



MINISTRY OF EDUCATION
TE TĀHUHU O TE MĀTAURANGA

Exploring young people's experience of limited employment



Beyond tertiary study

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Disclaimer

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The results in this report are not official statistics. They have been created for research purposes from the Integrated Data Infrastructure (IDI) which is carefully managed by Stats NZ. For more information about the IDI please visit <https://www.stats.govt.nz/integrated-data/>.

The results are based in part on tax data supplied by Inland Revenue to Stats NZ under the Tax Administration Act 1994 for statistical purposes. Any discussion of data limitations or weaknesses is in the context of using the IDI for statistical purposes and is not related to the data's ability to support Inland Revenue's core operational requirements.

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SUMMARY

Context of this report

While many young people successfully transition from school to tertiary education and work, there is a significant group who face persistent barriers which prevent them reaching their education and employment goals. This is a long-standing and multi-faceted policy challenge with intergenerational consequences.

An area where we can usefully improve our information is around young people's experience of limited employment. Limited employment provides a broader concept than the existing standard measure of 'not in education, employment or training' (NEET). Limited employment captures a range of activities and situations where young people have no or limited connections to full-time, well-paid employment, or to education that is likely to move them into such employment. It also identifies where this persists over time, rather than only at points in time.

Understanding limited employment and its prevalence provides a starting point for identifying the persistent barriers which can prevent young people from reaching their goals and aspirations.

Purpose of report

The purpose of this report is to extend the information we have on young people's experience of limited employment. It looks at who experiences limited employment, and the pathways young people follow in and out of limited employment.

The report also looks at factors that are associated with being in limited employment for longer periods of time. This analysis highlights a complex array of interrelated factors that influence young people's lives. They cover socio-economic disadvantage in childhood, poor experiences of education and later-life experiences.

The analysis in the report is subject to significant data limitations. The data is drawn from government administrative systems. This data generally focusses on assistance and interventions provided to children and young people. It lacks important contextual information and outcomes that matter most to young people, their whānau and communities.

What is limited employment?

Limited employment is a broader concept than NEET. It includes young people who are in low-paid, part-time or casual work, and those with low-level tertiary education qualifications (Level 1 and 2). It is also defined to include young people who are in these activities for a large part of each year. This contrasts with the official NEET statistics which include young people who may have been NEET for quite short periods of time.

Characteristics of young people in limited employment

The data shows that across all groups of young people, limited employment peaked at age 19 and then reduced to a steady rate after that. Limited employment rates were higher for females than for males, and for Māori and Pacific young people than for other ethnic groups, and for young people living in Te Tai Tokerau, Gisborne/Hawke's Bay and Bay of Plenty than for those living in other regions.

The relationship between work experience, tertiary study, and limited employment

Exploratory analysis looked at the effect of work experience and tertiary study on future limited employment. It looked at what young people did between the ages of 16 and 25 and the relationship this had to being in limited employment at age 26. The results suggest that having at least two years' work experience in the earlier years may reduce the likelihood of being in limited employment at age 26 more than having one or more years of tertiary education. Being engaged in tertiary education for at least three to four years in the earlier years also significantly reduces the likelihood of limited employment at age 26, particularly if the engagement is at Level 3 or above.

Comparing limited employment across birth cohorts

Most of the analysis in this report is based on young people born in 1992, who turned 16 in 2008 and 24 in 2016. To check whether the results from the 1992 birth cohort are consistent with other birth cohorts, we compared them to young people born earlier (in 1990) and later (in 1994). We found no major differences in the rates of limited employment across these birth cohorts.

We were also interested in whether limited employment persists into adulthood. We looked at the 1984 birth cohort from ages 24 to 34. This showed that limited employment does persist into adulthood, with around 30 percent of the population in limited employment at each age from 24 to 34 years.

Pathways into and out of limited employment

Individuals do move in and out of limited employment over time. We looked at the extent to which young people move between being in limited employment and not, across two-year age periods from ages 16 to 26. People who were in limited employment for both years of each two-year age period were more likely to remain in this status in the following age period. Similarly, people who were not in limited employment for both years of each age period were more likely to remain in that status in the following age period.

Pathways for young people who were in limited employment at age 17 showed that most of these people (about 60 percent) end up in long-term limited employment.

The pathways for Māori young people show that they face greater barriers to moving out of limited employment. Once Māori young people were in limited employment, they were more likely to remain in this status across ages 16 to 26. However, if Māori young people were out of limited employment, they were more likely to remain out of limited employment than other young people.

Intensity of limited employment from ages 16 to 24

We also looked at the total proportion of years that young people spent in limited employment from ages 16 to 24. We identified young people who spent all their years in New Zealand in limited employment, and those who spent more than half of their years in New Zealand in limited employment. These two groups were described as having high-intensity limited employment.

Young people who experienced socio-economic disadvantage in childhood, and/or had a poor experience at school were more likely to experience high-intensity limited employment. This showed up in higher rates for Māori, Pacific and disabled young people. Young mothers were also much more likely to experience high-intensity limited employment, in part due to caring responsibilities limiting their access to education and employment.

Young people who become disengaged from schooling were also more likely to end up in high-intensity limited employment. Disengagement is indicated in the data by experiencing stand-downs, suspensions, and exclusions, having engagement with attendance services, as well as moving schools three or more times.

Key factors most associated with high-intensity limited employment

We looked further to identify the key factors most associated with high-intensity limited employment. This analysis shows that factors we know are strongly associated with social and economic disadvantage and inequality are also strongly associated with high-intensity limited employment. Many of these factors highlight the failure of existing education, welfare, and employment systems to deliver equitable outcomes for young people.

The biggest factor associated with being in high-intensity limited employment was not attaining at least NCEA Level 2. Becoming a mother before age 19, and not attaining a driver licence by age 18 also had a large association with high-intensity limited employment.

Other factors highlight intergenerational aspects. Young people were more likely to be in high-intensity limited employment if their parents also had low education qualifications and/or had ongoing experiences of limited employment themselves. This can be compounded by socio-economic deprivation and family dislocation (as indicated by Oranga Tamariki notifications).

Relationship between early- and later-life limited employment

We looked at people who were in limited employment at ages 20 to 24 and whether they were also in limited employment at ages 25 to 34. Overall, this analysis showed that there was a strong relationship between early-life and later-life limited employment. If young people were in limited employment at ages 20 to 24, there was a high chance they would be in limited employment in later years. Most people who were never in limited employment at ages 20 to 24 experienced little to no limited employment in later life.

1 INTRODUCTION

1.1 Context of this report

While many young people successfully make their way from school to tertiary education and work, there is a significant group who face persistent barriers which prevent them reaching their education and employment goals. This is a long-standing and multi-faceted policy challenge with intergenerational consequences.

An area where we can usefully improve our information is around young people's experience of limited employment. Limited employment provides a broader concept than the existing standard measure of 'not in education, employment or training' (NEET). Limited employment captures a range of activities and situations where young people have no or limited connections to full-time, well-paid employment, or to education that is likely to move them into such employment. It also identifies where this persists over time, rather than only at points in time.

Understanding limited employment and its prevalence provides a starting point for identifying the persistent barriers which can prevent young people from reaching their goals and aspirations.

1.2 Purpose of report

The purpose of this report is to extend the information we have on young people's experience of limited employment. It looks at who experiences limited employment, and the pathways young people follow in and out of limited employment across ages 16 to 26.

The report also looks at factors that are associated with being in limited employment for longer periods of time. This analysis highlights a complex array of interrelated factors that influence young people's lives. They cover socio-economic disadvantage in childhood, poor experiences of education and later life experiences.

The analysis in the report is subject to significant data limitations. It uses data from the Integrated Data Infrastructure (IDI) hosted by Statistics NZ.¹ The data is drawn from government administrative systems. This data generally focusses on assistance and interventions provided to children and young people, which are more often designed to address crisis situations. Information on actions by educators and places of learning to support educational success is largely absent from this data. It also lacks important contextual information and outcomes that matter most to young people, their whānau and communities. However, it does provide important information about participation and achievement in school and tertiary education, and engagement in employment. The information on interventions provides some insights into which groups of young people are more likely to be in limited employment.

1.3 What is limited employment?

In 2019, Te Tāhuhu o te Mātauranga (the Ministry of Education) contracted Mandy McGirr to undertake a rapid review of evidence of what works for young people at risk of limited employment

¹ The IDI is a large research database. It holds de-identified microdata about people and households. The data is about life events like education, income, benefits, migration, justice, and health. Data comes from government agencies, Statistics NZ surveys and non-government organisations. It is managed by Statistics NZ.

(McGirr, 2019). The review was designed to inform policy discussions about employment and education interventions.

In undertaking the review, McGirr reframed the policy discussion about young people who are not in employment, education, or training (NEET). She argued that:

A limitation of the NEET measure is that it captures many young people who are relatively less at risk of long-run limited employment. Most New Zealand young people are NEET at some stage from ages 15 to 24. The NEET measure also misses some young people who are moving between low-paid and/or short-term jobs and/or low-level tertiary education.

McGirr proposed a broader definition of limited employment:

This definition includes those who are in minimum wage employment and/or underemployed for long or frequent periods and/or low-level (below NCEA Level 3) tertiary education. It aims to capture young people who are likely to be in limited or no employment over much of their lifetime.

This broader definition captures a range of activities and situations where young people have no or limited connections to full-time, well-paid employment, or to education that is likely to move them into such employment. It acknowledges that there are young people who face challenges in getting and keeping jobs that are rewarding, secure and satisfying.² Young people who continue in limited employment for longer periods of time are much more likely to continue this pattern into later adulthood, if not effectively supported.

Identifying people in limited employment

To identify people in limited employment, a dataset was created in the IDI that was structured by birth year cohorts. It contained information on each person's characteristics and family background, health, education, and employment status.

A measure of limited employment was developed that identified people who were in limited employment for a substantial part of each calendar year. This was based on the number of days that a person spent in New Zealand, in school, in tertiary education and in employment during the year.

People were identified as being in limited employment during a year if they were in New Zealand for 331 days or more each year and:

- enrolled in school and/or in Level 3 or higher tertiary education for less than 220 days (including no enrolment)
- in substantive employment for less than six months of the year (including no substantive employment)
- not in self-employment.

People need to have been present in New Zealand for most of a year to be identified as being either in or out of limited employment. Those who were in New Zealand for less than 331 days were counted as being 'overseas' in that year. This threshold excluded some people who had

² To help with understanding the concept of limited employment and how it differs from NEET, a few scenarios are outlined in appendix A.

employment and education in New Zealand but who were out of the country for more than one month of a particular year.

