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Who are the persistently NEET young people?

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INFORMING POLICY AND PRACTICE
IN AUSTRALIA'S TRAINING SYSTEM

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About the research

Who are the persistently NEET young people?

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Of enduring policy interest and concern are the transitions of young people from school to further education and the labour market. Young people represent the future workforce of this country so it is of great interest that young people make successful transitions. However, they do not all make these successful transitions and for some this may result in poorer outcomes later in life.

Using data from the Longitudinal Surveys of Australian Youth (LSAY), this investigation focussed on the group of young people not in education, employment or training (NEET), which is seen as a key indicator internationally of youth disengagement — and more specifically on those people who are NEET for longer periods of time, six or more months continuously, referred to as persistently NEET. While many young people experience episodes of being NEET in their early post-schooling years as they make their transition from education to the world of work, there is a small, more vulnerable group who experience periods of being persistently NEET.

It is argued that this group may represent those who are more at risk of poorer outcomes in the longer term than those who spend fleeting amounts of time being NEET; recognising that even within the more contained group of the persistently NEET there will be some who are not as vulnerable. Clearer information on this group of young people can help to develop nuanced policy responses that cater for the diverse individual and also broader labour market and institutional circumstances facing them. There is a need to better characterise this vulnerable group of young people in order to help target early and effective policy interventions.

This research investigates the incidence of being persistently NEET among those aged 15—24, the socio-demographic characteristics associated with the NEET state, and the outcomes at ages 20—24 for those who had one or more periods of being persistently NEET from ages 15 through to 19, as compared to their not persistently NEET counterparts.

Key messages

- Persistently NEET status is shown to be correlated with non-completion of year 12; having a child; and to some degree coming from a more disadvantaged background.

- There are some observed gender differences in the activities of the persistently NEET with males being more likely than females to be unemployed.

- The largest single activity for females with persistently NEET status and not in the labour force, was home duties or caring for children, whereas for males there was a variety of activities.

- Persistent NEET status at ages 15—19 is associated with further persistent NEET spells at ages 20—24. It is also associated with poorer education outcomes by age 24.

- Labour market conditions at the time that young people are transitioning from school to work can also impact on the probability of being persistent NEET. There is evidence that the Global Financial Crisis had an impact but differentially for those who were 18 at the time the effects were felt and those who were 21 at the time. This reflects their different underlying life stage dynamics.

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Executive summary

The journey of young people immediately post-secondary schooling is of significant interest for policy makers, the wider community and students and their parents. While it is commonly accepted that many young people may experience a short period of not being in education, employment or training (NEET) as a normal part of their transition from school to work and/or further education, of more concern are those individuals who experience 6 or more months of NEET continuously and are considered in this report as persistently NEET.

This group of persistently NEET young people are seen as being at risk of not making successful transitions to the labour market and having poorer employment and other outcomes later on. As a consequence, understanding the underpinning reasons that contribute to individuals being persistently NEET and the potential long term impacts are of significant interest as governments strive to develop and implement informed policy and programs that can support young people to prepare for life post-school.

This report provides a greater level of insight into the issues that contribute to persistently NEET with a focus on young people aged between 15 and 24.

The research explores:

- what socio-demographic characteristics are associated with being persistently NEET?
- what are the activities of the persistently NEET group of young people?
- what are the outcomes of those who have a persistently NEET period(s) at ages 15 through to 19 in terms of likelihood of:
    - persistently NEET period(s) between the ages of 20 and 24
    - studying for or completing a certificate III or above qualification by age 24
    - being employed at age 24?

The Longitudinal Surveys of Australian Youth (LSAY) survey students aged 15—25 as they transition from school to work. LSAY provides significant and nationally representative information about young people and their education, training, work, financial matters, health, social activities, and related issues. For this research, data were analysed for two cohorts of LSAY: 15 year olds who began the survey in 2003 and 15 year olds who began in 2006 (known as the Y03 and Y06 cohorts respectively). However, due to data availability for the Y06 cohort at the time of the analysis, only the first ten sample years were analysed; that is, when the cohorts were approximately 24 years of age. Furthermore, limitations to the data limit the generalisability of the results for this study, but nevertheless provide useful insights.

The size and socio-demographic characteristics of the group

In considering the extent of being persistently NEET across all the survey months, 6.7% of the Y03 cohort and 11.7% of the Y06 cohort had a persistently NEET period(s) (including those that dropped out of the survey at some point). There were clearly higher proportions of the survey sample that experienced a persistently NEET period(s) in the Y06 cohort as compared to the Y03 cohort with a proportional 5% increase in the Y06 cohort.

When the analysis focussed on a more restricted period of time, when survey respondents were aged 15 through to 19 ('early' NEET), the same trend in persistently NEET period(s) is apparent: 1.8% of the Y03 cohort and 6.5% of the Y06 cohort.

For participants who stayed throughout the duration of the survey, there were even higher proportions that had a persistently NEET period(s) at any time — 10.7% for the Y03 cohort and 17.1% for the Y06 cohort.

There could be a range of reasons contributing to the increase in persistently NEET across the two cohorts. However, other research (Carcillo et al, 2015) has indicated that there was an increase in NEET in OECD countries following the Global Financial Crisis (GFC), and there is a high likelihood that the GFC is a high contributing factor to the observed increase in persistent NEET in the Y06 cohort.

The key socio-demographic characteristics identified from the samples that were clearly associated with being persistently NEET included:

- not completing year 12

- having children

- to some degree, coming from a more disadvantaged background.

