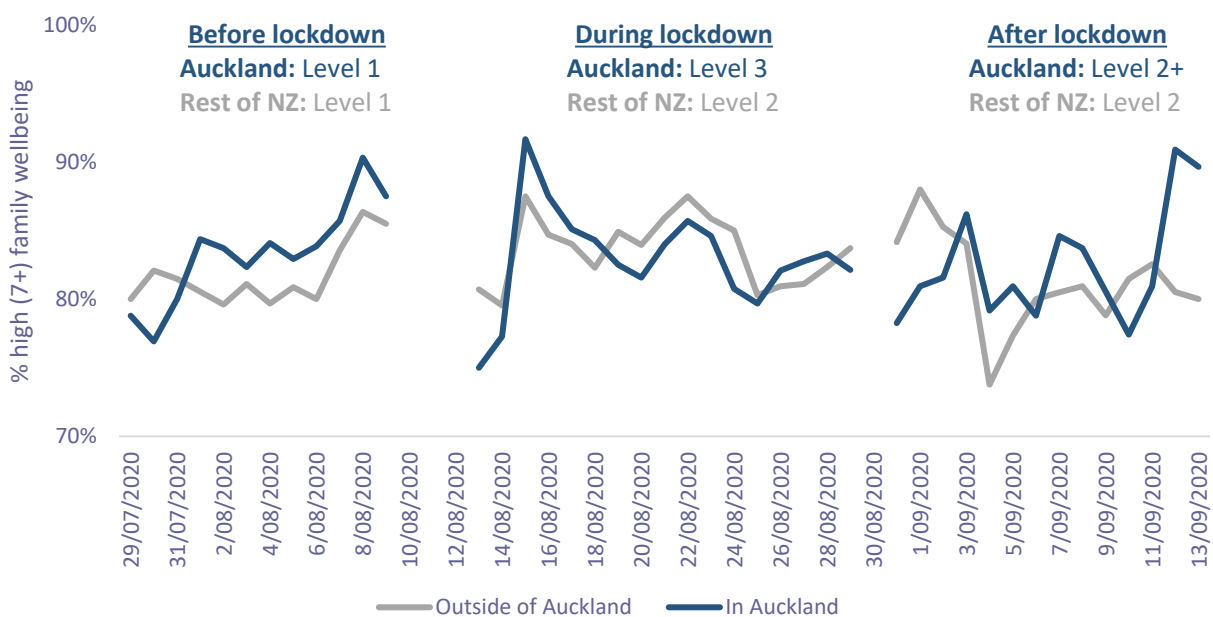


Note: Each data point in this graph is a moving average made up of the people interviewed on the relevant date, the people interviewed the day prior, and the people interviewed the day after.

There were not clear differences attributable to lockdown in most outcomes

In most measures we looked at, such as family wellbeing (Figure 19), there are not clear trends for Auckland during and immediately post-lockdown. Any differences that exist appear to be relatively small and less noticeable or meaningful than with life satisfaction or loneliness, reported above.

Figure 19: Reports of high family wellbeing around August 2020 lockdown



Note: Each data point in this graph is a moving average made up of the people interviewed on the relevant date, the people interviewed the day prior, and the people interviewed the day after.

How the wellbeing of different groups changed when lockdown ended

The above analysis was looking at all Aucklanders as a group. Lockdowns (and the end of lockdowns) might have had a bigger impact on some parts of the population compared to others. The sample size of the Household Labour Force Survey is not large enough to break down the group of people interviewed in the days surrounding the beginning or ending of any one lockdown. However, we combined the responses of people interviewed a week before and a week after the end of the first two lockdowns (in May 2020 for all people in New Zealand, and August 2020 for people in Auckland), and conducted statistical tests of changes for a week before and a week after the end of lockdown.⁸

The results of differences in life satisfaction, loneliness, and trust in Parliament for several key groups are shown in Table 2. Many of these differences were not statistically significant, even if the estimated change was relatively large. This is mostly due to the small size of some of these groups. For example, average life satisfaction scores were 0.46 points lower during lockdown for people receiving benefit and 0.36 points lower during lockdown for Māori, but because these are based on relatively few respondents, we can't say with a high level of confidence that these differences are not due to chance. This means that, especially for smaller groups, the absence of a significant difference is not necessarily an indication that lockdown did not have a meaningful effect.⁹

Table 2: Changes in selected wellbeing indicators during lockdown, by group

	Life satisfaction (0-10 score)	% lonely none of the time	Trust in Parliament (0-10 score)
Sole mothers	-0.72 **	-6%	+0.31
Partnered mothers	-0.10	-2%	+0.40 *
All women	-0.17 *	-1%	+0.22 *
Partnered fathers	-0.04	-6%	-0.18
All men	-0.13	-8% ***	-0.17
Employed people	-0.17 **	-5% **	-0.03
People earning <49k	-0.17 *	-4%	+0.06
People receiving benefit	-0.46	-3%	+0.32
People aged 65+	-0.08	-3%	-0.34 **
People in Auckland	-0.22 **	-2%	+0.12
Māori	-0.36	+4%	+0.22
Pacific people	-0.82 **	-5%	-0.17
Asian people	-0.19	-7%	+0.10
Pākehā people	-0.10	-4% *	-0.02

Note: Results are presented as implied effects due to lockdown – that is, a negative value represents a lower score in the week before lockdown ended, compared to the week after lockdown ends. *, **, *** indicate statistical significance at 10%, 5% and 1% levels, respectively.

⁸ We also repeated the same analysis looking at changes in the two weeks either side of lockdown – the results were broadly similar.

⁹ We also conducted similar statistical tests on the other outcomes reported in Tables A1-A3, but do not report them here because almost none of the differences are statistically significant.

Life satisfaction of Pacific people and sole mothers was substantially lower during lockdowns

Of the differences in life satisfaction a week before and after lockdown ends, the largest changes in life satisfaction are for Pacific people (reporting scores that are 0.8 points higher on a 0-10 scale after lockdown ends) and for sole mothers (0.7 points higher). In contrast, partnered mothers and fathers, Pākehā people, and people aged 65 or older had much smaller differences after lockdown ended, which were not statistically significant. Both Pacific people and sole mothers also reported larger increases in family wellbeing in the week after lockdown ended (about 0.5 points higher on a 0-10 scale, although only the difference for sole mothers was statistically significant).

There were gender differences in changes in loneliness associated with lockdown

Men reported a much larger change in loneliness when lockdown ended than women did (except for sole mothers), with men being eight percentage points more likely to report being lonely at least some of the time in the week before lockdown ended. Partnered fathers also reported greater changes in loneliness (although this difference was not statistically significant), suggesting that the presence of others in the household (adult partners and children) during lockdown did not avoid negative effects on loneliness. Employed people reported more loneliness, also suggesting that one major reason for this is reduced opportunity to socialise in a work context.

There is some evidence that lockdown affected trust in Parliament in different directions

While the differences around life satisfaction and loneliness (whether statistically significant or not) were almost universally negative, there appear to be much more mixed effects associated with lockdown on trust in Parliament, depending on the group examined. Focusing only on the statistically significant differences, lockdown was associated with higher trust in Parliament scores for partnered mothers and all women, but lower trust scores for people aged 65 or older.

What were the drivers of wellbeing during the first year of COVID-19?

Wellbeing surveys are typically conducted on different people each time they are run. Since the samples are selected to be representative of the population, this lets us compare how the wellbeing of groups are changing over time, such as between 2016, 2018 and 2020 as in the first section of this report. However, the Household Labour Force Survey returned to the same households every three months, from May 2020 to April 2021.¹⁰ In many cases, the same individuals within these households responded to the survey multiple times over this period. This gives us the relatively unique opportunity to see how the wellbeing of *individuals*, rather than groups, changed over the first year of COVID-19.