With respect to education, we were interested in identifying people who were not in education that directly led towards employment. People who were only enrolled in Level 1 and 2 tertiary education were included in limited employment, as programmes at these levels are aimed at helping people develop foundation skills that they may have missed out on at school. Level 3 or higher tertiary education is designed to provide pathways to employment.

People were counted as being in limited employment if they were enrolled in school or Level 3 or higher tertiary education for less than 220 days in the year. Some young people were in school and then tertiary education in the same year. The definition adds together the days in school and Level 3 or higher tertiary education.

With respect to employment, we were interested in identifying people who were in low-paid, part-time or casual employment only. We did this by developing a measure of substantive employment and classing those who did not meet this measure as being in limited employment. The measure was set so that those who were not included were very likely to be in low-paid, part-time or casual employment. However, some of the people categorised as being in substantive employment may have been in such work. So, the measure may have underestimated the extent of this kind of work.

Employment data in the IDI does not include hours of work, so to identify substantive employment we used monthly income from wages and salaries. Substantive employment was defined as earning monthly wages and salaries above the minimum wage if a person worked a 30-hour week in each of at least six months in a year.³ Substantive employment was intended to identify people who were likely to be working near to full-time.

We also had to decide how to treat people in self-employment. Being in self-employment was defined as having income from being a company director, in a business partnership or being a sole trader. Inland Revenue assesses this income on an annual basis and no information is available on which months it applies to. So, people with this income were defined as self-employed for all months during the relevant tax year. It is very hard to tell the extent of activity involved in self-employment from taxable income. For young people, this is a very small group and we decided to exclude them from the definition of limited employment.

Two other ways of identifying limited employment using monthly data were also explored. One looked at people in limited employment for at least one month each year, which provided a high-end figure for people who experienced some limited employment during the year. Another looked at people who were in limited employment for ALL months of the year, which provided a low-end figure.

³ Without data on hours worked each month, it was challenging to identify people who earned above minimum wage each year. An assumption was made that if a person worked for 30 hours each week, this translated to 120 hours of work each month. Using monthly income data, an hourly wage on the 120 hours of work each month was calculated. This hourly wage was compared to the minimum wage at the time to identify people who earned below minimum wage.

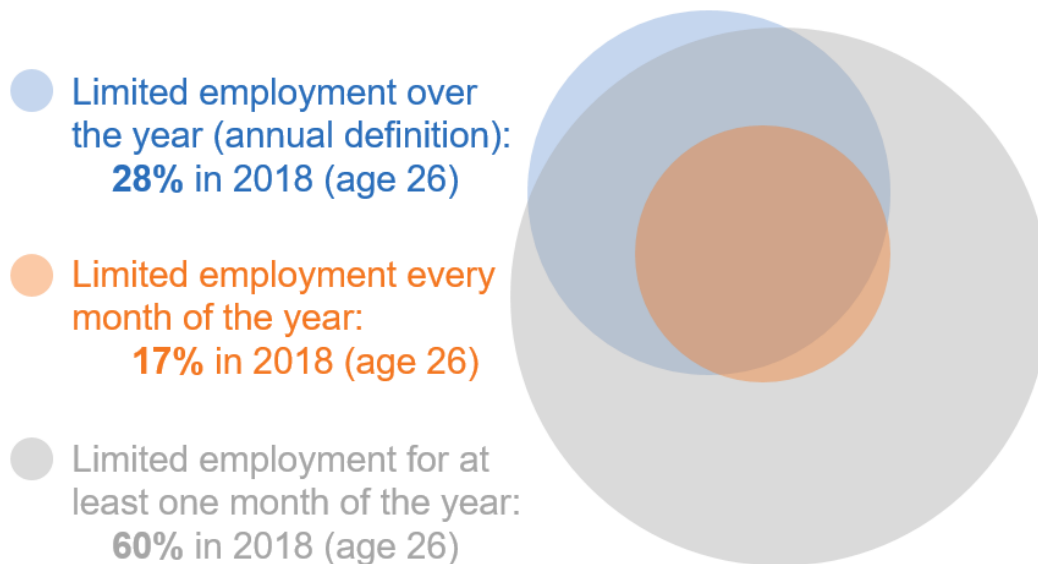
Figure 1 compares the annual limited employment definition with the high- and low-end definitions created from monthly data for the 1992 cohort as at age 26. Around:

- 60 percent of 26-year-olds in 2018 were in limited employment for at least one month of the year
- 17 percent were in limited employment for every month of the year
- 28 percent were identified as being in annual limited employment using the definition described above.

The overlaps show that the annual definition lies mid-way between these two extremes. There is a small proportion of people who are in limited employment by the annual definition (less than 0.5 percent of people identified as being in annual limited employment) that are not identified as being in limited employment by monthly measures.

Figure 1:

Overlaps between monthly and annual limited employment proportions for 26-year-olds in 2018



2 CHARACTERISTICS OF YOUNG PEOPLE IN LIMITED EMPLOYMENT

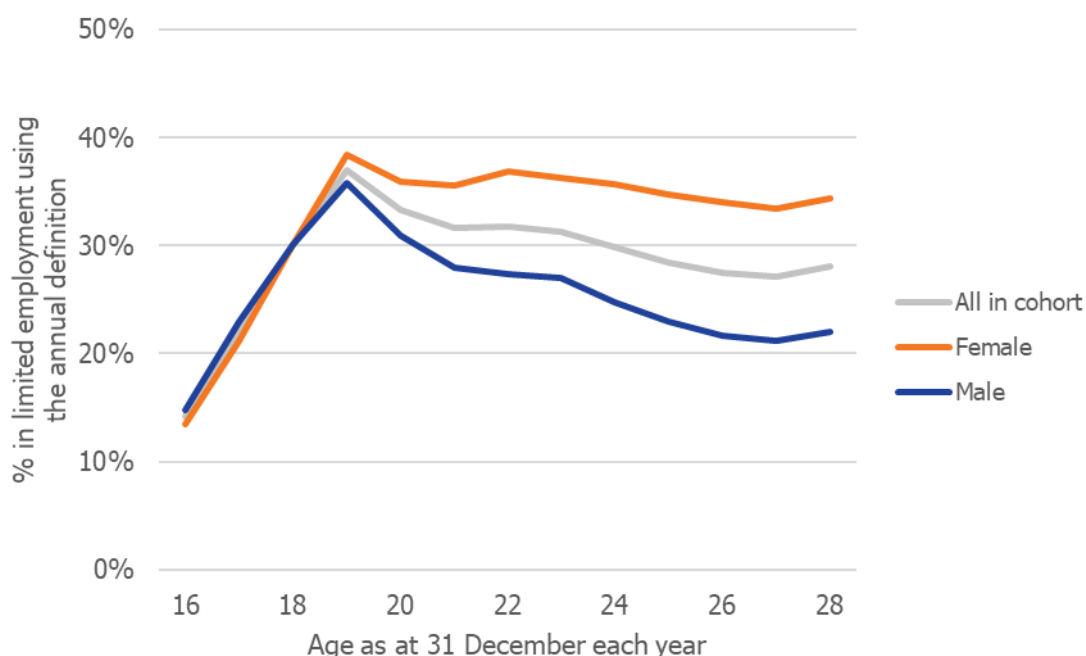
This section looks at the extent to which young people were in limited employment across ages 16 to 28, and how these patterns differ by gender, ethnicity and regions based on the 1992 birth cohort.

The data shows that across all groups of young people, limited employment peaked at age 19 and then reduced to a steady rate after that. Limited employment rates were higher for females than for males, and for Māori and Pacific young people than for other ethnic groups, and for young people living in Te Tai Tokerau, Gisborne/Hawke's Bay and Bay of Plenty than for those living in other regions.

2.1 Limited employment by gender, ethnicity, and school regions

Figure 2 shows the proportions of young people born in 1992 who were in limited employment by age and gender.⁴ At ages 16 to 18, the proportion of females in limited employment was slightly lower than the proportion of males in limited employment. However, from age 19 a higher proportion of females were in limited employment compared to males. By age 25, females were 1.5 times more likely to be in limited employment compared to males. These results suggest that while young females and males experience similar rates of limited employment in their late teens, there are additional factors specific to females that increase their chances of being in limited employment in later life. One of the most significant factors is caring for children.

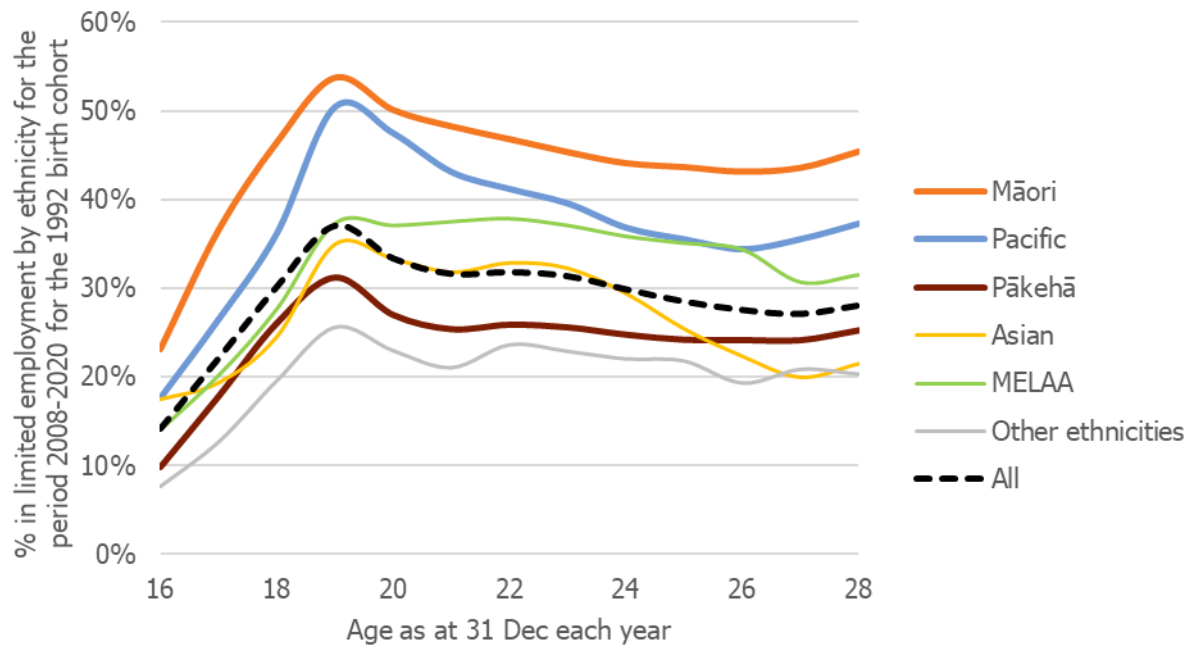
Figure 2:
Limited employment by gender for the 1992 birth cohort