The main socio-demographic characteristics can be used as predictors when examining longer term outcomes. The analysis indicates that the characteristics hold true across both the Y03 and Y06 cohorts and also whether individuals had a persistently NEET period at any time during the survey or at ages 15 through to 19 (the early persistently NEET group). In addition, the socio-demographic distributions of those who were persistently NEET in the Y03 cohort were more skewed, in comparison to the Y06 cohort, towards the lowest index of economic, social and cultural status (ESCS) quartile, non-completion of year 12 schooling (particularly for the early persistently NEET), having children, being female and coming from a regional location. This is a possible effect of the GFC whereby it has affected young people who were aged 18, and at a critical period in their transition from school to work or further study, more evenly.

The main activities of the persistently NEET group

Information on activities for those not in the labour force and those who were unemployed was collected at the time of LSAY interviews. Analysis affords insight into the types of activities being undertaken by the persistently NEET group and provides a further dimension to the exploration of the socio-demographic characteristics. In considering the

Y03 and Y06 cohorts, the main activities for those who were persistently NEET can be summarised as follows:

- Females were most likely to be undertaking home duties or caring for children and this formed the largest single component of activities for females.

- Males were observed to undertake a variety of activities including home duties or looking after children, travel or holiday, illness or inability to work, and other — the single largest category for males.

- Other covered a variety of activities that were stated by both males and females and included working to help family (unpaid), volunteering, informal study, caring (other than for children), waiting to start a course or job, and not doing any particular activity.

The research shows that persistently NEET males were much more likely than females to be unemployed as opposed to not in the labour force, even more so for the Y03 than Y06 cohort. Looking at the year on year activity for the persistently NEET group for both cohorts, there were clear increases in unemployment for both sexes in 2009. For females, there was an increase in undertaking home duties and caring for children that was identified in 2009, at which point the participants in the Y03 cohort were about 21 years old and the participants in Y06 cohort about 18 years old. This may also be an indicator point of the possible impact of the GFC of 2008; the follow-on effects of which were felt in 2009.

Longer term outcomes of those who have persistently NEET period at ages 15–19

In considering the longer term impacts of persistently NEET young people, we considered the ages 20 through to 24 for those participants who had a persistently NEET period(s) during the ages of 15 through to 19. In comparison to their not persistently NEET counterparts, these young people were:

- more likely to have a persistently NEET period at ages 20—24, in fact analysis indicated that it was 3 times more likely for the Y03 cohort and 5.4 times more likely for the Y06 cohorts

- less likely to be studying for, or to have achieved a certificate III or higher level qualification by age 24 for both cohorts

- less likely to be employed at age 24 for the Y06 cohort only (although no evidence was available for the Y03 cohort).

What does the analysis tell us?

The analysis in this research has highlighted that the persistently NEET group is diverse, fluctuates in size — which can be a response to external economic conditions — and that there are various underlying reasons for individuals experiencing persistently NEET periods. While it is not implicit that all young people who are persistently NEET are vulnerable, there seems to be a higher likelihood that could be the case than those young

people who have less than six months of continuous NEET. These may include those of the group who have not completed year 12 schooling and those who have children under the age of 20 (which may be not in the labour force or unemployed). There are others in this group that warrant attention including those who are disengaged (which is difficult to separate out from our analyses), and some of those who are unavailable for work.

In terms of the role of Vocational Education and Training, it can provide an important pathway for some persistently NEET young people to gain further skills in addition to other community support to enable them in gaining meaningful and long-term employment and/or training.

Introduction

A key indicator of youth disengagement internationally is the status 'not in education, employment or training' (NEET), an indicator also of considerable interest from a policy perspective. Young people in this group are often considered an 'at risk' group, the argument being that they are less likely to possess the skills and experience for a successful future transition into employment and further education, and are more likely to have poorer employment and other outcomes later in life. Consequently, various policy responses have been developed for this group of young people, with the aim of enabling them to re-establish contact with education and training and the labour market.

As a group, however, young people who are NEET at a point in time are characterised by a very broad range of circumstances and cannot be considered a homogenous group. Indeed, it is quite normal for young people to be NEET at some period during their transition from education into the labour market. This could include a period of unemployment between finishing education and starting a job, taking time off to travel (for example, a gap year), spending time volunteering instead of working for pay, or undertaking unpaid caring duties. Many of these young people are NEET for only short periods of time and are generally not at risk.

Other young people, however, are NEET for longer periods of time, and included in this group are those who are likely to be at risk and facing long-term disadvantage. There is value, then, in looking at those who face being NEET for longer periods of time, or what can be termed, 'persistently NEET'. For the purposes of this paper, 'persistently NEET' is defined as being NEET for a period of six consecutive months or longer.

This paper also has a particular interest in those who are persistently NEET at some stage during the ages of 15—19, as these young people are more likely to be vulnerable. We are also interested in the changing labour market conditions of young people (such as the effect of the Global Financial Crisis [GFC]) and examine two cohorts of young people three years apart.

The questions examined in this research are:

- what socio-demographic characteristics are associated with being persistently NEET?

- what are the activities of the persistently NEET group of young people?

- what are the outcomes of those who have a persistently NEET period(s) at ages 15—19 in terms of their likelihood of:

  – experiencing persistently NEET period(s) between the ages of 20 and 24 years

  – studying for or completing a certificate III or above qualification by age 24 years

  – being employed at age 24 years?

The Longitudinal Surveys of Australian Youth (LSAY), which follow young people aged 15—25[1], are used as the primary source of data for this paper. Two cohorts of LSAY were used

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1   Although for this paper the analyses are conducted until they were 24 years of age.

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for the analyses: 15-year-olds who began the survey in 2003 and 15-year-olds who began in 2006 (known as the Y03 and Y06 cohorts respectively).

The paper is structured as follows. The next section provides an overview of the research on young people who are NEET. Following this is an explanation of the main methodological approach for this paper. The next section looks at the main findings from the analysis. The paper finishes with some concluding observations.