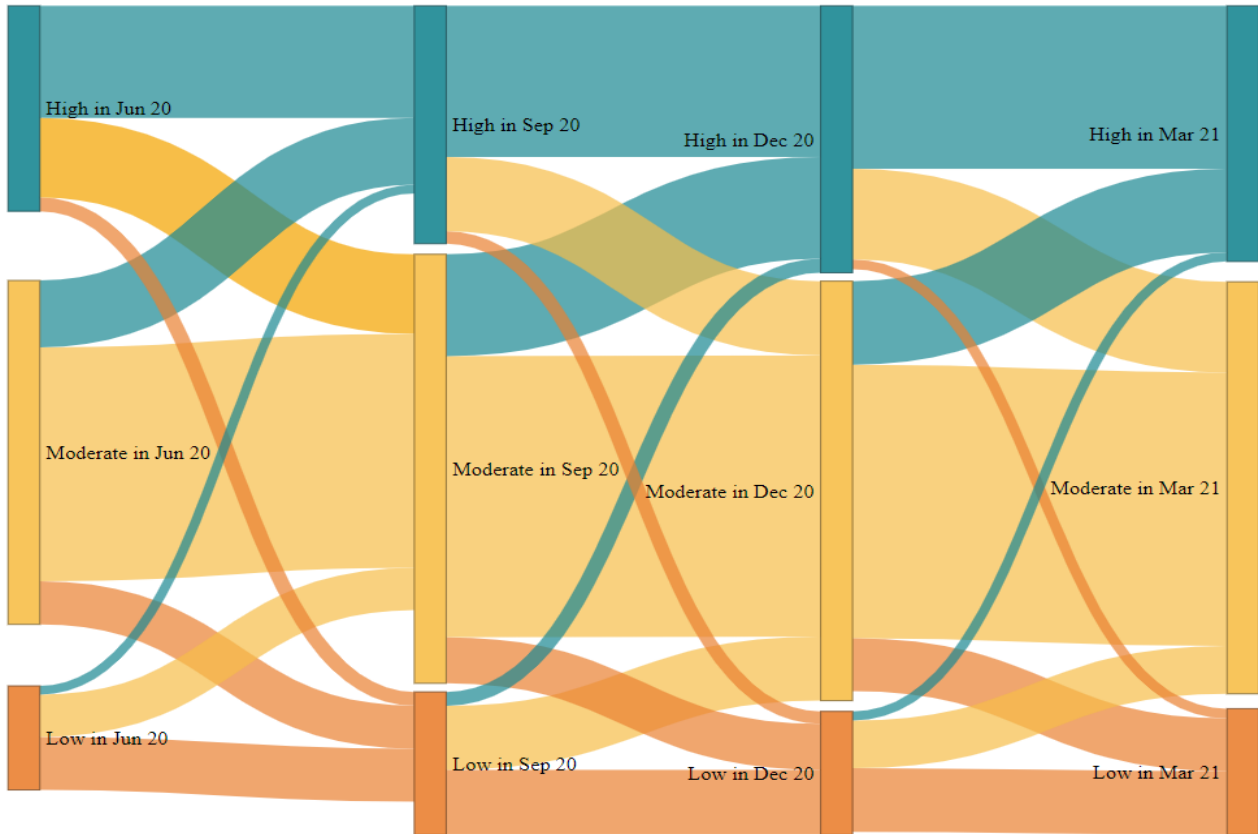
Many people substantially changed in their reported wellbeing over 2020-21

Figure 20 and Figure 21 show how all New Zealanders and Pacific people, respectively, changed in how they reported life satisfaction over the four quarters of the first year of COVID-19. We have grouped people into whether they reported high (scores of 9 or 10, green colour), moderate (scores of 7 or 8, yellow colour) or low (scores of 0 to 6, orange colour) life satisfaction, in each of the four surveys over 2020-21. The curved coloured flows represent people who changed in how they reported their life satisfaction between one quarterly survey and the next.

Both groups did not report statistically significant differences in average life satisfaction scores over this period. However, the complex patterns in Figure 20-Figure 21 (with many coloured flows crossing one another) show that these average life satisfaction scores hide a lot of ‘churn’, where between any two three-month periods, many respondents are reporting substantially improved life satisfaction, while others are reporting substantially declining life satisfaction. Figure 21 also shows larger orange flows along the bottom, representing Pacific people increasingly reporting low life satisfaction in late 2020 and early 2021. This potentially points to a differential impact within the Pacific community over the first year of COVID-19. However, the difference in the proportion of Pacific people reporting low life satisfaction over this period was not statistically significant, so this change should be interpreted with caution.

¹⁰ This sampling approach of selecting respondents based on address has the limitation that if a respondent moves away from the selected household, they will no longer be in the sample. This contrasts with many other longitudinal surveys, which attempt to follow up the same individuals regardless of where they are living. The approach used in the Household Labour Force Survey means that, if people who are experiencing particularly low wellbeing are more likely to have moved address over 2020 and 2021, then these people will not be captured in our data, and our results will not be fully representative. However, we also note that attrition is a common problem that can affect the representativeness of all longitudinal studies, including ones that attempt to track respondents across different households (Satherley et al., 2015).

Figure 20: Changes in life satisfaction over first year of COVID-19, all people aged 18-64



Note: The size of the four sets of vertical bars on this graph are proportional to the number of people reporting high (scores of 9-10), moderate (scores of 7-8) or low (scores of 0-6) life satisfaction in each wave of the Household Labour Force Survey. The size of the flows in between these bars indicates the number of people switching from, for example, high life satisfaction in June 2020 to moderate life satisfaction in September 2020. Fewer people answered the life satisfaction question in the June 2020 quarter, which is why many of those bars are smaller.

Figure 21: Changes in life satisfaction over first year of COVID-19, Pacific people aged 18-64



Statistically modelling changes in wellbeing over the first year of COVID-19

The repeated nature of the survey gives us an opportunity to investigate potential drivers in individuals' life satisfaction over this time. We use a statistical technique (panel linear regression model with individual fixed effects) that essentially isolates only the instances where individuals change in the life satisfaction score they report from one quarter to another, and then identifies what else changed in those individuals' lives over the same time. Since this is looking at differences within the same people over time, rather than looking at differences between people, it is less likely to be biased by unmeasured differences that drive life satisfaction, like personality or outlook on life.¹¹

We built statistical models that were based on previous analysis by Stats NZ (2022), which indicated that some of the most important conditions for reporting life satisfaction were: being in excellent or very good health; having enough money to meet everyday needs; not feeling lonely; and having no major problems (cold, damp or mould) with their home. To this list, we added some measures in similar domains, added a further domain of social cohesion, and added some COVID-19 specific factors: whether the respondent was in lockdown at the time of the survey, and whether they were interviewed at a time when they were likely to have been receiving the Winter Energy Payment.¹² This led to our selection of variables that were collected in all four waves of the Household Labour Force Survey in 2020-21.¹³

- **Economic:** Having enough income (more than enough/enough/just enough/not enough); material hardship (Dep17 score); labour force status (employed/unemployed/not in labour force); whether having multiple jobs.
- **Housing:** Having problems with damp or mould (major/minor/no problem); having problems warming home (major/minor/no problem).
- **Health:** Self-reported health (excellent/very good/good/fair/poor).
- **Loneliness:** How often lonely in last four weeks (none/a little/some/most/all of the time).
- **Social cohesion:** Whether experienced discrimination; how trusting of other people (0-10 score).
- **COVID-19 changes:** Whether in lockdown; whether likely receiving Winter Energy Payment.¹⁴

¹¹ Piper, 2022 investigated the use of other techniques for exploring drivers of life satisfaction over time, and comes to the conclusion that alternative methods result in similar findings to the technique we use here.