⁴ Analysis is based on calendar years and age calculated as at 31 December each year

There were also variations in annual limited employment by ethnicity. Figure 3 shows that Māori and Pacific young people had higher levels of limited employment relative to the proportion for everyone in the 1992 cohort.⁵

Figure 3:
Limited employment by ethnicity for the 1992 birth cohort



Note: MELAA refers to people with Middle Eastern, Latin American, and African ethnicities

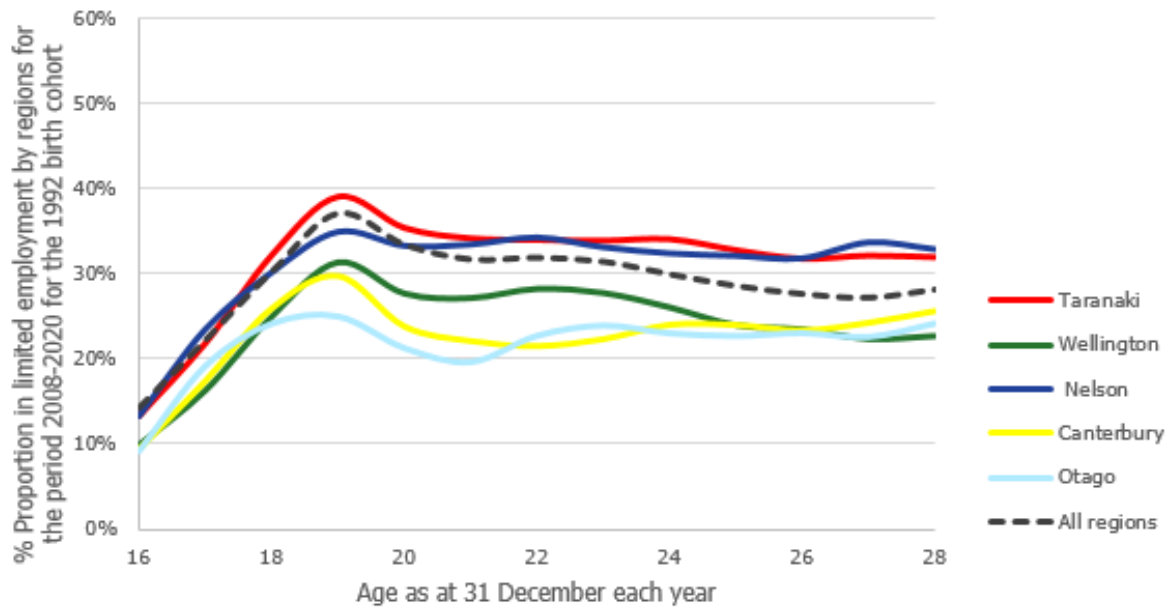
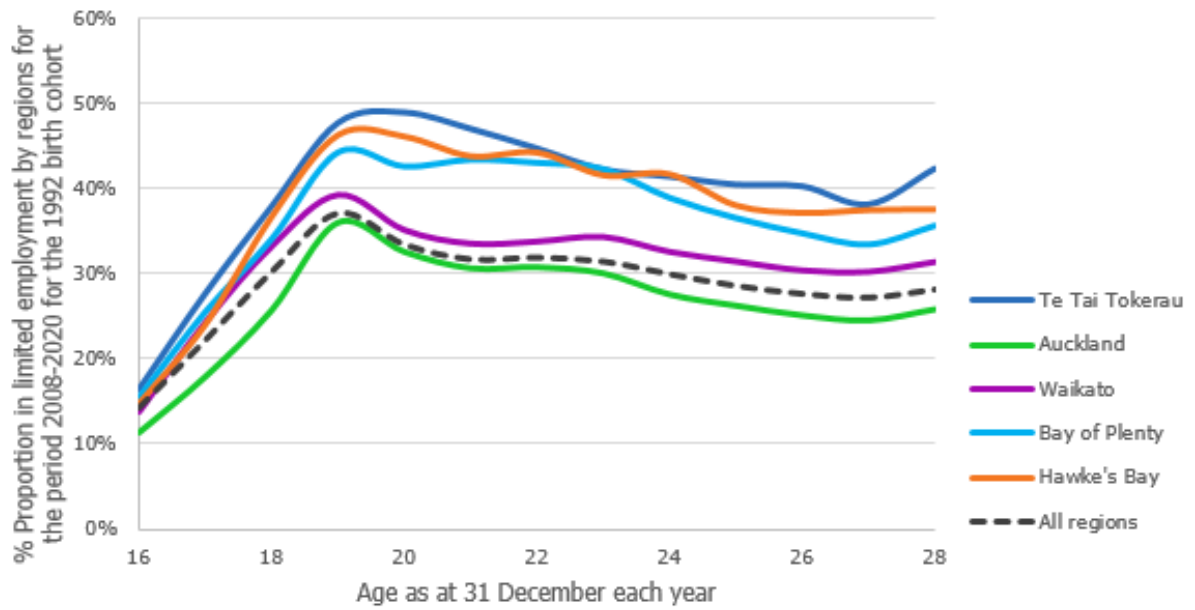
Figure 4 shows the proportion of young people who were in limited employment by age and region.⁶ Te Tai Tokerau, Hawke's Bay and Bay of Plenty had a disproportionate and persistently higher number of young people in limited employment across ages 16 to 28 compared to other regions. This could be driven in part by the economic activities going on in these different regions. Some regions, such as Hawke's Bay and Bay of Plenty experience higher rates of unemployment and lead in areas such as horticulture, which is a major provider of seasonal work.⁷

⁵ For ethnic groups with low numbers of people, such as the "other ethnicities" group, the margins of error for the limited employment proportions reported are between 2% and 3% at each age at the 95% confidence interval. This means that we are 95% confident that the limited employment proportions reported could vary by 2% to 3% at each age.

⁶ People were counted in the region in which they were living at each age, rather than the region they attended school in. Where people moved across regions during the year, the analysis prioritised the region where they spent the most months. These regions were then reported using school region groupings where, for example, Nelson includes people from Marlborough, Tasman, and West Coast regions.

⁷ To cross-check these findings, a quick check of average unemployment rates in the September 2021 Household Labour Force Survey for the period 2019-2021 by region showed that Te Tai Tokerau, Hawke's Bay and Bay of Plenty have higher unemployment rates, while Wellington has the lowest unemployment rates.

Figure 4:
Limited employment by region for the 1992 birth cohort



Notes:
 Hawke's Bay includes Gisborne region
 Nelson includes Marlborough, Tasman, and West Coast regions
 Otago includes Southland region
 Taranaki includes Manawatū/Whanganui regions

Top and bottom graphs have five regions each for visual clarity.

3 THE RELATIONSHIP BETWEEN WORK EXPERIENCE, TERTIARY STUDY AND LIMITED EMPLOYMENT

We were interested in the extent to which paid work experience and studying in tertiary education could potentially reduce the likelihood that young people would be in limited employment for the long-term. This section presents an exploratory analysis looking at young people in limited employment at age 26 and their history of employment and tertiary education between the ages of 16 and 25. It shows the relative effect of spending more years in each of these activities.

Figure 5 looks at the 1992 birth cohort and shows the proportions who were in limited employment at age 26 (in 2018) by the number of years they spent in employment, any tertiary study or tertiary study at Level 3 and above between ages 16 and 25. For each year, a person was counted as having some work or tertiary education (including Level 3 or above) if they had at least one day or more during a year in that activity. This analysis disregards the number of days spent in the activity and whether the employment was substantial (earning above minimum wage if hourly wage is calculated on a 30-hour week) or a tertiary qualification was completed.

This analysis suggests, as shown in figure 5, that having at least two years' work experience between ages 16 and 25 may reduce the likelihood of being in limited employment at age 26 more than having one or more years of tertiary education during those ages. Being engaged in tertiary education for at least three to four years during this age period also significantly reduces the likelihood, particularly if the engagement is at Level 3 or higher.

As Figure 5 shows, there were some young people who had never been employed or in tertiary education from ages 16 to 25. These are shown in Figure 5 as people with zero years of engagement in work and tertiary education. About six percent of the cohort had no employment from ages 16 to 25 and 19 percent had no tertiary enrolment.⁸

Of the six percent of young people in the cohort who had no employment from ages 16 to 25, almost all of them (91 percent) were in limited employment at age 26. Having just one year of work experience reduced the proportion of young people who were in limited employment at age 26 to about 62 percent. The proportion of young people in limited employment at age 26 declined to 41 percent for people with two years' work experience and plateaued at three to five years. As the number of years worked increased beyond six years, the proportion of people in limited employment declined gradually; from 29 percent for people with seven years of work experience to about 15 percent for people with 10 years of work experience.

Of the 19 percent of young people in the cohort who had no tertiary education from ages 16 to 25, 40 percent were in limited employment at age 26. About 37 percent of young people with only one year of tertiary education by age 25 were in limited employment at age 26. This is not a big difference from having no years in tertiary education. However, as the years spent in tertiary education increased to around four years, the proportion of young people in limited employment reduced to 22 percent for any tertiary education and 17 percent for tertiary education at Level 3 or above. While these results show that the proportions of young people in limited employment are lower for educational activities compared to work activities, engaging for longer (four years or

⁸ People can legally leave school at age 16 in New Zealand. This analysis picks up from age 16 and shows that some people do not have further involvement in tertiary education after leaving school.

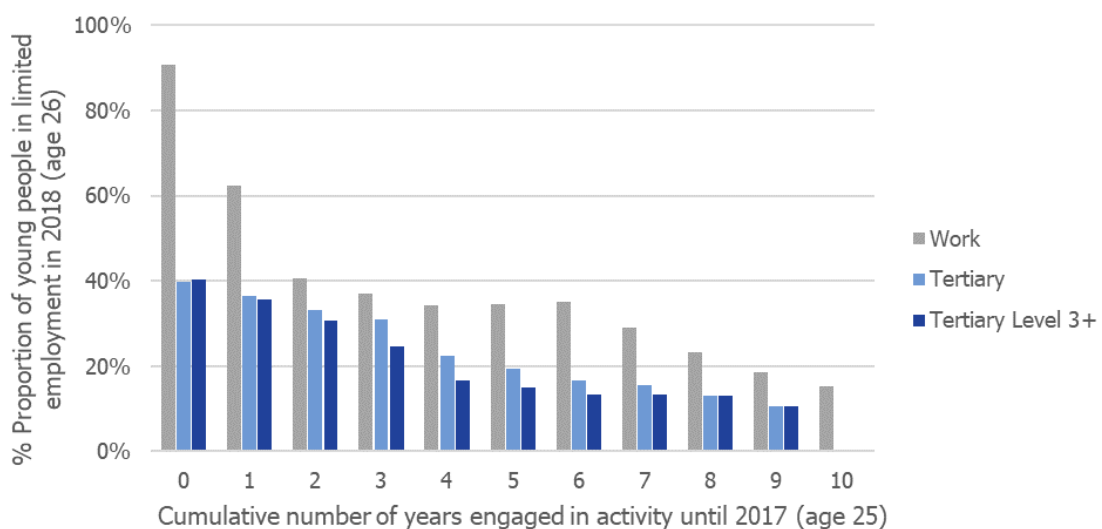
more) in tertiary education, and particularly at Level 3 and above, does reduce the likelihood of being in limited employment at age 26.