Literature overview

This section highlights some of the main themes identified from previous research in this area to inform the current study. A more comprehensive overview can be found in the support document.

Over the last two decades, identifying NEET young people has become one of the key indicators for youth, the concept originating in the United Kingdom due to changes to the unemployment benefit scheme in 1988 (Furlong 2006).

There is considerable discussion about the merits of the term 'NEET' in relation to its usefulness as an indicator. In a summary of the various arguments, Furlong (2006) identifies the strengths and weaknesses of using the term as an indicator. While the strength is that NEET can be used as a predictor of future vulnerability (even though it may contain many who are not really vulnerable), a core weakness is that it might not capture the target group and so is of limited usefulness in terms of cohort-specific policy. For example, there are many young people in uncertain or precarious employment situations who may also have low levels of educational achievement. These young people are vulnerable but not classified as being NEET. In contrast, there are those classified as NEET who may be undertaking meaningful activities. Anlezark (2011b) indicates that such young people could be stigmatised by the term.

Variations in definitions of the term are to be found across countries. Elder (2015) provides excerpts from ten definitions of the term NEET from various sources, all of which differ on some detail.

Following on from this, the group of NEET young people is heterogeneous. It is heterogeneous in terms of some being not in the labour force (NILF) and some being unemployed. Some within the NILF category are undertaking a variety of activities such as caring, travelling or volunteering, while some may be ill or have a disability. Hence the circumstances of young people within this categorisation can be quite different and, as highlighted above, some are more vulnerable than others. An alternative approach to viewing the heterogeneity of the group is achieved by examining the socio-demographic characteristics of the young people more likely to be NEET, such as early school leavers, and those who had children at a young age.[2] Taking account of the heterogeneity of the group is important in terms of formulating targeted policy responses.

Most data on NEET young people are presented as 'snapshot' figures; that is, they are taken at a point in time and do not reflect the length of time a person has held NEET status. However, many of those who hold this status do so for a short period of time; it is quite normal for young people to have some period of NEET (Quintini, Martin & Martin 2007). It can therefore be argued that looking at longer periods of NEET can be more useful, given that those who are NEET for longer are more likely to be vulnerable (see, for example, Bynner & Parsons 2002; Furlong 2006). In addition, the New Zealand Ministry of Business, Innovation and Employment (2013) in a study of that country found that the 12—

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2   To clarify for the purposes of the remainder of the report, what we mean is they became parents at an
     early age, as opposed to had children living with them.

14% of 18 to 24-year-olds in their sample who experienced a long-term NEET period in a given year represented more than 70% of all NEET days for their age group. Accordingly, attention to this group is seen as warranted.

Long-term NEET can be defined various ways — there is no one 'correct way'. However, Furlong (2006) in his study used six or more months continuously NEET, with the rationale that this is the qualifying time for 18-year-olds in the UK's 'New Deal for Young People' program and may indicate difficulties. The New Zealand Ministry of Business, Innovation and Employment (2013) used the same qualifying period: 26 weeks (or six months) continuously NEET in their study. This paper adopts the same approach — six or more consecutive months as NEET — as the definition of persistently NEET. More detail on the selection of the figure of six or more consecutive months in our study is presented in appendix A.

Some studies, mainly overseas, have looked at the long-term NEET group, and these studies are described in the support document. While these studies used different definitions of what constitutes long-term NEET, as well as looking at it across different age and time periods, all of them found a sub-group of young people in their samples who experienced periods of being long-term NEET. Several of these studies also examined the socio-demographic characteristics of those who were long-term NEET, the most common characteristic identified being low educational achievement/early school leaving (for example, Social Exclusion Unit, 1999; Bynner & Parsons, 2002; OECD, 2016). In some studies, however, socio-economic disadvantage was also found to be associated with long-term NEET (Social Exclusion Unit, 1999; Furlong, 2006; New Zealand Ministry of Business, Innovation & Employment, 2013), as were low levels of parental education (OECD, 2016), being a parent, including teenage parenting (Ranzani & Rosati, 2013; New Zealand Ministry of Business, Innovation & Employment, 2013) and being female (OECD, 2016).

Some of these studies examined the outcomes of those long-term NEET (by comparison with their non-long-term NEET counterparts). These found that those who were long-term NEET were also more likely to be NEET later on and have poorer employment outcomes at some designated time in the future (Crawford, 2011; Ranzani & Rosati, 2013; New Zealand Ministry of Business, Innovation & Employment, 2013; Samoilenko & Carter, 2015). A couple of the studies additionally looked at further study outcomes. While one of these (New Zealand Ministry of Business, Innovation & Employment, 2013) found poorer outcomes for the long-term NEET group in terms of further study, the other (Samoilenko & Carter, 2015) found no difference between the two groups. This study also found that the long-term NEET group was more likely to be in receipt of benefits in the future. However, these two studies also found some convergence in outcomes between the NEET and non-NEET groups at a later time. Those who were NEET while young (at ages 15—17) seemed to be most at risk of poor outcomes.

It is important to note that the size and nature of the NEET group needs to be examined in the context of the young person's broader circumstances. These include labour market and economic conditions and the country's education system, as well as a variety of other factors, including the absolute size of the youth cohort.

While noting that a variety of factors affect the size and composition of the group, one of the important factors of relevance to this study was the 2008 GFC. While its effects in Australia were less substantial than in some other countries (see, for example, Carcillo et

al. 2015), there nevertheless were effects in terms of decreases in full-time employment and increases in unemployment. This is particularly so for young people aged 15—24 years. The GFC also affected the size of the NEET groups. In addition to an increase in the number unemployed, there was also an increase in those not in the labour force (or inactive). Carvalho (2015) also notes that within the overall group of young people, the 15—19 and 20—24 years age groups should be viewed differently in terms of labour market dynamics and life stages (moving from full-time education and training to work), and so require different policy responses.