¹² The Winter Energy Payment is a regular payment made between May and September each year to assist people supported by either main benefits or NZ Super to meet energy costs over the winter months (MSD, 2022b). The Winter Energy Payment was first introduced in 2018. In 2020, the weekly rate was doubled, which represented an additional 10-12% of income for sole parents supported by benefit, over the relevant period (Sepuloni, 2020).

¹³ We note that other studies indicate strong relationships between life satisfaction and aspects such as mental health and perceived safety. However, we were unable to include these in our models examining changes over the first year of COVID-19, because they were asked only in the June 2020 quarter of the survey.

¹⁴ This indicator was based on whether the respondent received a main benefit over 2020-21, and whether the respondent was interviewed at a time when the Winter Energy Payment was active (between 1 May 2020 and 1 September 2020).

We constructed separate statistical models to establish the relationships between these variables and both life satisfaction and family wellbeing (both measured on 0-10 scales).¹⁵ We also constructed statistical models (logistic regression with individual fixed effects) predicting whether the individual reported having enough income, having problems with housing, being in good health, and not being lonely, to explore the interrelationships between some of these concepts. The results for the models predicting life satisfaction and family wellbeing are summarised in Table 3. The full results of all statistical models are shown in Tables A7-A8 in the appendix.

Table 3: Estimated drivers of subjective wellbeing during the first year of COVID-19

	Life satisfaction		Family wellbeing	
Economic				
Enough money (relative to more than enough)				
Enough	-0.070	***	-0.040	
Only just enough	-0.228	***	-0.194	***
Not enough	-0.415	***	-0.249	***
Employment status (relative to employed)				
Unemployed	-0.245	***	-0.085	
Not in labour force	-0.097	*	-0.027	
Have multiple jobs	-0.024		0.029	
Dep17 (+1 point on a 0-17 scale)	-0.045	***	-0.048	***
Health				
Self-rated health (relative to excellent)				
Very good	-0.094	***	-0.097	***
Good	-0.286	***	-0.222	***
Fair	-0.628	***	-0.362	***
Poor	-1.186	***	-0.497	***
Loneliness				
Feel lonely (relative to none of the time)				
A little of the time	-0.178	***	-0.135	***
Some of the time	-0.425	***	-0.259	***
Most of the time	-0.868	***	-0.398	***
All of the time	-0.965	***	-0.812	***
Housing				
Problems with damp/mould (relative to none)				
Minor problem	-0.072	**	-0.064	**
Major problem	-0.004		0.068	
Problems with cold (relative to none)				
Minor problem	-0.004		-0.064	*
Major problem	-0.041		-0.001	
Social cohesion				
Trust most people (+1 point on a 0-10 scale)	0.082	***	0.105	***
Experienced discrimination	-0.086	***	-0.070	**
COVID-19				
In lockdown	-0.139	**	-0.103	*
Received Winter Energy Payment	-0.063		0.149	***
Survey wave (vs Jun 2020)				
Sep 2020	-0.069	***	-0.123	***
Dec 2020	-0.005		-0.098	***
Mar 2021	-0.003		-0.132	***

Note: *, **, *** denote statistical significance at the 10%, 5% and 1% levels, respectively.

¹⁵ We also constructed a similar statistical model predicting a question relating to whether the survey respondent felt life was worthwhile, which is measured on the same 0-10 scale as life satisfaction and family wellbeing. The results are almost identical to our model for life satisfaction, and so are not reported here.

Life satisfaction was driven by changes in health, loneliness, and income

Of the factors we included, the ones with the largest impact on life satisfaction in the first year of COVID-19 are being in poor health (-1.2 points on the 0-10 life satisfaction scale); being lonely all of the time (-1.0 points); not having enough income (-0.4 points); and being unemployed (-0.2 points). As this period was an exceptional time in many ways, our data does not allow us to examine drivers of wellbeing in other contexts. However, we note that the factors identified in this model have also been shown to be important in other wellbeing research conducted before COVID-19 (Clark et al., 2017).

Adjusting for the above factors, having problems with housing was relatively less important to life satisfaction in the first year of COVID-19. This is potentially surprising given that many people would have been spending much more time in their home than in a typical year prior to COVID-19. Reporting an experience of discrimination had a negative effect on life satisfaction, but this was relatively small compared with some of the other factors in the model – approximately comparable to the effect of moving from “excellent” to “very good” health.

For family wellbeing, income was less important

Table 3 also reports results of a model that predicted changes in family wellbeing (on the same 0-10 scale¹⁶) over the first year of COVID-19. Relative to the life satisfaction results, the effects of changes in the economic domain are generally lower, where reduced income adequacy and unemployment is less of a strong driver. However, the estimated effect of the Dep17 score (a series of questions asking about whether the respondent has gone without various essential items due to a lack of money; see Stats NZ, 2019) is about the same in both models, potentially implying that material disadvantage matters equally to both individual and family wellbeing, but economic factors beyond this point have less perceived impact on other family members.

Large changes in health (from excellent to poor) also had a smaller estimated effect on family wellbeing than on individual life satisfaction, as did moderate changes in loneliness (from never lonely to lonely most of the time). However, the estimated effect of trust of other people on family wellbeing was slightly larger than the effect on individual life satisfaction.

Lockdowns had a short-term direct negative impact on life satisfaction, but less clear effects on the other drivers of wellbeing

The models we constructed also included an indicator for whether the person responding to the survey was currently in lockdown when the survey was conducted. This was included in all the models – predicting life satisfaction and family wellbeing, as well as predicting each of the main drivers of wellbeing (having enough income, having problems with housing, being in good health,

¹⁶ Technically, the life satisfaction and family wellbeing questions are different questions, meaning we should be cautious when directly comparing results from these models without converting to more generic effect sizes. However, the standard deviation was comparable between these two measures, meaning we can broadly consider them the same scale.

and not being lonely). Since these drivers are also included in the models predicting life satisfaction and family wellbeing, this allows us to distinguish two types of effect of lockdown:

- Indirect effects: Where lockdown affects aspects like whether people have enough income or whether people feel lonely, which in turn affects subjective wellbeing.
- Direct effects: Whether people report different levels of life satisfaction or family wellbeing when they are in lockdown, even after adjusting for factors such as whether they have enough income or whether they feel lonely.

The models indicate that lockdown is not significantly related to any of the drivers of wellbeing. That is, we could not detect statistically significant differences in responses relating to income adequacy, quality of housing, self-reported health, or loneliness for individuals in periods in which they were in lockdown compared to periods in which they were not. We did, however, detect a statistically significant direct effect on subjective wellbeing, with lockdown associated with -0.14 point lower reported life satisfaction and -0.10 point lower family wellbeing (both on 0-10 scales). There was also a small statistically significant effect of lockdown on reducing trust in other people.