While Figure 5 may suggest that outcomes for people with *any* tertiary education and those with Level 3 or above qualifications are not very different, there is a substantial difference when comparing limited employment for young people who cumulatively had three or more years of tertiary education. Cumulatively to age 25, limited employment rates for people who engaged in tertiary Level 3 or above for three to five years were substantially lower than for people who engaged in *any* tertiary education for the same years.

However, outcomes converged for any tertiary and Level 3 and above tertiary education when the cumulative number of years of engagement went beyond eight years. There were no differences in the proportion of people in limited employment who had engaged in tertiary and tertiary Level 3 and above for eight or more years by age 25. Nearly all the people who engaged in tertiary education for this length of time would have had at least one year of enrolment at Level 3 and above.

Figure 5:

The proportion of people in limited employment at age 26 by their cumulative number of years in work and tertiary education from ages 16 to 25



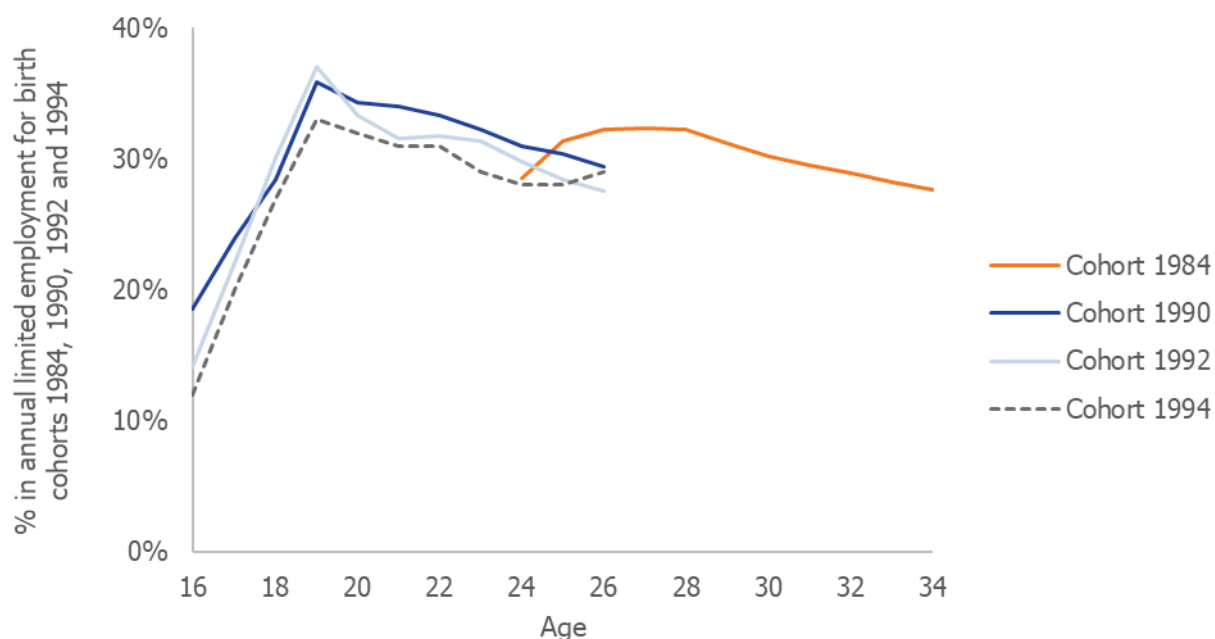
4 COMPARING LIMITED EMPLOYMENT RATES ACROSS BIRTH COHORTS

We were interested in establishing whether limited employment rates varied across different birth cohorts. The analysis in the previous section has just looked at the 1992 birth cohort, who turned 16 in 2008 and 24 in 2016. It is possible that the patterns could be specific to that cohort. For robustness, the analysis was extended to look at limited employment at ages 16 to 26 in other birth cohorts. We found that the rates were very similar.

Figure 6 shows the proportion of people in limited employment in each year from ages 16 to 26 for birth cohorts 1990, 1992 and 1994, and from ages 24 to 34 for the 1984 birth cohort.⁹ It shows that there were no major differences in the proportions of people in limited employment by age from 16 to 26. The proportion of people in limited employment peaked at age 19 for birth cohorts 1990 and 1994, as established for cohort 1992, and then sat at around 28 to 30 percent up to age 26.

The 1984 birth cohort provides information on limited employment rates from ages 24 to 34. It shows that limited employment persists in adulthood, in the range of about 28 to 30 percent each year.

Figure 6:
Annual limited employment rates by age for the 1984, 1990, 1992 and 1994 birth cohorts



Limited employment rates for the 1984 birth cohort at ages 24 to 26 were higher compared to the other three cohorts shown in Figure 6. The period when the 1984 cohort was aged 24 to 26 was

⁹ For the 1984 cohort, analysis could only observe outcomes at ages 24 to 34 due to limited data coverage of ages 16 to 23 for older birth cohorts in the IDI.

also the period of the global financial crisis in 2008/09, which may explain the higher rates of limited employment.

We looked further at the main activity during the year for people aged 24 to 26 across the four birth cohorts. The proportion of people who were not in any employment or education was slightly higher for the 1984 cohort, at 23 to 25 percent, while for the other cohorts this proportion ranged between 19 and 20 percent. The proportion of people in substantial employment for the 1984 cohort at ages 24 to 26 was lower, at 44 percent for all three years, while for the other three cohorts these proportions ranged between 50 and 54 percent.

5 PATHWAYS IN AND OUT OF LIMITED EMPLOYMENT

The previous sections looked at the total number of young people in limited employment at each age. However, individuals move in and out of limited employment. This section looks at the extent to which young people stayed in or out of limited employment between ages 16 and 26 or moved between the two states. The Sankey diagrams in this section show people's limited employment status across two-year age periods for ages 16 to 26 and the proportions of people moving between statuses.

People who were in limited employment for both years at each two-year age period were more likely to remain in this status in the following age period. Similarly, people who were not in limited employment for both years of each age period were more likely to remain in that status in the following age period.

There are also sizeable proportions of people who moved in and out of being in limited employment between each age period. The proportion of people moving out of one year of limited employment is about three times larger than the proportion of people moving out of two years of limited employment.

Pathways for young people who were in limited employment at age 17, and Māori young people were also explored.

5.1 Pathways for all people in the 1992 birth cohort

Limited employment pathways are complex as each person's journey is unique. Table 1 introduces a simplified way of looking at limited employment patterns for the 1992 cohort. The table looks at people in each age period from 16 to 26 and shows the proportions who were in limited employment for zero to all years during each period. The first column shows that between the ages of 16 to 18, 65 percent of young people had no limited employment and nine percent were in limited employment for all three years.

Across the age periods, 55 to 65 percent of the cohort were not in limited employment at all. In addition, about 20 to 23 percent were in limited employment for both years in each two-year age period.

Table 1:
Summary of years in limited employment by age period for all young people in the 1992 birth cohort

Years in limited employment	Percentage in limited employment by age periods				
	16-18	19-20	21-22	23-24	25-26
0	65	55	60	62	64
1	17	22	19	18	16
2	9	23	21	20	20
3	9	-	-	-	-
Total	100	100	100	100	100

However, this table does not show the complete pattern of how people move in and out of limited employment. For example, Table 1 does not show where the 65 percent of people who were not in limited employment at ages 16 to 18 went to in subsequent age periods.

To get a sense of what the pathways look like, a Sankey diagram showing the five age periods was created. Figure 7 shows the proportions in Table 1 and the pathways people follow from one age period to the next.

In the diagram, the nodes show the number of years spent in limited employment in each age period. Blue nodes at the top show people who were not in limited employment at each age period. The orange nodes in the middle show people who were in limited employment at each age period for one year, and red nodes at the bottom show people who were in limited employment for both years in each age period. In the 16 to 18 age period being in limited employment for two or three years is shown in red as well.

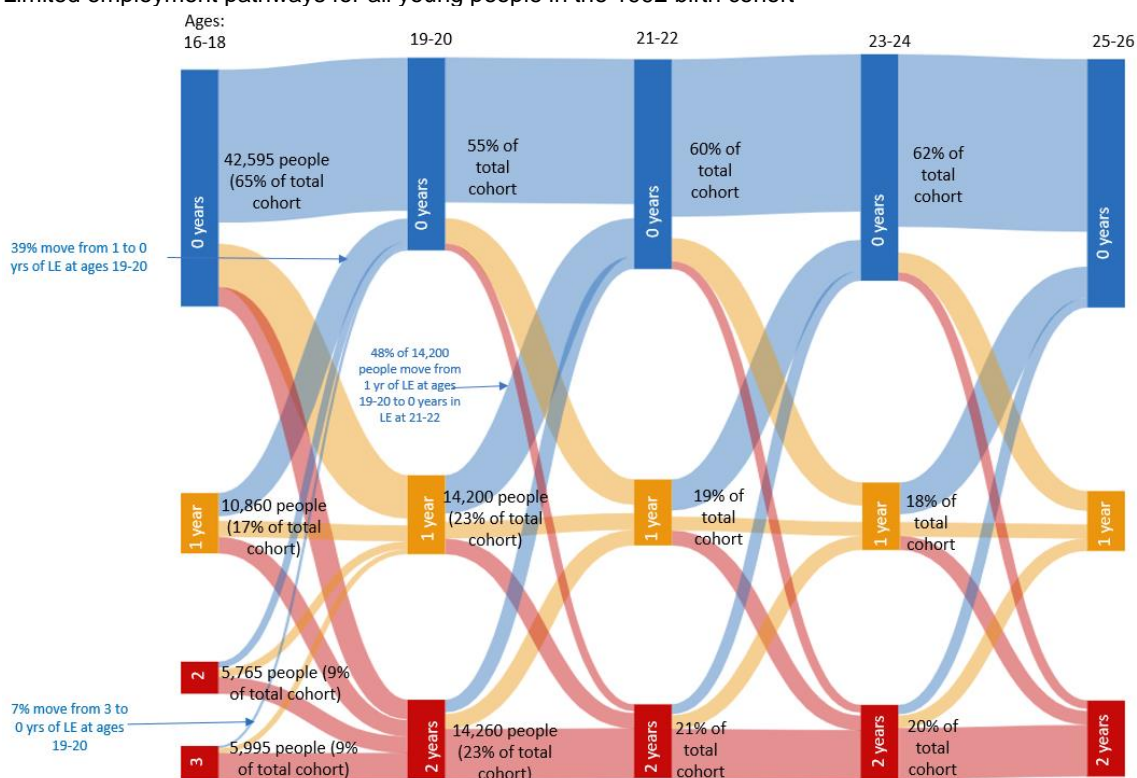
From each node there are pathway flows that are colour-coded to reflect each flow's status in the next age period.¹⁰ The height of each node and width of each flow corresponds to the number of people in them.