A review of the literature indicates that the examination of the group of young people who are NEET for longer periods of time is warranted. Little empirical research has been undertaken in this area in Australia (apart from Hillman 2005 and OECD 2016, for example). The current study, therefore, uses LSAY data to investigate the incidence, socio-demographic characteristics, activities and outcomes of those who are NEET for six or more consecutive months (referred to in this paper as 'persistently NEET').

Data and methodology

This section discusses the data used for the analysis in this report, including the derivation of persistently NEET, as well as the methods used for the analysis.

Data source

LSAY datasets (specifically the 2003 and 2006 cohorts, known as Y03 and Y06 respectively) were used to undertake the analysis. LSAY surveys nationally representative cohorts of young people from ages 15 through to 25 years, with interviews taking place annually. (The collection of information at these points is known as a wave, so, for example, the collection of data in the second year of the survey is known as wave 2.) Since 2003, the samples for LSAY have been based on the sample for the Programme for International Student Assessment (PISA). The PISA sample has certain exclusions, which include 15-year-olds who are home-schooled or are between schools, in a non-educational institution, have a disability that prevents them completing the test, left school prior to the age of 15, have low English language ability, and are in very remote areas not easily accessed. Similarly, these people are excluded from LSAY.

LSAY covers a large range of topics, including schooling, post-school education and training, and transitions into the labour market, as well as aspirations, satisfaction with various aspects of life and the young person's personal circumstances.

The analysis in this paper examines persistently NEET up to wave 10, when respondents were aged about 24 years. The final wave of data for Y06, when the young person would be aged about 25 years, was not available at the time of the analysis for this report. For consistency therefore the same range is used for the Y03 cohort. The analysis of persistently NEET begins from January of the year for wave 2 of the survey (when most respondents were aged 16 years), since by definition no one in the sample was NEET at the time of wave 1 of the survey (as they were all at school). However, for the purposes of this paper it is still relevant to refer to the 15 to 19-years age category (rather than the 16 to 19-years age category). In addition, not all respondents are exactly the same age at each wave but most respondents were aged 15 years in wave 1, 16 in wave 2 and so forth.

Definition and derivation of persistently NEET

For this project, six or more months of consecutive NEET is used as the definition of persistently NEET.[3] The rationale for using this particular definition of persistently NEET is contained in appendix A.

In describing the sample in the findings section of this paper, we quantify those who were never NEET (including those not known to be NEET) during the sample period (and so 'engaged'[4] in every month of the survey), as well as those who were NEET on some

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3   This six month or longer block does not have to encompass the interview point in LSAY.
4   Engaged participants are those who undertake some formal education or training, or who work for pay (that is, are employed). This education, training or employment does not need to be full-time. That is,

occasion (that is, NEET for at least one month during the survey period; this would also include the group of young people who are persistently NEET).

However, in the analysis for this report we focus on those who were persistently NEET compared with those who were not persistently NEET (everyone else in the sample who was not known to be persistently NEET). Those who were not persistently NEET serve as a control group in some of the analyses undertaken for this paper. While ideally it would have been useful to compare three groups (those who were never NEET, those who had some NEET periods but not a persistently NEET period(s), and those who were persistently NEET), the numbers of month-by-month missing data meant this would have been difficult to achieve. Hence, we used a conservative approach by focusing on those we definitely knew were persistently NEET, by comparison with the rest.

However, we do consider three groups of those who were persistently NEET in our analysis. They are those who were persistently NEET at any time during the survey period, those who were persistently NEET at a period(s) between ages 15—19, and those persistently NEET at a period(s) between ages 20—24 years. It is worth noting that the 15—19 and 20—24 age distinctions are based on wave rather than actual age, but most people in the cohort were at the same age in each wave.

Derivation of the persistently NEETs

Figure 1 provides a simple representation of the factors considered in the derivation of NEET status for any given month.

Figure 1   Factors considered in the derivation of the NEET status
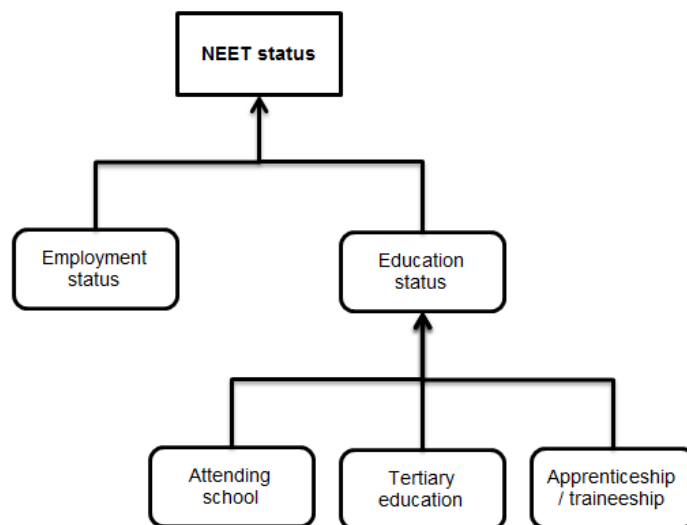
LSAY does not have a readily easy-to-use month-by-month calendar of activities, which meant that this information had to be derived using information available in the dataset.

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participants who undertake any employment or education, regardless of how little in a month, will be considered 'engaged'.