Our estimated direct effect on life satisfaction is slightly lower but generally comparable to a similar recent study on the impact of lockdowns on New Zealanders' life satisfaction (Grimes, 2022) who reported lockdown effects of between -0.21 and -0.25. However, that study did find that lockdown was associated with statistically significant higher rates of loneliness. There are three possible reasons for the differences in results of these studies. The first is that Grimes (2022) did not include data from the March 2021 wave (as it was not available at the time of that analysis), which means that this work does not incorporate effects of the two Auckland lockdowns in February and March 2021 (or the ongoing effects on loneliness that might have occurred even outside of periods of lockdown). The second difference is that Grimes (2022) did not compare changes in individuals over time, but rather differences between individuals. While that study adjusted for observable differences in people (demographic characteristics, as well as many of the same drivers of wellbeing used in our models), there is the potential that there are other unobserved differences among people (particularly unobserved differences between people living in the Auckland region – who were more exposed to lockdowns – and people living in the rest of the country) could be driving some of the results in that study. The third difference is that, because our model relies on examining changes in individuals' responses over time, people who are only surveyed once over the COVID-19 period are not included in our model, but are included in the Grimes (2022) model.

These results, where lockdowns are associated with systematically lower reported life satisfaction, would appear to be at odds with results from the first section of this report, where life satisfaction for most groups was meaningfully higher in 2020 compared to 2018. It is important to be clear that our statistical model is designed to only pick up immediate effects of factors such as lockdown on wellbeing. One interpretation of these results is that lockdowns have different effects in the short and medium term. Lockdowns are a painful restriction of freedom, and come with meaningful short-term costs on wellbeing, as well as other measured outcomes, like economic activity. However, they were also highly effective at controlling the spread of COVID-19 in 2020 and 2021 (Scullion et al., 2022), and likely contributed to an environment early in the pandemic in which many New Zealanders viewed their situation as more favourable than many other countries around the world.

The Winter Energy Payment improved income adequacy during 2020

As with lockdowns, we examined whether the Winter Energy Payment (which was doubled in the 2020 winter months) was associated with improved wellbeing, either directly or via the drivers we examined. People who were supported by a main benefit were more likely to report having enough money to meet their needs (odds ratio of 1.3, statistically significant) during the time when the doubled Winter Energy Payment was active. This was also likely to indirectly improve their life satisfaction over this time, since reporting having enough money has a strong link with life satisfaction (as reported in Table 3 **Error! Reference source not found.**). Reporting having enough money to meet their needs was also associated with significantly more positive results relating to self-reported health, having no issues with warming their home, and trust in other people. Since these factors are in turn linked with higher life satisfaction, this implies the doubled Winter Energy Payment may have indirectly increased many dimensions of recipients' wellbeing through the channel of additional income.

There was not a statistically significant direct effect of the doubled Winter Energy Payment on life satisfaction (apart from the channel through income). However, we did also detect a direct effect associated with Winter Energy Payment on family wellbeing, of an additional 0.15 points on the 0-10 family wellbeing scale. This might indicate that Winter Energy Payments had a disproportionate benefit for the wider family, including children, over the first year of COVID-19. These results are broadly in line with some of the findings from a recent study estimating the impact of the Winter Energy Payment before the pandemic (Hyslop, Riggs & Maré, forthcoming).

Limitations

Like any piece of research, the analysis we report here is subject to limitations. These mean our conclusions are suitable for some purposes but not for others. Three key limitations are worth discussing in more detail, along with the ways we have minimised their effect. The first key limitation is the two-year gap between surveys give reason for being cautious in attributing the entirety of the measured difference between 2018 and 2020 to the effects of COVID-19. This limitation only affects the first of our three analyses. Recent experiences are known to be a meaningful component of people's self-reported wellbeing (Kahneman, 2000) and the global pandemic is by far the event most likely to have impacted wellbeing prior to the June 2020 survey. However, we cannot rule out that there were other changes over this period that may have affected responses. For example, the introduction of the Families Package in 2018, which increased incomes for many people supported by benefit (Stats NZ, 2021b reports an increase in average household incomes prior to the first lockdown in March 2020).

The second limitation is that there are some methodological differences between the General Social Survey in 2018, and the Household Labour Force Survey in 2020. This affects only the comparisons in the first of our three analyses. We have minimised differences by analysing only questions with identical wording between the surveys, and removing 15-17 year old respondents from the General Social Survey (as these ages were not interviewed in the Household Labour Force Survey). The main methodological change that is likely to have affected results is a switch from face-to-face interviewing (in 2018) to phone interviews in some waves of 2020-21. Wellbeing research shows that these differences in interview techniques can impact on the responses of some people: Pudney (2010) finds small differences in responses to life satisfaction questions for women interviewed over the phone (but not for men). It is possible that these methodological changes can account for the apparent increase in life satisfaction we observed for some groups between 2018 and 2020. However, the effects of these methodological differences are small enough that we can likely rule out meaningful decreases in subjective wellbeing early in the pandemic.

The third key limitation is that, where we restrict our study population to people who responded to more than one wave of the Household and Labour Force Survey, our sample will be less representative of the entire population. Certain individuals are less likely to respond to more than one wave – for a household survey we are most likely to underrepresent people who are more mobile (and change households between surveys). This might particularly affect people in need of public or emergency housing: according to the Ministry of Housing and Urban Development (2022) the number of people on the public housing register increased from 16,309 in March 2020 to 23,687 in March 2021. This limitation is a common challenge with any longitudinal research and only affects the third of our three analyses. We have minimised the potential impact of this by using the widest inclusion criteria available: Instead of requiring respondents to have answered all four waves, we included any respondent who answered two or more waves of the survey.

Overall, despite these limitations, we are confident that our analysis is robust and tells us something new about changes in wellbeing during the first half of New Zealand's response to COVID-19. Our results are broadly consistent with other published research (Treasury 2022a), but some differences are to be expected due to available data sources or chosen methodologies.

Conclusion

This report examined how the wellbeing of various groups in New Zealand responded in the immediate and medium term, over the first year of COVID-19. This involved three analyses:

1. A descriptive comparison of how various aspects of wellbeing changed over 2020 and early 2021, in the context of pre-existing trends;
2. Case studies looking at how wellbeing changed in the days surrounding the end of lockdowns; and
3. Statistical models identifying the factors that were associated in changes in reported wellbeing over the first 12 months of COVID-19.

We could consider two forces at work in New Zealand during 2020 and 2021 – the pandemic, having a negative effects, and the many ways that organisations, communities and people across New Zealand responded to care for people, having a positive effect. From this perspective, this report could be considered to summarise the results of a stress-test of how institutions in New Zealand society are positioned to support the wellbeing of its people in the event of a large, unexpected, potentially catastrophic shock.

Viewed through this lens, many of the results of these analyses are quite positive. We identified 16 different groups of people and 13 wellbeing outcomes that we thought might have been particularly likely to have been impacted by COVID-19. Across these groups and outcomes nationally, reported wellbeing outcomes were significantly higher in June 2020 than in 2018 59% of the time, and were significantly lower only 3% of the time. Some of the largest positive effects over this time were in reported life satisfaction, in whether people felt they had enough money to meet their needs, and in measures of trust and safety.

Why wellbeing appeared to hold up for many people in New Zealand in the immediate aftermath of a global pandemic is a matter for debate. This report presented evidence that life satisfaction clearly declined during the several weeks of lockdown over our sample period, and appeared to decline more for groups such as sole mothers and Pacific people. If lockdowns had negative impacts on wellbeing, why were most aspects of wellbeing higher in 2020 (during or immediately after lockdowns) than 2018? One possible explanation is New Zealanders felt that, though responses to COVID-19 had costs, they contributed to a country in 2020 that was relatively isolated from the virus, leading to positive comparisons with situations in other countries.

These responses might include actions from the government including economic supports such as the doubled Winter Energy Payment (which our evidence suggests improved recipients' ability to meet their living needs, and improved family wellbeing during the payment period). However, wellbeing for the groups we examined was also likely to have been benefitted by actions we cannot directly measure here, including the coordinated and effective responses of communities such as non-government organisations, whānau, hapū and iwi, ethnic communities, churches, neighbours, and other support networks, looking out for one another in times of crisis.