The nodes include everyone who had a limited employment status at each of the age periods, including people who were moving in and out of the country between periods. For this reason, the diagram does not show exactly the same group of people moving in and out of limited employment across the five age periods, as some entered New Zealand somewhere between ages 16 to 26, while others went overseas.

¹⁰ The pathway flows show target status, so a person moving from zero years of limited employment to one year of limited employment will move from a blue node with an orange flow to an orange node. A person moving from two years of being in limited employment into not being in limited employment will move from a red node with a blue flow to a blue node.

Figure 7:

Limited employment pathways for all young people in the 1992 birth cohort



Note: LE = limited employment; yrs = years

Key to read Figure 7:

Nodes		Flows
	0 years in limited employment	Moving into 0 years of limited employment
	1 year in limited employment	Moving into 1 year of limited employment
	2 years in limited employment	Moving into 2 years of limited employment

The pathways in Figure 7 show that in each age period most people in the cohort experienced no limited employment. However, there were sizeable proportions of people who started off with no limited employment status but entered limited employment in later years. There were smaller numbers of people who were in limited employment for all of each age period and then moved out of limited employment in later years. As the number of years spent in limited employment in each age period increased, the proportion of people who moved out of limited employment in the next age period decreased.

Of the 65 percent of young people aged 16 to 18 who had no limited employment (top blue node), at ages 19 to 20:

- 65 percent continued to have no limited employment
- 18 percent had one year of limited employment
- eight percent had two years of limited employment
- nine percent were overseas.

Of the 17 percent of young people aged 16 to 18 who were in limited employment for only one year (middle orange node), at ages 19 to 20:

- 39 percent had no limited employment
- 27 percent had one year of limited employment
- 27 percent had two years of limited employment
- seven percent went overseas.

Of the nine percent of young people who were in limited employment for two of the three years at the 16 to 18 age period (second to bottom red node), at ages 19 to 20:

- 20 percent had no limited employment
- 24 percent had one year of limited employment
- 52 percent had two years of limited employment
- four percent went overseas.

Of the nine percent of young people who were in limited employment for all three years at age 16 to 18 (bottom red node), at ages 19 to 20:

- seven percent had no limited employment
- 15 percent had one year of limited employment
- 78 percent had two years of limited employment
- less than 0.1 percent went overseas.

At the 19 to 20 age period, pathway flows show both where young people were in the previous age period and where they went in the next age group.

To show how transitions are intermingled across age periods, we can look at the young people who were in limited employment for one year at the 19 to 20 age period (shown as the 14,200 people in Figure 7). Looking backwards, at ages 16 to 18:

- 55 percent were not in limited employment
- 21 percent were in limited employment for one year
- 10 percent were in limited employment for two years
- six percent were in limited employment for three years
- eight percent were overseas at ages 16 to 18 and moved into one year of being in limited employment at ages 19 to 20.

Looking forward at the 21 to 22 age period, these same young people with one year of limited employment at age 19 to 20:

- 48 percent moved out of limited employment for both years
- 21 percent experienced one of the two years in limited employment
- 20 percent moved into two years of limited employment
- 11 percent went overseas.

A similar analysis for young people who were in limited employment for both years at the 19 to 20 age period (shown as 14,260 people in figure 7) shows that quite a sizeable proportion had not been in limited employment in the prior age period. Looking back to their limited employment statuses in the prior age period (16 to 18 age period):

- 25 percent of this group moved from not being in limited employment
- 21 percent were in one year of limited employment
- 21 percent were in two years of limited employment

- 33 percent were in three years of limited employment
- about one percent came in from overseas.

Looking forward, at the 21 to 22 age period these young people who were in limited employment for both years at age period 19 to 20:

- 16 percent moved out of limited employment
- 20 percent moved into one year of limited employment
- 63 percent remained in limited employment for all the years at the 20 to 21 age period
- two percent moved overseas.

The pathway diagram shows that there were young people who were in limited employment for all years at the 16 to 18 age period who moved out of limited employment at the 19 to 20 age period. There were also some young people who were seemingly doing well at ages 16 to 18 (because they were not in limited employment) who then moved into longer periods of limited employment in subsequent years. This shows that looking at young people in limited employment at a single point in time can be misleading. Some of the people in limited employment at a specific time will not continue to be in limited employment, while some of those who are not in limited employment may be in the future. Looking at the movement of young people in and out of limited employment over time provides a more accurate picture.

5.2 Pathways for young people in limited employment at age 17

Table 2 and Figure 8 highlight the pathways for people who were in limited employment at age 17. These young people were not in school at that age, were not enrolled in tertiary study at Level 3 or higher and were not in substantive employment. They are shown as a subset of the total cohort, which is shown in the light grey pathways in Figure 8.

Table 2:

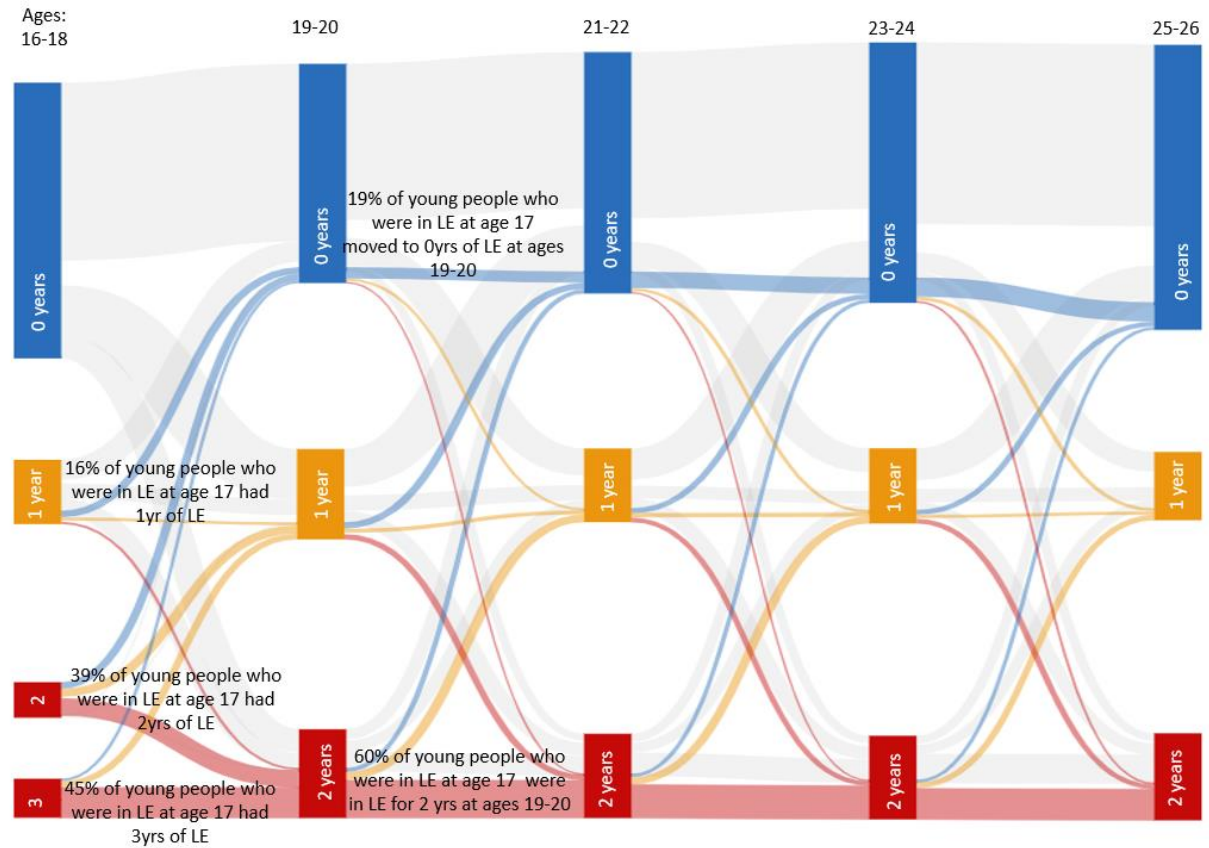
Summary of years in limited employment by age period for young people who were in limited employment at age 17 (1992 birth cohort)

Years in limited employment	Percentage in limited employment by age periods				
	16-18	19-20	21-22	23-24	25-26
0	0	19	27	32	35
1	16	21	18	17	16
2	39	60	55	51	49
3	45	-	-	-	-
Total	100	100	100	100	100

Young people who were in limited employment at age 17 predominantly continued to be in long-term limited employment at later ages, as shown by thicker flows in the bottom panel of the pathway graph from one age period to the next. At each age period, starting from ages 19 to 20, about 60 percent of people who were in limited employment at 17 remained in that same status. Compared to everyone in the cohort in Figure 7, a smaller proportion of young people who were in limited employment at age 17 were able to move out of limited employment. For example, at the 23 to 24 age period about seven percent of the people in limited employment for both years moved out of limited employment at ages 25 to 26 (of those who were in limited employment at age 17), compared to about 13 percent of everyone in the 1992 cohort who made the same

transition. This suggests that being in limited employment at age 17, which is effectively the same as leaving school early, signals a higher likelihood in later life of remaining in limited employment.

Figure 8:
Limited employment pathways for young people in limited employment at age 17



Note: LE = limited employment; yrs = years

Key to read Figure 8:

Nodes		Flows	
	0 years in limited employment		Moving into 0 years of limited employment
	1 year in limited employment		Moving into 1 year of limited employment
	2 years in limited employment		Moving into 2 years of limited employment
	everyone in the cohort who was not in limited employment at 17 years		

5.3 Pathways for Māori in the 1992 birth cohort

Table 3 shows the percentages of Māori in limited employment in each age period. Compared with the total cohort (in Table 1), Māori were less likely to have no limited employment and more likely to be in limited employment for all years of each age period. For example, 47 percent of Māori were not in limited employment at ages 19 to 20 compared to 65 percent of the total cohort (in Table 1). Similarly, 34 percent of Māori were in limited employment for two years at the 23 to 24 age period, compared to 20 percent of the total cohort.