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So, for example, while month-by-month employment variables were available, only start and end dates were available for information on education.[5]

We have used a conservative approach to our derivation of NEET, that is, only those who could be definitely identified as being NEET for any given month were classified as NEET. Those for whom there was insufficient information to identify their NEET or otherwise status were classified as not NEET for that month. Those who were categorised as NEET for six or more consecutive months formed the persistently NEET group.

Because of this conservative derivation, the not NEET and not persistently NEET groups are in fact the not known to be NEET and not known to be persistently NEET groups. However, throughout the report, for ease of expression, they will be referred to as the not NEET and not persistently NEET group.

The way the 15—19 years and 20—24 years persistently NEET groups were constructed means there is some overlapping of a persistently NEET period across the two age ranges for some individuals. Some individuals therefore may have been classified as persistently NEET between the ages of 15 and 19 as well as between the ages of 20 and 24 on the basis of one six-month period; that is, the six-month block of persistently NEET crosses from the 15—19 to the 20—24 years age distinctions. This is estimated to be a relatively small number of individuals and is likely to have had a small impact on effect sizes. There is, however, no clear way of dealing with these cases.

The persistently NEET spells are censored at the upper boundary of the survey period. This means that there may be young people who began a persistently NEET period in less than six months before the end of the survey period and so would not be counted as persistently NEET. In this sense there would also be some underestimation of persistently NEET numbers.

Analysis for this paper

Much of the focus of the analysis in this report is on those who were persistently NEET between the ages of 15 to 19 years, also referred to in the report as early persistently NEET. The reason for this focus is that the 15 to 19-years age group is particularly critical in terms of learning for the world of work and also, for many, labour market entry. Additionally, we have the advantage in LSAY of partitioning the cohort into the two equidistant age groups: when they were aged 15—19, and when they were aged 20—24. As noted, the analysis compares two cohorts of LSAY: Y03 and Y06.

The analytical approaches adopted for this study are now described.

Frequency distributions were used to describe the composition of the sample and also the socio-demographic characteristics of the samples of interest. The frequency distributions were based on a nationally representative starting sample of 15-year-olds and provide insight into the occurrence of persistently NEET periods and the characteristics of those affected.

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5   The months covered by the survey were January 2004—February 2013 for the Y03 cohort, and January 2007—February 2016 for the Y06 cohort.

Frequency distributions were also used to describe the activities of those who were persistently NEET at the time of interview (with information on activities only being collected at the interview point, not on a month-by-month basis). To reiterate, this means that activities were not captured for all those persistently NEET in the sample.

Chi-squared tests of independence were conducted to test for statistical differences (at $p<.01$) across the various socio-demographic characteristics between the persistently NEET group and their non-persistently NEET counterparts (the control group in our analysis). The Cramer's V effect size statistic is used in this analysis to understand whether the significant difference is meaningful. That is, it is an indicator of the size of the difference and takes into account sample size. As a guide, an effect size of $V = 0.1$ is small; 0.3 is moderate; and 0.5 is large. Under 0.1 the effect is very small.

Logistic regression models were used for the remainder of the analysis. The benefit of this type of analysis is that it allows for an assessment of the 'main' effect of a variable independently of all the other variables under consideration. These models also have the advantage of allowing us to make 'causal' claims where events are ordered (for example, having children before a persistently NEET period).

The logistic regression models were firstly used to examine the socio-demographic characteristics associated with the persistently NEET status (both being persistently NEET at any time during the survey and early persistently NEET).

Secondly, the models were used to predict the likelihood of various outcomes occurring between the ages of 20 and 24 for those who had a persistently NEET period(s) between the ages of 15 and 19 (compared with their non-persistently NEET counterparts — the control group).[6] In particular:

- the likelihood of one or more persistently NEET periods between the ages of 20 and 24

- whether they were studying towards or obtained a certificate III or higher-level[7] qualification by the final wave in our sample[8]

- whether they were in employment in the final wave of the survey (at about age 24).

Only those young people who were present in the final wave of the survey were used for the models, with the exception of the model examining the characteristics associated with early persistently NEET, which included young people present up to wave 5 of the surveys. This is because we needed information on these individuals from the final wave in the survey for our outcome measures. For the analysis of socio-demographic characteristics for the early NEET group, those still present in wave 5 was used since this is when the early persistently NEET period ends. In all of the models, a $p<.01$ value is used to denote significance.

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6   These are similar in vein to outcomes considered in some other studies on long-term NEET, such as NZ Ministry of Business, Innovation and Employment (2013) and Samoilenko & Carter (2015).

7   Note that certificate I to advanced diploma level courses are delivered by the vocational education and training sector, while diplomas and degrees are delivered by the higher education sector (with diplomas being delivered by both sectors). Certificate III and above is often used in benchmark reporting for educational attainment for the Australian population (see, for example, COAG 2009).

8   There are some who could have potentially completed a certificate III or higher-level qualification before becoming persistently NEET between the ages of 15 and 19.

For our models the following socio-demographic characteristics were used:

- Sex

- Indigenous status

- The PISA index of economic, social and cultural status (ESCS)

- Geographic location[9]

- Home language (either speak English at home or speak a language other than English)

- Completed Year 12[10] (the final year of schooling in Australia)

- Whether they had become parents between the ages of 15 and 19, or 15 and 24 depending on the particular analyses.

Other variables that have been included in previous studies but not included in our models include parental education and disability status. The highest level of education of the student's parent is a component of the ESCS measure used in our analyses so it was decided not to include parental education separately. Disability was not included for a variety of reasons, such as young people with learning and intellectual disabilities being excluded from PISA and hence the LSAY sample, as well as other technical difficulties in constructing a robust variable for this paper.

Data considerations and limitations

There are several considerations and limitations regarding the data in our sample of interest. Some of the main ones are listed here.