While many measures of wellbeing were higher during the first year of COVID-19 than during 2018, the pandemic has also served to draw attention to inequities, and in some cases deepen them. There are substantial and long-standing differences in many aspects of wellbeing between

groups along lines of ethnicity, gender identity, sexual identity, disability, age, and region (for one recent overview, see Hughes & Cardona, 2022). One concerning example is income adequacy, where sole parents reported more positive outcomes in June 2020 that then faded out over the next year (and in the case of sole mothers in Auckland, were worse in March 2021 than in 2018), whereas partnered parents continued to report more positive outcomes 12 months after the start of the pandemic. Similarly, Māori and Pacific people – for whom experiences of discrimination were already of concern – report that these experiences significantly worsened during COVID-19. As with any group there is a diversity of experiences within groups – we found evidence of individuals who declined in reported wellbeing over the first 12 months of COVID-19, alongside other individuals who reported improved outcomes. Our statistical modelling indicates that issues with health and loneliness during COVID-19 are likely to have been meaningful drivers for these individuals.

As this report has examined outcomes only up to early 2021, this raises the question of how wellbeing has subsequently changed, as the pandemic continued to impact society. We found evidence that the initial improvements in outcomes such as health and many measures of trust declined over the following year. Our sample does not cover periods of mass vaccination, outbreaks of the Delta or Omicron variants of the virus, Parliament protests, increased inflation, or the bulk of COVID-19 infections or related deaths in New Zealand. Using a wider variety of data sources and tracking through to early 2022, The Treasury (2022a) show evidence that many initially positive effects discussed in this report subsequently faded away, and some worsening of concerning results, such as mental health and loneliness. In many cases, these delayed or emerging effects are disproportionately affecting groups who were already subject to inequitable outcomes.

Even if some of these results were not sustainable over the longer term of the pandemic, the initial reaction provides a revealing view into the way New Zealand has the capacity to support and sustain wellbeing. There were only 54 days between the World Health Organisation declaring COVID-19 a global health emergency and most New Zealanders being required to stay in their homes except for essential purposes. This change dramatically affected economic activity and employment. That it did not appear to immediately do the same for the wellbeing of most people in New Zealand is a testament to the resilience and compassion of our society.

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Appendix

Table A1: Changes in selected wellbeing measures during COVID-19, by parent status, New Zealand

Measure	Sole mothers (18-64)		Partnered mothers (18-64)		All women (18-64)		Sole fathers (18-64)		Partnered fathers (18-64)		All men (18-64)	
	2018-Jun 2020	Jun 2020-Mar 2021	2018-Jun 2020	Jun 2020-Mar 2021	2018-Jun 2020	Jun 2020-Mar 2021	2018-Jun 2020	Jun 2020-Mar 2021	2018-Jun 2020	Jun 2020-Mar 2021	2018-Jun 2020	Jun 2020-Mar 2021
Life satisfaction score (0-10)	+0.37 **	-0.05	+0.23 **	+0.06	+0.21 ***	+0.06	+0.33	+0.36	+0.27 ***	+0.04	+0.24 ***	+0.03
Family wellbeing score (0-10)	+0.16	-0.18	+0.14 *	-0.02	+0.09 **	-0.09 *	+0.21	+0.42	+0.12 *	-0.00	+0.14 ***	-0.05
% enough/more than enough money	+6.9% *	-6.7% **	+6.8% ***	+0.8%	+7.8% ***	+0.1%	-2.1%	+1.5%	+3.8% *	+0.8%	+8.1% ***	-1.9%
% excellent/very good health	-2.7%	-0.5%	+4.2%	-2.0%	+4.1% ***	-3.3% ***	+12.9% *	-8.5%	+4.4% *	-1.8%	+2.3%	-1.7%
Mental wellbeing score (0-100)	-1.21		+1.80 **		+1.60 ***		-1.70		+1.55 *		+1.81 ***	
% lonely none of the time	-3.3%	+0.0%	+3.1%	-1.8%	+0.4%	-1.2%	+7.2%	-6.0%	-0.6%	-0.5%	-4.7% ***	-0.2%
% not experiencing discrimination	-0.9%	-2.8%	+0.7%	-1.1%	+2.0%	-1.2%	-2.0%	+2.0%	-0.2%	-1.1%	-1.2%	+1.4%
% moderate/high trust in other people	+9.1% ***	-4.5% *	+2.2%	-1.4%	+3.9% ***	-1.1% *	+6.0%	+4.6%	+2.0%	-0.3%	+2.9% ***	-1.0%
% moderate/high trust in Parliament	+17.0% ***	-7.6% ***	+8.0% ***	-4.0% **	+10.9% ***	-2.7% ***	+13.3% **	-5.1%	+12.1% ***	-4.8% ***	+11.9% ***	-3.4% ***
% moderate/high trust in police	+4.6% *	-7.0% ***	+1.3%	-1.6% *	+2.1% ***	-1.7% ***	+7.2%	+1.0%	+2.1% *	-2.6% **	+2.6% ***	-1.7% ***
% moderate/high trust in media	+7.1%	-7.7% **	+6.3% **	-6.6% ***	+4.9% ***	-2.9% **	-6.6%	+5.2%	+1.5%	-2.9%	+1.9%	-1.4%
% moderate/high trust in health system	+8.1% **	-6.2% **	+8.8% ***	-1.5%	+8.2% ***	-2.0% **	+9.8% **	-2.5%	+5.5% ***	-2.1% *	+4.3% ***	-1.3% *
% feeling safe in neighbourhood	+16.4% ***		+22.2% ***		+18.3% ***		+8.8%		+9.0% ***		+9.2% ***	

Note: *, **, *** denote differences that were statistically significant from zero at the 10%, 5% and 1% levels, respectively. 'Mental wellbeing score' is measured using the WHO-5. 'Moderate/high trust' indicates people who scored their trust at 5-10 on a 0-10 scale.

Table A2: Changes in selected wellbeing measures during COVID-19, by disability status and age, New Zealand