Table 3:

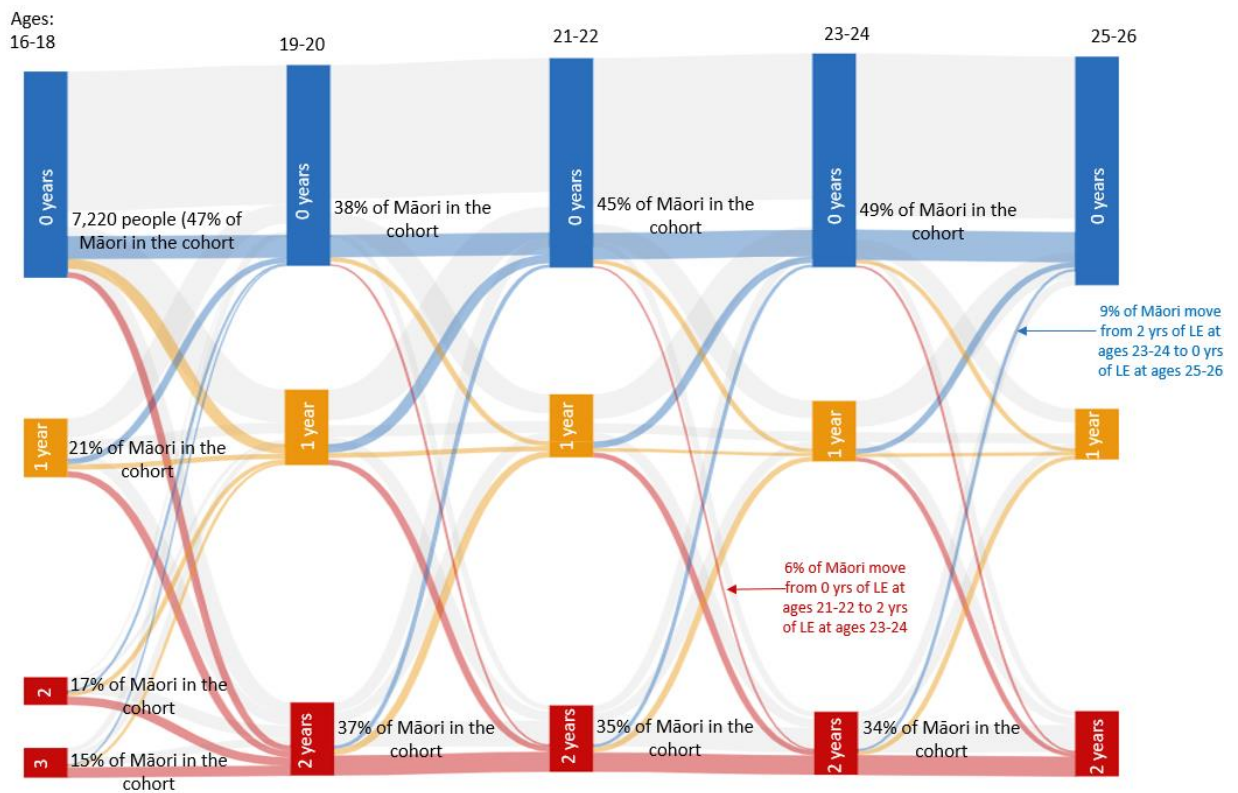
Summary of years in limited employment by age period for Māori in the 1992 birth cohort

Years in limited employment	Percentage in limited employment by age periods				
	16-18	19-20	21-22	23-24	25-26
0	47	38	45	49	52
1	21	26	20	17	14
2	17	37	35	34	34
3	15	-	-	-	
Total	100	100	100	100	100

Figure 9 shows pathways for Māori, as a subset of all young people. It shows that Māori young people face greater barriers moving out of limited employment. About nine percent of Māori who were in limited employment for all the two years at ages 23 and 24 moved to not being in limited employment at ages 25 to 26, compared with 13 percent of the total cohort. For Māori, only six percent of this group had not been in limited employment in the previous age period, compared to 10 percent for the total cohort.

These findings suggest that compared to everyone in the cohort, once Māori young people were in limited employment, they were more likely to remain in this status. However, if Māori young people were not in limited employment, they were more likely to remain out of limited employment than other young people.

Figure 9: Limited employment pathways for young Māori



Note: LE = limited employment; yrs = years

Key to read Figure 9:

Nodes		Flows	
	0 years in limited employment		Moving into 0 years of limited employment
	1 year in limited employment		Moving into 1 year of limited employment
	2 years in limited employment		Moving into 2 years of limited employment
	everyone in the cohort who is not Māori		

6 INTENSITY OF LIMITED EMPLOYMENT FROM AGES 16 TO 24

The pathway graphs in Figures 7 to 9 show that a sizeable proportion of young people spent both years in limited employment in each two-year age period. It also shows that substantial proportions of young people moved in and out of this status between age periods. This section looks at how many young people spent all or most of the years from ages 16 to 24 in limited employment.

In this section, we count the total number of years spent in limited employment from ages 16 to 24 and focus on two major groups:

- people who were **always in limited employment** from ages 16 to 24, and
- people who were **mostly in limited employment** in these ages.

The “always in limited employment” group includes people in limited employment for all years from ages 16 to 24. This group also includes people who came into New Zealand at some point between ages 16 and 24 who were identified as being in limited employment for all years they were in the country. For example, a young person who migrated to New Zealand at age 20 and spent all years from ages 20 to 24 in limited employment is identified as always in limited employment. Similarly, a young person who was in New Zealand from ages 16 to 18, who then went overseas for some years and returned, but was in limited employment for every year they were in New Zealand would be in this group.

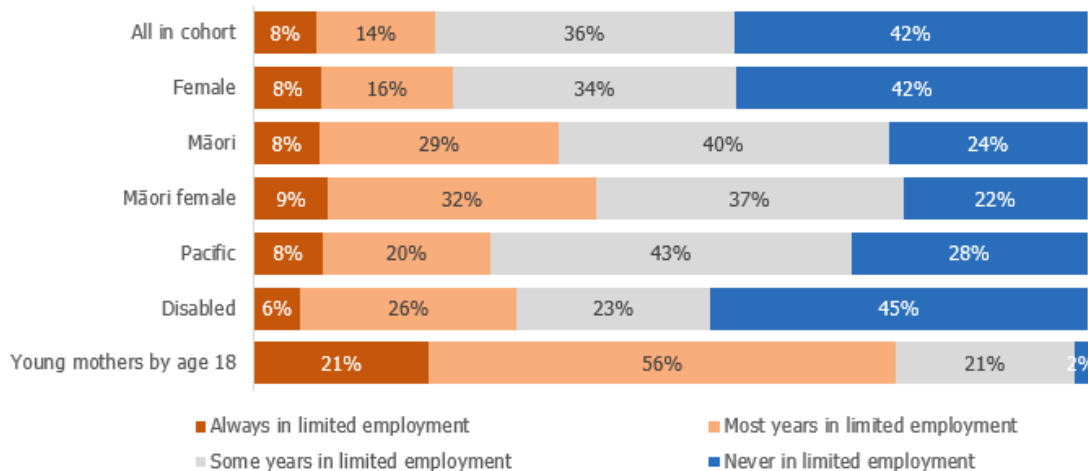
The “mostly in limited employment” group identifies people who were not “always in limited employment” but who spent more than half the time they were in New Zealand in the 16 to 24 age period in limited employment.

These two groups of young people who spent more than half the years during the ages 16 to 24 in limited employment (that is, **always** and **mostly** in limited employment) are jointly referred to as being in **high-intensity limited employment** in this analysis.

Figure 10 shows the intensity of limited employment from ages 16 to 24 for different population groups.

Figure 10:

Limited employment intensity from ages 16 to 24 for different population groups (1994 birth cohort)



In the 1994 birth cohort there were 5,840 young people who were always in limited employment and 10,970 young people who were in limited employment for most (but not all) years from ages 16 to 24. This represents eight percent and 14 percent of the total cohort respectively.

Pacific and Māori young people had higher levels of limited employment compared to everyone in the cohort, particularly those who were mostly in limited employment. Twenty-nine percent of Māori and 20 percent of Pacific people were mostly in limited employment compared to 14 percent of the total cohort.

Young people identified as disabled in the 2018 Census¹¹ also experienced higher levels of limited employment. This also shows up in the higher proportion who were mostly in limited employment. Twenty-six percent of disabled people were mostly in limited employment compared to 14 percent of the total cohort. About 45 percent of disabled people were never in limited employment, which is similar to the total cohort. An important caveat to interpreting these results is that disability for the 1994 cohort was identified at age 24, and not everyone in this group would have experienced disability at younger ages.

Young mothers were predominantly in high-intensity limited employment compared to other population groups (21 percent were always in limited employment and 56 percent were mostly in limited employment).¹² This will in part be due to caring responsibilities limiting their access to education and employment.

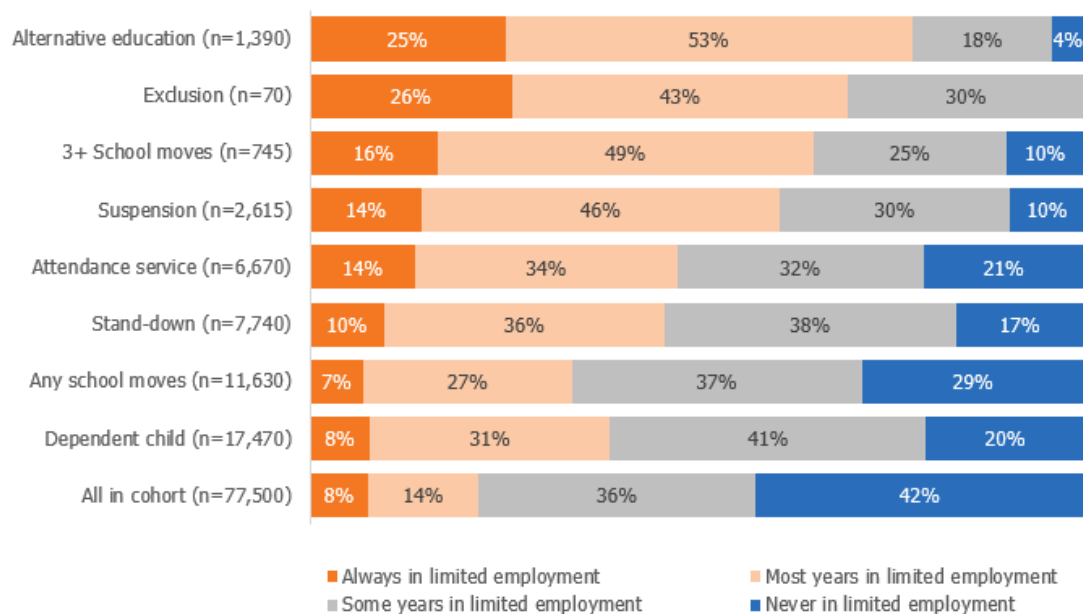
¹¹ The 2018 Census was used to identify young people in the 1994 cohort who self-identified as experiencing a lot of activity difficulty in one or more of six activities i.e., communicating, hearing, remembering, seeing, walking, and washing in the Census 2018. This represented around two percent of the total cohort.