Weighting

The LSAY data were not weighted for the analyses in this report. LSAY produces weights for each year; however, the analyses in this report combine data across months and therefore years, so use of year-by-year weights is not appropriate. It is not clear what type of weights should be applied for this type of analysis: they would need to be constructed specifically for this project and there would need to be several assumptions made in producing a weighting methodology for these analyses.

Hence, the analyses pertain only to the LSAY samples and are not generalisable to the Australian population of 15 to 24-year-olds, although, having said that, the initial sample of 15-year-olds was representative of the Australian population. The analyses nevertheless provide useful insights.

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9   This refers to the location of the participant's PISA school, not their residential address, and remains unchanged from PISA (in wave 1). Also, note that, for this variable, unknowns are included as metropolitan region.

10 The vocational equivalent of Year 12 (for example, the completion of a certificate II or III outside school) is not included as part of this variable.

Attrition

A logistic regression was conducted on the socio-demographic characteristics used in our analyses (including being ever NEET or persistently NEET) to predict completion of the wave 10 survey. This was conducted to see how representative the wave 10 sample was by comparison with the initial sample. More detailed information on the attrition analysis is shown in appendix B. In summary, the significant predictors of non-completion of the survey were being of Indigenous status, not completing Year 12 and being in the bottom three ESCS quartiles. Having children was associated with a decreased likelihood of non-completion, as was being NEET for at least one month across the survey period. For the Y03 cohort only, females were more likely to not complete the survey than males.

Being ever NEET, Year 12 completion and having children are not time-bound within the survey period; that is, there is an opportunity to gain these characteristics across the survey period, so these need to be taken into account when interpreting the results of the attrition analysis for these characteristics, although Year 12 completion for the vast majority would occur by age 19. Nevertheless, in terms of the analyses in this report, there needs to be some caution in interpreting the results for the variables associated with attrition. Note also that systematic attrition in some of these variables is likely to underestimate the true extent of persistently NEET.

Reporting of logistic regression results using odds ratios

Odds ratios are used to report the results of the logistic regressions rather than predicted probabilities. Predicted probabilities, as the name suggests, predict the likelihood of an event occurring. They require, however, the defining of a 'typical' case in the model. However, the more variables in the model, and the more categories within variables (for example, ESCS is reported in quartiles), the less representative of the sample the typical case becomes.

The odds ratios used in the report are interpreted as follows. It is the probability of the outcome being the same for two categories within a variable. If the odds ratio is one (1), then the probability is the same for both categories. An odds ratio of greater than one (1) for a category means that the outcome is more likely to occur for that category, relative to the reference category. An odds ratio of less than one (1) means that it is less likely to occur, relative to the chosen reference category.

An advantage of odds ratios is that — unlike predicted probabilities — they reflect the effect of a variable as independent from all other variables in the model. The main disadvantage of odds ratios is that a large odds ratio does not necessarily imply that the probability of the outcome is high. For example, an odds ratio may indicate that one group is at a tenfold higher risk of an outcome than another group, without either outcome being especially likely (for example, 1% vs 0.1%). The results from the logistic regressions should therefore be interpreted with caution, even when effects are significant.

Findings

This section presents the main findings of the analyses outlined in the methodology. The findings make a comparison between the Y03 and Y06 cohorts, to take some account of the different labour market and educational policy circumstances between the two cohorts.

Composition of the sample

We firstly examine the composition of the samples in terms of the size of the various NEET groups, the average time spent in the NEET state, and the socio-demographic characteristics across the two cohorts.

Size of the NEET groups

To set the scene for the analysis that follows, table 1 shows the size of the various groups in the two cohorts, according to whether they were never NEET[11], ever NEET (including those who were persistently NEET), or persistently NEET, regardless of whether they dropped out of the survey at some point or not, and also for those who were still present when the final wave of the survey of our sample was completed. This information is presented for the whole sample and also for when the cohort was aged between 15 and 19. It needs to be re-emphasised that the never NEET group includes those not known to be NEET (that is, there was no NEET status for all the months for which there were data available for an individual but we do not know their status for months for which data were missing). Similarly, the ever NEET group could theoretically include some individuals who had a persistently NEET period, but because of data missing from some months we cannot be sure. This needs to be kept in mind in the analysis below.

Table 1   Numbers and proportions of the Y03 and Y06 cohorts who were never NEET, ever NEET and persistently NEET

Wave 2 sample		Y03		Y06	
Across all months of the survey	Never NEET	7901	(84.3%)	6793	(72.5%)
	Ever NEET	1477	(15.8%)	2579	(27.5%)
	*Persistently NEET**	*630*	*(6.7%)*	*1095*	*(11.7%)*
Ages 15–19 approx.	Never NEET	9031	(96.3%)	7693	(82.1%)
	Ever NEET	347	(3.7%)	1679	(17.9%)
	*Persistently NEET**	*169*	*(1.8%)*	*612*	*(6.5%)*
Still present in wave 10		**Y03**		**Y06**	
Across all months of the survey	Never NEET	2926	(74.2%)	2175	(60.8%)
	Ever NEET	1019	(25.8%)	1400	(39.2%)
	*Persistently NEET**	*421*	*(10.7%)*	*612*	*(17.1%)*
Ages 15–19 approx.	Never NEET	3821	(96.9%)	2928	(81.9%)
	Ever NEET	124	(3.1%)	647	(18.1%)
	*Persistently NEET**	*58*	*(1.5%)*	*224*	*(6.3%)*

*The persistently NEET are a sub-group of the ever NEET.
Note: Numbers are rounded to one decimal place and may not sum to 100.

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11 Including those not known to be NEET.