Measure	Disabled people (18-39)		All people (18-39)		Disabled people (40-64)		All people (40-64)		Disabled people (65+)		All people (65+)	
	2018-Jun 2020	Jun 2020-Mar 2021	2018-Jun 2020	Jun 2020-Mar 2021	2018-Jun 2020	Jun 2020-Mar 2021	2018-Jun 2020	Jun 2020-Mar 2021	2018-Jun 2020	Jun 2020-Mar 2021	2018-Jun 2020	Jun 2020-Mar 2021
Life satisfaction score (0-10)	-0.01	+0.28 ***	+0.22 ***	+0.05	+0.27 ***	-0.05	+0.23 ***	+0.04	+0.24 ***	-0.07	+0.26 ***	-0.02
Family wellbeing score (0-10)	+0.04	-0.05	+0.15 ***	-0.08	+0.11 *	-0.06	+0.09 **	-0.06	+0.02	-0.24 ***	-0.03	-0.15 **
% enough/more than enough money	+8.6% ***	+1.6%	+10.6% ***	-1.3%	+4.5% ***	-0.5%	+5.2% ***	-0.4%	+5.7% ***	-1.1%	+6.5% ***	+0.4%
% excellent/very good health	+3.0%	+0.5%	+2.9% *	-1.9%	+0.4%	-0.8%	+3.7% **	-3.2% **	+7.0% ***	-1.4%	+9.4% ***	-2.2%
Mental wellbeing score (0-100)	+0.55		+1.40 **		+1.26 *		+2.00 ***		+3.79 ***		+3.95 ***	
% lonely none of the time	-1.2%	+1.5%	-3.1% *	-1.2%	-2.3%	+2.6%	-1.7%	-0.1%	-11.4% ***	+1.2%	-10.2% ***	+3.4% **
% not experiencing discrimination	-3.3%	+2.4%	+1.1%	+0.8%	-1.9% *	-0.5%	-0.5%	-0.5%	-4.3% ***	-1.1%	-4.0% ***	-1.0%
% moderate/high trust in other people	+2.7%	+2.8%	+3.8% ***	-1.4%	+2.7% **	-0.6%	+3.0% ***	-0.8%	+1.4%	-0.1%	+2.1% **	-0.3%
% moderate/high trust in Parliament	+9.8% ***	-5.6% **	+10.9% ***	-4.4% ***	+12.5% ***	-2.2%	+12.2% ***	-1.9% *	+12.5% ***	-3.0%	+12.6% ***	-1.8%
% moderate/high trust in police	+0.8%	-2.6%	+1.2%	-2.1% ***	+3.8% ***	-0.7%	+3.5% ***	-1.4% ***	+2.0% **	-1.4% *	+2.1% ***	-1.1% *
% moderate/high trust in media	+2.4%	-1.0%	+4.9% ***	-3.7% **	+0.2%	+1.0%	+2.3%	-0.8%	+5.9% **	-0.5%	+7.1% ***	-1.1%
% moderate/high trust in health system	+7.8% ***	-2.5%	+6.5% ***	-2.3% ***	+7.5% ***	-1.7%	+6.3% ***	-1.0%	+5.2% ***	-0.8%	+5.8% ***	-0.7%
% feeling safe in neighbourhood	+9.7% **		+13.2% ***		+11.9% ***		+14.3% ***		+15.6% ***		+16.4% ***	

Note: *, **, *** denote differences that were statistically significant from zero at the 10%, 5% and 1% levels, respectively. 'Mental wellbeing score' is measured using the WHO-5. 'Moderate/high trust' indicates people who scored their trust at 5-10 on a 0-10 scale.

Table A3: Changes in selected wellbeing measures during COVID-19, by Māori/Pacific, New Zealand

Measure	Māori (18-64)		Pacific people (18-64)		Non-Māori, non-Pacific (18-64)		All people (18-64)	
	2018-Jun 2020	Jun 2020-Mar 2021	2018-Jun 2020	Jun 2020-Mar 2021	2018-Jun 2020	Jun 2020-Mar 2021	2018-Jun 2020	Jun 2020-Mar 2021
Life satisfaction score (0-10)	+0.26 ***	-0.04	+0.74 ***	-0.18 *	+0.17 ***	+0.08 **	+0.23 ***	+0.04
Family wellbeing score (0-10)	+0.41 ***	-0.17 *	+0.40 **	-0.06	+0.04	-0.05	+0.12 ***	-0.07 **
% enough/more than enough money	+11.6% ***	-3.7%	+16.5% ***	+1.2%	+5.0% ***	-0.2%	+7.9% ***	-0.8%
% excellent/very good health	+7.7% ***	-2.9%	+6.3%	-6.5%	+1.4% *	-2.0% **	+3.2% ***	-2.5% ***
Mental wellbeing score (0-100)	+2.36 ***		+2.21		+1.46 ***		+1.69 ***	
% lonely none of the time	-3.0%	-0.5%	-10.2% **	-0.9%	-0.3%	-0.7%	-2.1% **	-0.6%
% not experiencing discrimination	-2.0%	-2.5%	-5.8% *	+2.0%	+1.5% *	+0.6%	+0.4%	+0.1%
% moderate/high trust in other people	+6.9% ***	-2.0%	+3.5%	-0.9%	+2.7% ***	-1.1% **	+3.4% ***	-1.0% **
% moderate/high trust in Parliament	+18.5% ***	-3.3% **	+13.5% ***	+0.4%	+9.3% ***	-3.2% ***	+11.4% ***	-3.0% ***
% moderate/high trust in police	+7.5% ***	-5.7% ***	+0.3%	+1.4%	+1.4% ***	-1.2% ***	+2.4% ***	-1.8% ***
% moderate/high trust in media	+7.6% ***	-1.0%	+14.0% ***	-3.5%	+1.3%	-2.1% **	+3.5% ***	-2.2% **
% moderate/high trust in health system	+10.2% ***	-3.0%	+3.8% *	-0.3%	+5.6% ***	-1.3% ***	+6.3% ***	-1.6% ***
% feeling safe in neighbourhood	+9.1% **		+7.3%		+15.0% ***		+13.7% ***	

Note: *, **, *** denote differences that were statistically significant from zero at the 10%, 5% and 1% levels, respectively. 'Mental wellbeing score' is measured using the WHO-5. 'Moderate/high trust' indicates people who scored their trust at 5-10 on a 0-10 scale.

Table A4: Changes in selected wellbeing measures during COVID-19, by parent status, Auckland only

Measure	Sole mothers (18-64)		Partnered mothers (18-64)		All women (18-64)		Sole fathers (18-64)		Partnered fathers (18-64)		All men (18-64)	
	2018-Jun 2020	Jun 2020-Mar 2021	2018-Jun 2020	Jun 2020-Mar 2021	2018-Jun 2020	Jun 2020-Mar 2021	2018-Jun 2020	Jun 2020-Mar 2021	2018-Jun 2020	Jun 2020-Mar 2021	2018-Jun 2020	Jun 2020-Mar 2021
Life satisfaction score (0-10)	+0.63 **	-0.52 **	+0.16	+0.09	+0.26 ***	+0.05	n/r	+1.02	+0.35 ***	+0.04	+0.23 **	+0.04
Family wellbeing score (0-10)	+0.51 **	-0.60 ***	-0.04	+0.06	+0.08	-0.11	n/r	+1.04 *	+0.06	-0.01	+0.09	-0.00
% enough/more than enough money	+2.9%	-11.2% **	+6.8%	+3.9%	+7.6% **	+2.1%	n/r	n/r	+5.1%	-1.8%	+11.4% ***	-3.1%
% excellent/very good health	-2.3%	-5.7%	+6.1%	-6.6% *	+4.5% *	-6.8% ***	n/r	n/r	+5.1%	-4.4%	-2.2%	-3.7%
Mental wellbeing score (0-100)	+0.79		+2.43		+2.04 *		n/r		+1.02		+1.08	
% lonely none of the time	+5.5%	-12.5% *	+3.0%	-2.2%	-2.7%	-3.6%	n/r	n/r	-9.2% **	+4.3%	-12.2% ***	+1.7%
% not experiencing discrimination	+12.4% *	-3.6%	-1.3%	-0.8%	+1.7%	-0.5%	n/r	+6.0%	-2.3%	+0.2%	-3.4% *	+1.3%
% moderate/high trust in other people	+6.6%	-5.6%	+1.5%	-0.8%	+4.2% ***	-1.6%	n/r	+0.0%	-0.3%	+0.8%	+0.0%	+1.1%
% moderate/high trust in Parliament	+15.4% **	-9.9% **	+3.5%	+1.0%	+10.8% ***	-2.2%	n/r	n/r	+11.2% ***	-2.3%	+10.3% ***	-1.0%
% moderate/high trust in police	+7.0%	-6.7%	-0.2%	-1.1%	+2.7% **	-1.4%	n/r	+23.0%	+2.1%	-2.7% *	+2.2% **	-0.8%
% moderate/high trust in media	+11.0%	-15.5% ***	-0.4%	-2.7%	+5.7% **	-4.8% **	n/r	+11.7%	+7.3% **	-7.6% **	+3.9%	-3.5%
% moderate/high trust in health system	+0.1%	-4.8%	+2.3%	+0.7%	+4.9% ***	-1.7%	n/r	+0.0%	+5.3% **	-2.4% *	+1.6%	+0.0%
% feeling safe in neighbourhood	+23.7% ***		+29.8% ***		+19.9% ***		n/r		+13.9% ***		+13.6% ***	

Note: *, **, *** denote differences that were statistically significant from zero at the 10%, 5% and 1% levels, respectively. 'n/r' denotes results that were suppressed due to low sample size. 'Mental wellbeing score' is measured using the WHO-5. 'Moderate/high trust' indicates people who scored their trust at 5-10 on a 0-10 scale.