¹² There were about 1,480 females who were mothers by age 18 out of about 36,700 females in the 1994 birth cohort. Of these, about 320 were always in limited employment.

Further analysis shows that higher rates of intensity of limited employment may also be connected to unequal experiences of the education system combined with social and economic disadvantage. Figure 11 highlights some of the factors that can be measured within the IDI by age 15.

Figure 11:

Limited employment intensity from ages 16 to 24 by school engagement and other factors (1994 birth cohort)



Note: School moves exclude the expected moves between schools that occur at the beginning of the year and between different school types, such as the move from an intermediate to a secondary school. 'Dependent child' refers to being a dependent child of a person who is on a benefit.

As shown in Figure 11, young people who attended alternative education were more likely to be in high-intensity limited employment. A small proportion of the people who attended alternative education (about four percent) were never in limited employment.

Disengagement from school is also associated with higher rates of intense limited employment. In the IDI data, disengagement is indicated by stand-downs, suspensions and exclusions, and engagement with attendance services, as well as moving schools at least three times.

Very few students were excluded from school. For the 1994 cohort, of the 70 children who had been excluded, almost all of them experienced being in limited employment to some extent, with about 69 percent experiencing high-intensity limited employment.

Parents' experience of limited employment also has an effect for young people. In the IDI, this relationship can be indicated by being a dependent child of a parent on a benefit for more than half of their childhood from birth to 18 years. This is also associated with a greater chance of being in high-intensity limited employment from ages 16 to 24 than for the total cohort. It illustrates the intergenerational dimensions of the issue.

7 THE KEY FACTORS ASSOCIATED WITH HIGH-INTENSITY LIMITED EMPLOYMENT

This section looks further at the factors which are associated with the experience of high-intensity limited employment and considers the combined relationships of these factors.

The analysis shows that factors we know are associated with social and economic disadvantage and inequality are also associated with high-intensity limited employment. Many of these factors relate to the ongoing failure of the education system to support equitable outcomes for all learners.

Different factors can occur at different life stages. Determining which factors may be most influential is challenging as the timing of the factors needs to be considered. A staged series of regression models were undertaken to look at how these factors built up over time. The models began with just ethnicity and gender, and then expanded to include socio-economic factors, family background and life experiences, disability, school engagement and educational attainment.

These factors were examined up to age 15 and then up to age 18 to assess how the effect of these factors changed as young people got older.¹³ The initial models looked at the relationship with gender and ethnicity on their own. Additional models adding in other life and school engagement factors were then executed.

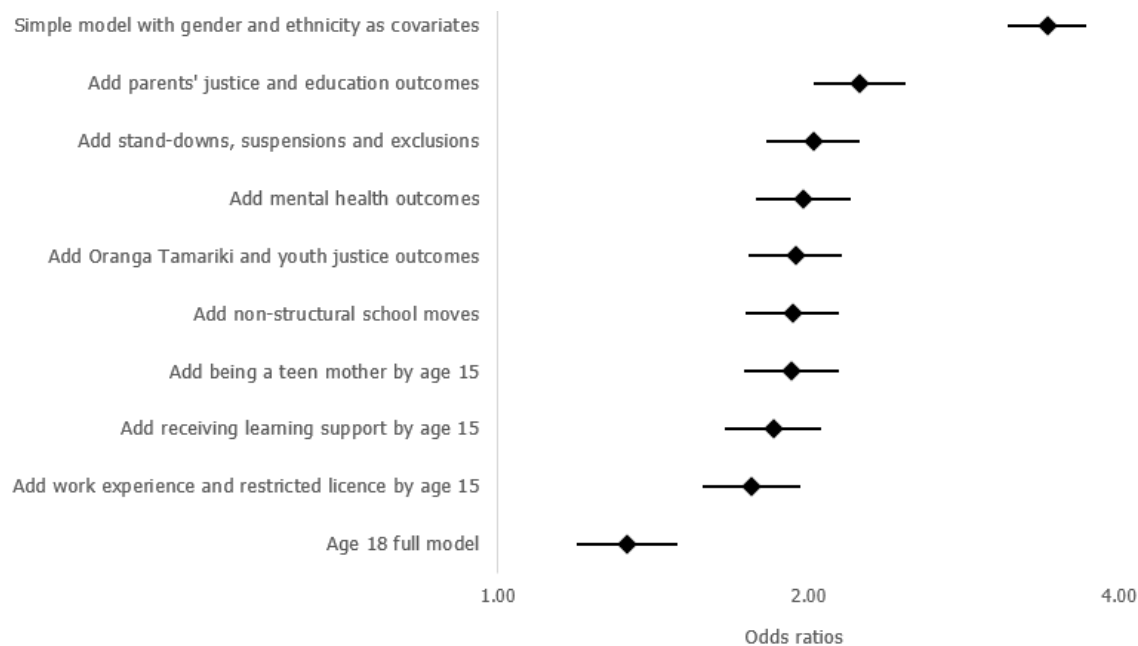
Figure 12 illustrates that the higher rates of limited employment for Māori young people can be explained to some extent by the indicators of social and economic disadvantage experienced by Māori whānau. It shows how the odds of always being in limited employment when one is Māori compared to being Pākehā changed as other factors were adjusted for in the models.

At age 15, a Māori young person had about 3.5 times the odds of always being in limited employment compared to a Pākehā young person. However, the odds reduced as other factors were considered. Once all the factors in the models are controlled for, the odds reduce to 1.3 times as at age 18.

¹³ Analysis tried to examine early life experiences before age 15 and we determined that there weren't many factors known about young people before age 15 except for parents' characteristics, ethnicity and gender. These factors were associated with limited employment but ultimately when ranking factors by effect sizes from the largest to the smallest, these factors had smaller effect sizes compared to other factors estimated at ages 15 and 18.

Figure 12

Changes to the odds of always being in limited employment for Māori after controlling for family, school, and other factors



Note: Parents' factors include parents' educational and justice sector involvement. Structural school moves are defined as expected moves between schools that occur at the beginning of the year and between different school types, such as the move from an intermediate to a secondary school. 'Non-structural' moves are any other moves between schools.

Figure 12 shows that the odds of always being in limited employment for Māori were 2.2 times higher than for Pākehā who have a similar parental background. The full model controls for differences in school factors such as stand-downs and suspensions, using mental health services, learning support engagement and work experience by age 15. Once these are controlled for, the odds of always being in limited employment when one is Māori reduced to about 1.8 times. This means that a Māori young person still has nearly double the chance of being in high-intensity limited employment than a Pākehā young person, having taken account of the same set of family, life, and school experiences.

In the age 18 model we also controlled for attaining NCEA Level 2 or higher. Even when school qualifications were controlled for, being Māori was associated with 1.3 times the odds of always being in limited employment compared to being Pākehā. This means that a Māori young person still has a higher chance of always being in limited employment compared with a Pākehā young person with the same level of school qualifications, and the same set of family, life, and other school experiences. It suggests that Māori young people face barriers to additional employment and further education and training over and above those considered in the model.

Two variations of the age 15 and age 18 models were executed. One looked at factors associated with always being in limited employment and the second at factors associated with being in high-intensity limited employment (total of always and mostly in limited employment). From these models we can identify factors that are persistently high and significant.

Across these models, the influence of each factor by ages 15 and 18 changed. For example, being referred to and receiving attendance services by age 15 had 2.2 times the odds of always being in limited employment, compared to 2.3 times by age 18. However, the odds were lower at

1.4 and 1.3 times respectively when looking at models that associated this factor with being in high-intensity limited employment (always and mostly in limited employment).

Table 4 shows a summary of the factors that were most associated with spending all or most years in limited employment at ages 16 to 24 for the 1994 cohort. By far the biggest factor for being in high-intensity limited employment is not attaining at least NCEA Level 2. Not gaining at least NCEA Level 2 by age 18 is associated with 4.1 times the odds of always being in limited employment and about 22 times the odds of being in high-intensity limited employment.¹⁴

Young women who had a child prior to age 19 were five times more likely to experience high-intensity limited employment than other young people. Young people who had not attained a driver licence by age 18 were more than three times as likely than those who did have a driver licence to be in high-intensity limited employment.

Other factors highlighted intergenerational dimensions, such as parents not having any educational qualifications, spending most years as a child with parents on a benefit, living in high deprivation areas and disruptions in family life leading to Oranga Tamariki notifications.

Mental health and substance abuse, and involvement with the justice system by ages 15 and 18, were also associated with high-intensity limited employment.

A full list of results showing all the factors, their effect sizes and significance in predicting high-intensity limited employment is in Appendix B.¹⁵ The models measuring high-intensity limited employment were much better in explaining variation in limited employment compared to those measuring always being in limited employment, possibly because the sample sizes in high-intensity models were much larger.¹⁶ Similarly, models at age 18 were better at explaining differences in limited employment than at age 15.

¹⁴ The odds of always being in limited employment when one has not attained at least NCEA level 2 by age 18 are very high, as seen by the high odds ratio. People who were always in limited employment every year from ages 16 to 24 were not in school at ages 16 to 17 (if they were in New Zealand) which means their chances of obtaining NCEA level 2 were much smaller. Some could have attained it through Level 1 or 2 tertiary study in those years.

¹⁵ The Table in Appendix 1 shows models explaining high-intensity limited employment and always in limited employment (across ages 16 to 24) as explained by outcomes by ages 15 and 18.

¹⁶ R-squared for high intensity model by age 15 was 19% and 27% by age 18. For always in limited employment models the r-squared was 5% by age 15 and 11% by age 18. R-squared is a statistical measure that indicates how much variation in limited employment intensity is explained by the variations in all factors that were considered in each model.

Table 4:

A summary of prior life experiences most associated with spending all or most years in limited employment at ages 16 to 24 (1994 cohort).