As would be expected, the never NEET group forms the largest group overall. The proportions who are never NEET are higher during the time the samples were aged 15—19. This is expected, given the more restricted time period. In addition, this is when the majority of the attrition from the survey occurred, and therefore those people who dropped out did not have the opportunity to become persistently NEET (particularly for the Y03 cohort, where the risk of being early persistently NEET is comparatively quite small for even those who were still in the survey at age 19). What this breakdown of the sample also shows is that the persistently NEET group is a smaller sub-set of the overall NEETs. So, for example, while 27.5% of the total sample across all months of the survey (regardless of dropout) was ever NEET for the Y06 cohort, only 11.7% had a persistently NEET period(s).

It can also be seen that there was a higher proportion of ever NEETs and persistently NEETs at any time during the survey for those who were still present in the final wave of the survey, the reason being that they would have had more opportunity to become so.

It is clear that there were higher proportions of ever NEET and also persistently NEET for the Y06 cohort (noting that persistently NEET is a sub-set of the ever NEET group). Across the length of the survey, for the total sample, 6.7% of the Y03 cohort reported a persistently NEET period(s), while 11.7% of the Y06 cohort did so. That is quite an increase in the size of the groups across the two cohorts. When we look at the more restricted time period when the cohorts were aged 15—19, there are also considerably larger proportions of persistently NEET in Y06 by comparison with Y03. Indeed, the Y03 sample of those who had a persistently NEET period(s) between the ages of 15 and 19 is quite small, particularly when restricted to those present in the final wave (58 people in total).

There could be various reasons to explain an increase in persistently NEET across the two cohorts, part of which could be related to the vagaries of the samples. However, Carcillo et al. (2015) point out that there was a rise in point-in-time NEETs in Organisation for Economic Co-operation and Development (OECD) countries following the GFC (mainly unemployed but in Australia also inactive [NILF] youth). It is possible that this had an effect on the Y06 sample in this study. The young people from this sample would have been aged about 18 when the effects of the GFC were felt in Australia (the age of labour market entry for many), while the young people in the Y03 cohort would have been aged about 21. This would also account, in part at least, for the larger proportion of 15 to 19-year-olds who were persistently NEET in Y06.

Table 2 follows a similar theme by examining the amount and proportion of time spent in the various NEET states.

Table 2   Months and proportion of time spent NEET

Wave 2 sample	Y03	Y06
Overall	1.4 months (1.9% of all months)	2.5 months (3.5% of all months)
Of those ever NEET (including persistently NEET)	9.1 months (12.3% of all months)	8.9 months (12.7% of all months)
Of those persistently NEET	17.3 months (23.4% of all months)	17.0 months (23.1% of all months)
Of those early persistently NEET (ages 15–19)	22.3 months (38.1% of all months)	18.9 months (29.6% of all months)
Still present in wave10	**Y03**	**Y06**
Overall	2.3 months (2.6% of all months)	3.9 months (3.7% of all months)
Of those ever NEET (including persistently NEET)	9.0 months (10.1% of all months)	9.9 months (9.4% of all months)
Of those persistently NEET	17.7 months (19.7% of all months)	18.7 months (17.8% of all months)
Of those early persistently NEET (ages 15–19)	28.6 months (31.6% of all months)	24.8 months (23.6% of all months)

Note: Those who were never NEET by definition would have zero months in the NEET state across the survey period.

Once again, the main feature is that it is quite clear (and expected) that those who are ever NEET, and more so the smaller group of persistently NEET, are spending a much higher proportion of the overall months in the NEET state; and an even higher proportion for those persistently NEET when they are aged 15 up to when they are aged 19 (possibly due to the more restricted time period). This high proportion of all months spent as NEET by the persistently NEET group, and particularly the early persistently NEET group, justifies the focus on this group of people in this paper, also noting the finding by the NZ Ministry of Business, Innovation and Employment (2013), that the long-term NEET represented more than 70% of all NEET days for their age group.

Demographic and other characteristics breakdown

Tables 3 and 4 provide breakdowns for the main socio-demographic characteristics that will be used as predictors when examining longer-term outcomes.[12]

Table 3 shows the breakdown of socio-demographic characteristics for the wave 2 sample (including those who dropped out of the survey) and the total sample still present at wave 10. Table 4 shows socio-demographic characteristics for those who were persistently NEET at any time during the survey and were still in the survey at wave 10, and those who were persistently NEET at any time at ages 15–19 (including those who dropped out of the survey after their persistently NEET period). The tables also indicate (with the use of an asterisk) for each category whether the socio-demographic characteristics for the persistently NEET group are significantly different (at the p<.01 level) from the non-persistently NEET (control) group for that category overall, and the effect size for that significant difference (Cramer's V).

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12 More detailed tables are shown in appendix C, tables C1–C3.

Table 3 Socio-demographic characteristics for the whole sample (%)

Characteristics	Wave 2 sample		Total sample present in wave 10			
	Y03	Y06	Y03	V	Y06	V
Sex						
Female	50.8	52.3	50.2		52.7	
Male	49.2	47.7	49.9		47.3	
Indigenous status						
Non-Indigenous	94.8	94.5	96.9*	0.08	96.6*	0.07
Indigenous	5.2	5.6	3.1		3.4	
Geographic location						
Metropolitan	70.7	69.3	72.6*	0.04	71.8*	0.04
Provincial	27.2	28.2	25.7		26.1	
Remote	2.1	2.5	1.7		2.2	
Language spoken at home						
LOTE[1]	7.3	6.9	7.7		7.2	
English	91.0	91.8	92.3		92.9	
No information	1.7	1.3				
Year 12 completion						
Completed Year 12	71.4	69.1	89.2*	***	90.9*	***
Did not complete Year 12	17.6	16.7	10.8		9.2	
At school at most recent interview	11.0	14.2	0.0		0	
Children						
Not reported having any children	95.4	96.6	93.0*	0.10	93.9*	0.12
Reported having children (at some point)	4.6	3.4	7.0		6.1	
ESCS						
Q1 (Highest)	25.8	27.7	33.3*	0.17	34.1*	0.14
Q2	25.5	26.4	26.7		28.1	
Q3	24.7	24.3	22.6		21.7	
Q4 (Lowest)	24.0	21.4	17.5		16.0	
Unknown	0.0	0.3	0.0		0.1	
Base total	9378.0	9372.0	3945.0		3575.0	

Note: 1 LOTE (Language other than English).