Table A5: Changes in selected wellbeing measures during COVID-19, by disability status and age, Auckland only

Measure	Disabled people (18-39)		All people (18-39)		Disabled people (40-64)		All people (40-64)		Disabled people (65+)		All people (65+)	
	2018-Jun 2020	Jun 2020-Mar 2021	2018-Jun 2020	Jun 2020-Mar 2021	2018-Jun 2020	Jun 2020-Mar 2021	2018-Jun 2020	Jun 2020-Mar 2021	2018-Jun 2020	Jun 2020-Mar 2021	2018-Jun 2020	Jun 2020-Mar 2021
Life satisfaction score (0-10)	-0.15	+0.65 ***	+0.18 **	+0.07	+0.42 ***	-0.09	+0.31 ***	+0.02	+0.09	-0.15	+0.17	-0.04
Family wellbeing score (0-10)	-0.25	+0.26	+0.07	-0.03	+0.16	-0.10	+0.10	-0.08	-0.18	-0.26 *	-0.24 **	-0.10
% enough/more than enough money	+10.8% *	+7.0%	+12.8% ***	-1.2%	+5.9% *	+2.5%	+5.7% **	+0.5%	+4.8%	+0.1%	+6.6% *	+1.3%
% excellent/very good health	+1.0%	-2.1%	-0.3%	-5.2% *	+3.7%	-1.8%	+2.9%	-5.4% **	+4.8%	+0.6%	+5.8% *	-0.9%
Mental wellbeing score (0-100)	-1.74		+1.39		+1.25		+1.74 **		+2.80 *		+2.95 **	
% lonely none of the time	-12.2% **	+2.7%	-12.3% ***	-0.9%	-4.3%	+2.6%	-2.9%	-0.7%	-12.6% ***	+6.6%	-12.7% ***	+5.6% *
% not experiencing discrimination	-10.3%	+7.2%	-1.2%	+0.6%	-5.2% **	+0.0%	-0.7%	+0.4%	-5.1% **	-1.3%	-5.2% **	-0.1%
% moderate/high trust in other people	-1.2%	+9.7% **	+1.5%	+0.2%	+3.1%	-0.4%	+2.6% **	-0.7%	+0.9%	-0.7%	+2.3%	-0.7%
% moderate/high trust in Parliament	+8.6% *	+1.9%	+10.6% ***	-2.4%	+9.1% ***	+0.3%	+10.6% ***	-0.9%	+11.4% ***	-1.4%	+10.8% ***	-0.2%
% moderate/high trust in police	-1.0%	+2.3%	+1.3%	-1.0%	+3.7% **	+0.6%	+3.6% ***	-1.2%	+3.0%	-0.1%	+3.0% *	-0.6%
% moderate/high trust in media	+3.3%	+4.1%	+7.6% **	-5.3% **	-4.2%	+5.7%	+2.1%	-3.1%	+12.8% ***	-5.2%	+13.4% ***	-5.1% **
% moderate/high trust in health system	+0.1%	-1.5%	+2.9% **	-1.6%	+5.7% *	+2.1%	+3.8% **	-0.2%	+5.1% **	+0.4%	+5.6% ***	+0.1%
% feeling safe in neighbourhood	+18.8% **		+17.8% ***		+12.2% ***		+15.3% ***		+18.4% ***		+18.2% ***	

Note: *, **, *** denote differences that were statistically significant from zero at the 10%, 5% and 1% levels, respectively. 'Mental wellbeing score' is measured using the WHO-5. 'Moderate/high trust' indicates people who scored their trust at 5-10 on a 0-10 scale.

Table A6: Changes in selected wellbeing measures during COVID-19, by Māori/Pacific, Auckland only

Measure	Māori (18-64)		Pacific people (18-64)		Non-Māori, non-Pacific (18-64)		All people (18-64)	
	2018-Jun 2020	Jun 2020-Mar 2021	2018-Jun 2020	Jun 2020-Mar 2021	2018-Jun 2020	Jun 2020-Mar 2021	2018-Jun 2020	Jun 2020-Mar 2021
Life satisfaction score (0-10)	+0.22 **	-0.00	+0.83 ***	-0.15	+0.11	+0.11 *	+0.25 ***	+0.05
Family wellbeing score (0-10)	+0.26 **	-0.17	+0.40 **	+0.01	+0.01	-0.04	+0.09	-0.05
% enough/more than enough money	+14.7% ***	-11.2%	+16.7% **	+0.3%	+4.7% **	+1.3%	+9.4% ***	-0.4%
% excellent/very good health	+11.6% **	-14.7% *	+4.7%	-8.3%	-2.1%	-3.4% **	+1.2%	-5.3% ***
Mental wellbeing score (0-100)	+1.19 *		+2.80		+1.04		+1.55 **	
% lonely none of the time	-17.7% **	+4.7%	-17.2% ***	+3.8%	-3.1% *	-2.3%	-7.4% ***	-0.9%
% not experiencing discrimination	-7.8%	-0.6%	-8.3% *	+0.8%	+1.3%	+0.6%	-0.8%	+0.4%
% moderate/high trust in other people	+9.4% ***	-5.5%	+1.3%	-0.7%	+1.0%	-0.1%	+2.2% **	-0.3%
% moderate/high trust in Parliament	+20.3% ***	+1.8%	+14.6% ***	+2.9%	+7.5% ***	-2.6% ***	+10.5% ***	-1.6% *
% moderate/high trust in police	+7.5% ***	-2.1%	+0.2%	+2.0%	+1.8% **	-1.3% **	+2.5% ***	-1.2%
% moderate/high trust in media	+16.0% **	-3.8%	+16.2% ***	-2.4%	-0.5%	-3.9% **	+4.9% **	-4.2% **
% moderate/high trust in health system	+0.8%	+1.6%	+1.3%	-0.4%	+3.6% ***	-0.8%	+3.2% ***	-0.8%
% feeling safe in neighbourhood	+15.2% *		+7.5%		+17.6% ***		+16.6% ***	

Note: *, **, *** denote differences that were statistically significant from zero at the 10%, 5% and 1% levels, respectively. 'Mental wellbeing score' is measured using the WHO-5. 'Moderate/high trust' indicates people who scored their trust at 5-10 on a 0-10 scale.