Prior life experiences most associated with spending all or most years in limited employment at ages 16 to 24

Young people who have spent more than half their lives aged 16 to 24 in limited employment are much more likely to:

- have been a mother prior to age 18
- have left school with either no school qualification or NCEA Level 1 only
- have no driver's licence by age 18
- have been involved in the justice system by age 18
- have used mental health services by age 18
- have been the subject of a notification to Child Youth and Family / Oranga Tamariki as a child
- have spent time in an alternative education setting (alternative education or an activity centre)
- have lived in a socio-economically disadvantaged neighbourhood
- have parents with no or low educational qualifications
- have been a dependent child of a beneficiary for more than half of their life to age 15
- have been stood down, suspended or excluded from school, or referred to a school attendance service
- have ever lived in social housing by age 18
- have been the child of a teen mother
- have had at least one unstructured school move (i.e., beyond primary to intermediate or to secondary)

Factors are listed in descending order from highest to lowest odds of spending more than half their years in limited employment at ages 16 to 24.

8 THE RELATIONSHIP BETWEEN EARLY AND LATER LIFE LIMITED EMPLOYMENT

This analysis has shown that limited employment starts at age 16 and persists well into adulthood. The question of how related early-life limited employment is with later-in-life limited employment was explored by looking at an older birth cohort that allows analysis into limited employment for people in their late twenties to early thirties.

This relationship can shed light on age-specific interventions for limited employment. For example, if we found that people who experienced limited employment in earlier life were also in limited employment in later life, then this would suggest that intervening earlier could possibly reduce the chances of being in limited employment in later life. On the other hand, if we find that people identified as being in limited employment in later life were not in limited employment in early life, this suggests that there are factors in later life (that are not present in early life) that drive limited employment.

To determine the relationship between limited employment in earlier years and later years, the 1984 birth cohort from the ages 20 to 34 was examined. We looked at limited employment at ages 20 to 24 and at ages 25 to 34.

Table 5

The relationship between early-life and later-life limited employment for the 1984 birth cohort

Intensity of limited employment at ages 20 to 24	Percentage in limited employment at ages 25 to 34				Total
	Always in limited employment	Mostly in limited employment	Some limited employment	Never in limited employment	
Always in limited employment	42	26	26	6	100
Mostly in limited employment	23	32	34	12	100
Some limited employment	8	16	41	35	100
Never in limited employment	2	5	33	60	100

Note: These figures are restricted to people who were in New Zealand in both age periods.

Overall, this analysis shows that there is a strong relationship between early-life and later-life limited employment.

Table 5 shows that 42 percent of young people who were always in limited employment at ages 20 to 24 were also always in limited employment at ages 25 to 34. In addition, 26 percent were mostly in limited employment, 26 percent had some limited employment and six percent had no limited employment between ages 25 and 34. This suggests that once young people are in limited employment in earlier years (ages 20 to 24) there is a high chance that they will be in limited employment in later life (at ages 25 to 34). Similar patterns were observed for young people who were mostly in limited employment in earlier years.

Most young people who were never in limited employment at ages 20 to 24 experienced little to no limited employment in later life. About seven percent of people who were not in limited employment at ages 20 to 24 were in high-intensity limited employment in later life.

9 REFERENCES

McGirr, M. & Earle, D. (2019) Not just about NEETS: A rapid review of evidence on what works for youth at risk of limited employment, Te Tāhuhu o te Mātauranga
Available at: <https://www.educationcounts.govt.nz/publications/80898/not-just-about-neets>

APPENDIX A EXAMPLES TO ILLUSTRATE THE DIFFERENCES BETWEEN NEET AND LIMITED EMPLOYMENT

1. Person A is a Level 3 or higher tertiary student who does not have a job. They complete one course at the end of one year and enrol in another one at the start of the next academic year. During the summer break they are NEET (since they are temporarily not participating in work or study), but they are not in limited employment (since the break is temporary – across each of the years they are sufficiently engaged in study).
2. Person B is consistently employed at the minimum wage for 20 hours per week. This person is not NEET (since they are working) but they are in limited employment (since they are not working for a substantive wage). Someone who is in full-time tertiary study for a Level 1 or 2 certificate is also in limited employment. They are not in school and not NEET but are in foundation education that focuses on letting people catch up on what they missed in school.
3. Person C achieved highly in school and has a lot of social and economic resources. They have been accepted into university but take a gap year where they travel the country and take some part-time, casual employment. They are temporarily experiencing limited employment but are not likely to remain in limited employment for longer periods of time since they have many resources to lead them into a rewarding career pathway.
4. Person D comes from a single parent family with not many economic resources growing up. They leave school at 16 and get an apprenticeship. They train as a builder and continue consistent employment at a substantive wage into their 20s. This person has characteristics that could increase their likelihood of being in limited employment (because of family circumstances) but does not experience limited employment.

APPENDIX B THE FULL LIST OF FACTORS ASSOCIATED WITH LONG PERIODS OF LIMITED EMPLOYMENT

Model factor: If this happens by age x (Sorted on spending half of the time in limited employment at age 18)	Then compared with someone who	Your odds of spending more than half your life (including always being) in limited employment between 16 and 24				Your odds of being always in limited employment between 16 and 24			
		When age x was 15		When age x was 18		When age x was 15		When age x was 18	
		Odds	Sig.	Odds	Sig.	Odds	Sig.	Odds	Sig.
Was a teen mother by age x	was not a teen mother	3.26	Yes	5.09	Yes	2.21	Yes	2.04	Yes
Has not attained NCEA 2 or higher by age x	has attained NCEA 2			4.09	Yes			22.4	Yes
Holds no licence at age x	holds a full licence			3.34	Yes			2.24	Yes
Holds no licence at age x	holds a restricted licence	2.29	Yes	2.07	Yes	2.82	Yes	2.29	Yes
Been involved in the justice system by age x	was never involved in justice system	1.75	Yes	1.85	Yes	1.52	Yes	1.17	Yes
Involvement with mental health services by age x	was never involved with mental health services	1.83	Yes	1.85	Yes	1.51	Yes	1.30	Yes
Female	was Male	1.61	Yes	1.78	Yes	1.45	Yes	1.46	Yes
Enrolment in alternative education or activity centre up to the age of x	was never in alternative education or activity centre	2.04	Yes	1.77	Yes	1.86	Yes	1.61	Yes
Have been placed in care following Oranga Tamariki notification and investigation by age x	was never placed in care	1.56	Yes	1.59	Yes	0.97	No	1.15	No
Lived in an area with NZ Deprivation Index =10 (most deprived)	lived in an area with NZ Deprivation Index =1 (1=least deprived, 10=most deprived)	1.72	Yes	1.49	Yes	1.37	Yes	1.27	No
Has ever done some paid work by age x	never did paid work	1.29	Yes	1.47	Yes	1.54	Yes	2.56	Yes
Parent 2 has no qualification	Parent 2's highest tertiary qualification was a Level 5-7 diploma	1.85	Yes	1.45	Yes	1.54	No	1.21	No
Has had a notification to Child, Youth and Family (CYF) / Oranga Tamariki (OT) by age x	never had a notification to CYF/OT	1.63	Yes	1.42	Yes	1.35	Yes	1.10	No
Parent 1 has no qualification	Parent 1's highest tertiary qualification was a degree	1.90	Yes	1.41	Yes	1.17	No	0.74	No
More than half your life up to the age of x as named dependant of a beneficiary.	spent less than half life spent on benefit	1.62	Yes	1.41	Yes	1.22	Yes	0.95	No
Parent 1 has no qualification	Parent 1's highest tertiary qualification was a Level 5-7 diploma	1.87	Yes	1.38	Yes	1.97	Yes	1.23	No
Holds no license at age x	holds a learner's license	2.00	Yes	1.37	Yes	1.94	Yes	1.34	Yes
Māori	was Pākehā	1.61	Yes	1.36	Yes	1.76	Yes	1.34	Yes

Model factor: If this happens by age x (Sorted on spending half of the time in limited employment at age 18)	Then compared with someone who	Your odds of spending more than half your life (including always being) in limited employment between 16 and 24				Your odds of being always in limited employment between 16 and 24			
		When age x was 15		When age x was 18		When age x was 15		When age x was 18	
		Odds	Sig.	Odds	Sig.	Odds	Sig.	Odds	Sig.
Ever suspended from school up to the age of x	was never suspended	1.66	Yes	1.30	Yes	1.30	Yes	1.12	No
Lived in an area with NZ Deprivation Index =10 (most deprived)	lived in an area with NZ Deprivation Index =2 (1=least deprived, 10=most deprived)	1.39	Yes	1.26	Yes	1.10	Yes	1.14	No
Ever referred to an attendance service up to the age of x	was never referred to an attendance service	1.41	Yes	1.26	Yes	2.33	Yes	2.22	Yes
Parent 2 has no qualification	Parent 2's highest tertiary qualification was a degree	1.71	Yes	1.21	No	1.26	No	0.71	No
Ever stood down from school up to age of x	was never stood down	1.63	Yes	1.18	Yes	1.15	Yes	0.79	Yes
Is disabled (Has a functional limitation of 3 or 4 on Census 18 question)	was not disabled	1.60	Yes	1.16	No	1.14	No	0.75	No
Has ever lived in social housing up to the age of x	was never in social housing	1.19	Yes	1.15	Yes	1.11	No	0.96	No
Other than Pākehā, Māori, Pacific, Asian, Asian or MELAA ethnicity	was Pākehā	1.13	No	1.14	No	1.06	No	1.12	No
Lived in an area with NZ Deprivation Index =10 (most deprived)	lived in an area with NZ Deprivation Index =4 (1=least deprived, 10=most deprived)	1.20	Yes	1.14	Yes	0.93	Yes	1.25	Yes
Lived in an area with NZ Deprivation Index =10 (most deprived)	lived in an area with NZ Deprivation Index =3 (1=least deprived, 10=most deprived)	1.17	Yes	1.12	Yes	1.33	No	0.99	No
Have had a CYF finding of abuse in relation to them by age x	never had a CYF finding of abuse	1.12	Yes	1.08	No	1.14	No	1.02	No
Mother was a mother by age 18	was not a child of a teen mother	1.17	Yes	1.08	No	1.33	Yes	1.31	Yes
Parent 2 has no qualification	Parent 2's highest tertiary qualification was a school qualification or Level 1-3 tertiary certificate	1.29	Yes	1.08	Yes	1.43	Yes	1.12	No
Parent 1 has no qualification	Parent 1's highest tertiary qualification was a school qualification or Level 1-3 tertiary certificate	1.24	Yes	1.04	No	1.48	Yes	1.21	Yes
Lived in an area with NZ Deprivation Index =10 (most deprived)	lived in an area with NZ Deprivation Index =5 (1=least deprived, 10=most deprived)	1.07	No	1.03	No	1.08	No	0.91	No
Model fit statistics	R-squared	19%		27%		5%		11%	
	Max-rescaled R-square	31%		43%		19%		39%	
	C-statistic	81%		87%		82%		92%	

Note: Highlighted odds ratios indicate top factors associated with long periods of limited employment across all models. "Sig" = Yes indicates factors that have significant association with limited employment intensity.



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