Table A7: Results of fixed effects models of selected measures in the first year of COVID-19

	Life satisfaction			Family wellbeing			Enough money (logit)			Good health (logit)		
	Coef	SE	p	Coef	SE	p	OR	SE	p	OR	SE	p
Economic												
Enough money (relative to more than enough)												
Enough	-0.070	0.031	.023	-0.040	0.032	.202	–			0.780	0.081	.002
Only just enough	-0.228	0.039	.000	-0.194	0.041	.000	–			0.720	0.100	.001
Not enough	-0.415	0.054	.000	-0.249	0.056	.000	–			0.504	0.141	.000
Employment status (relative to employed)												
Unemployed	-0.245	0.067	.000	-0.085	0.070	.224	0.468	0.188	.000	0.900	0.172	.540
Not in labour force	-0.097	0.053	.069	-0.027	0.055	.629	0.617	0.148	.001	1.041	0.141	.777
Have multiple jobs	-0.024	0.059	.686	0.029	0.060	.630	1.101	0.180	.593	0.831	0.146	.203
Dep17 (+1 point on a 0-17 scale)	-0.045	0.007	.000	-0.048	0.007	.000	0.732	0.024	.000	0.935	0.019	.000
Health												
Self-rated health (relative to excellent)												
Very good	-0.094	0.030	.002	-0.097	0.031	.002	0.941	0.091	.502	–		
Good	-0.286	0.035	.000	-0.222	0.036	.000	0.837	0.103	.084	–		
Fair	-0.628	0.047	.000	-0.362	0.048	.000	0.805	0.133	.104	–		
Poor	-1.186	0.068	.000	-0.497	0.071	.000	0.833	0.197	.356	–		
Housing												
Problems with damp/mould (relative to none)												
Minor problem	-0.072	0.030	.017	-0.064	0.031	.039	0.956	0.086	.602	0.866	0.077	.060
Major problem	-0.004	0.067	.951	0.068	0.069	.327	0.867	0.195	.463	0.841	0.172	.312
Problems with cold (relative to none)												
Minor problem	-0.004	0.032	.892	-0.064	0.033	.051	0.888	0.090	.187	1.071	0.081	.401
Major problem	-0.041	0.056	.463	-0.001	0.058	.980	0.688	0.170	.028	0.956	0.148	.763
Loneliness												
Feel lonely (relative to none of the time)												
A little of the time	-0.178	0.025	.000	-0.135	0.026	.000	0.943	0.074	.423	0.873	0.064	.035
Some of the time	-0.425	0.031	.000	-0.259	0.032	.000	0.904	0.090	.261	0.717	0.079	.000
Most of the time	-0.868	0.060	.000	-0.398	0.062	.000	0.982	0.173	.915	0.529	0.166	.000
All of the time	-0.965	0.111	.000	-0.812	0.118	.000	1.092	0.313	.779	0.721	0.304	.282
Social cohesion												
Trust most people (+1 point on a 0-10 scale)	0.082	0.007	.000	0.105	0.007	.000	1.041	0.020	.045	1.081	0.018	.000
Experienced discrimination	-0.086	0.030	.004	-0.070	0.031	.025	1.062	0.086	.481	1.096	0.075	.222
COVID-19												
In lockdown	-0.139	0.054	.011	-0.103	0.057	.069	0.939	0.155	.688	0.964	0.140	.795
Received Winter Energy Payment	-0.063	0.048	.189	0.149	0.050	.003	1.348	0.144	.038	1.086	0.137	.549
Survey wave (vs Jun 2020)												
Sep 2020	-0.069	0.022	.002	-0.123	0.023	.000	0.999	0.066	.994	0.864	0.059	.013
Dec 2020	-0.005	0.024	.847	-0.098	0.025	.000	1.016	0.071	.828	0.887	0.062	.055
Mar 2021	-0.003	0.025	.890	-0.132	0.026	.000	0.982	0.076	.815	0.794	0.065	.000

Note: Results for the ‘enough money’ and ‘good health’ columns are derived from logistic regression models and are shown as odds ratios. ‘Enough money’ is predicting the respondent reports having enough, or more than enough money to meet their needs. ‘Good health’ is predicting the respondent reports being in ‘excellent’ or ‘very good’ health.

Table A8: Results of fixed effects models of selected measures in the first year of COVID-19

	No damp/mould			Warm house (logit)			Not lonely (logit)			Trust other people		
	OR	SE	p	OR	SE	p	OR	SE	p	Coef	SE	p
Economic												
Enough money (relative to more than enough)												
Enough	1.055	0.117	.649	0.877	0.127	.301	0.948	0.076	.479	-0.106	0.043	.015
Only just enough	0.906	0.139	.480	0.758	0.148	.061	0.903	0.096	.289	-0.225	0.060	.000
Not enough	1.165	0.179	.393	0.579	0.188	.004	1.055	0.132	.688	-0.024	0.033	.462
Employment status (relative to employed)												
Unemployed	0.901	0.214	.626	0.963	0.225	.867	0.691	0.170	.030	0.014	0.059	.811
Not in labour force	1.138	0.187	.489	0.808	0.184	.247	0.679	0.134	.004	0.024	0.065	.715
Have multiple jobs	1.018	0.208	.932	0.814	0.211	.330	1.325	0.151	.062	-0.195	0.033	.000
Dep17 (+1 point on a 0-17 scale)	0.933	0.022	.002	0.894	0.022	.000	0.887	0.019	.000	-0.054	0.034	.109
Health												
Self-rated health (relative to excellent)												
Very good	1.048	0.110	.668	0.986	0.113	.903	0.835	0.076	.017	-0.115	0.039	.003
Good	0.859	0.121	.208	1.042	0.128	.749	0.730	0.087	.000	-0.224	0.051	.000
Fair	0.819	0.154	.194	0.885	0.160	.443	0.641	0.115	.000	-0.476	0.074	.000
Poor	0.867	0.218	.512	1.123	0.211	.582	0.671	0.164	.015	0.080	0.074	.279
Housing												
Problems with damp/mould (relative to none)												
Minor problem		–		0.207	0.086	.000	0.705	0.075	.000	-0.089	0.073	.222
Major problem		–		0.145	0.186	.000	0.788	0.164	.146	-0.018	0.035	.612
Problems with cold (relative to none)												
Minor problem	0.221	0.087	.000		–		0.898	0.078	.166	-0.028	0.062	.650
Major problem	0.101	0.173	.000		–		0.836	0.144	.212	-0.046	0.053	.384
Loneliness												
Feel lonely (relative to none of the time)												
A little of the time	0.689	0.086	.000	0.850	0.088	.063		–		-0.080	0.034	.020
Some of the time	0.713	0.101	.001	0.832	0.102	.071		–		-0.258	0.066	.000
Most of the time	0.665	0.185	.027	0.813	0.177	.243		–		-0.528	0.122	.000
All of the time	0.632	0.374	.220	0.426	0.369	.021		–		-0.089	0.033	.007
Social cohesion												
Trust most people (+1 point on a 0-10 scale)	1.057	0.024	.020	1.015	0.024	.530	1.043	0.017	.016		–	
Experienced discrimination	0.747	0.095	.002	0.767	0.095	.005	0.709	0.075	.000	-0.044	0.028	.110
COVID-19												
In lockdown	0.980	0.174	.907	0.921	0.193	.670	0.953	0.133	.715	-0.046	0.008	.000
Received Winter Energy Payment	0.990	0.152	.947	0.966	0.147	.817	0.944	0.121	.632	-0.004	0.057	.947
Survey wave (vs Jun 2020)												
Sep 2020	0.990	0.075	.891	1.279	0.077	.001	1.043	0.056	.447	-0.112	0.024	.000
Dec 2020	1.361	0.083	.000	1.755	0.085	.000	1.152	0.060	.018	-0.101	0.026	.000
Mar 2021	1.801	0.089	.000	2.083	0.091	.000	1.184	0.063	.007	-0.148	0.028	.000

Note: Results for the ‘no damp/mould’, ‘warm house’ and ‘not lonely’ columns are derived from logistic regression models and are shown as odds ratios. ‘No damp/mould’ is predicting the respondent reports not having any problems with damp or mould in their home. ‘Warm home’ is predicting the respondent reports not having any problems heating their home. ‘Trust other people’ is a continuous score, from 0-10.