An asterisk indicates that the socio-demographic characteristic in question for the sample still present in wave 10 is significantly different (at the p<.01 level) in proportionality overall from the sample at wave 2. Cramer's V statistic is also included to indicate the size of the effect.

At school for the total sample includes those who dropped out of the survey while they were still at school. Known completers and non-completers were those who had left school and had not returned to school at the time of their most recent survey.

***The effect is not meaningful for the Year 12 completion variable: for the total sample there were those still at school, while for those present at wave 10 there were none still at school, producing an artificial effect.

Numbers are rounded to one decimal place and may not sum to 100.

The main feature in this table, apart from the fact that it provides socio-demographic breakdowns, is the effects of attrition (particularly for young people who reported not having any children and those from the lowest ESCS quartile, where Cramer's V indicates a small effect). Attrition was discussed in the methodology section of the report. It is worth reiterating here however that the differences in sample distribution need to be kept in mind in the analysis that follows.

Table 4 now specifically looks at the samples who were persistently NEET and which are used in the ensuing analysis.

Table 4   Socio-demographic description of the persistently NEET groups (%)

Characteristics	Persistently NEET at any time – present in wave 10				Early persistently NEET – present in wave 10			
	Y03	V	Y06	V	Y03	V	Y06	V
Sex								
Female	63.1*	0.09	54.6		60.3		52.7	
Male	36.9		45.4		39.7		47.3	
Indigenous status								
Non-Indigenous	95.2		94.6*	0.05	91.4		93.8	
Indigenous	4.8		5.4		8.6		6.3	
Geographic location								
Metropolitan	65.3*	0.06	65.9*	0.06	55.2*	0.05	61.6*	0.07
Provincial	32.8		30.9		43.1		37.1	
Remote	1.9		3.3		1.7		1.3	
Language spoken at home								
LOTE	6.8		5.6		3.5		2.3*	0.05
English	93.3		94.4		96.5		97.8	
Year 12 completion								
Completed Year 12	74.8*	0.16	82.7*	0.13	31.0*	0.23	77.7*	0.12
Did not complete Year 12	25.2		17.3		69.0		22.3	
Children								
Not reported having any children	70.0*	0.31	80.9*	0.25	65.5*	0.13	79.0*	0.16
Reported having children	30.0		19.1		34.5		21.0	
ESCS								
Q1 (Highest)	24.8*	0.13	23.9*	0.13	13.8*	0.08	20.1*	0.10
Q2	20.7		26.8		19.0		25.0	
Q3	23.6		25.3		27.6		31.3	
Q4 (Lowest)	31.0		23.9		39.7		23.7	
Unknown	0.0		0.2		0.0		0.0	
Base total	421.0		612.0		58.0		224.0	

Note: An asterisk indicates that the persistently NEET group in question for that particular socio-demographic characteristic is significantly different (at the p<.01 level) in proportionality from its non-persistently NEET counterpart. Cramer's V statistic is also included to indicate the size of the effect.

The completed Year 12 and had children variables for the early persistently NEET groups are as of their wave 5 status (so when they were about 19 years of age).

Numbers are rounded to one decimal place and may not sum to 100.

The socio-demographic characteristics in table 4 with significant differences between the persistently and not persistently NEETs[13] across both cohorts are geographic location (those living in provincial areas more likely to be persistently NEET); Year 12 completion (not completing Year 12 more likely to be persistently NEET); reporting having children (those who had children more likely to be persistently NEET); and ESCS (those from a lower quartile more likely to be persistently NEET). However, when we examine the Cramer's V statistics (effect sizes), we see that only Year 12 completion and having children have an acceptable effect size (albeit mainly small), while ESCS has a marginal effect size. The largest effect sizes in table 4 were for having children for those who were persistently NEET at any time.

There are some differences between the cohorts. The distributions are more skewed towards being female, non-completion of Year 12, having children, and the lowest ESCS

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13 The proportions that are not persistently NEET are not shown in table 4.

quartile for the Y03 cohort by comparison with the Y06 cohort. For the early persistently NEET, the differences are even more pronounced and also include those living in a provincial area. The most exaggerated difference is for the Year 12 completion variable, where nearly 70% did not complete Year 12 for the Y03 cohort by comparison with 22% for the Y06 cohort. This needs to be kept in mind for the analysis that follows.

In terms of an explanation, it is possible that the GFC in 2008 affected people more evenly for the Y06 cohort than for the Y03 cohort. We saw from table 1 that there were substantially more persistently NEETs in the Y06 cohort, which could possibly mean that it affected a greater range of people. This group would have been aged about 18 years when the effects of the GFC became apparent (as opposed to aged about 21 for the Y03 cohort) and in that critical stage of transitioning from school to either the labour market or further education and training.

A picture starts to emerge from the above examination of the socio-demographic characteristics. We can go further with this analysis by examining how likely certain socio-demographic characteristics are to be associated with persistently NEET, taking into account (or holding constant) the effect of other socio-demographic characteristics. To do this we ran two regression models: one with the outcome of interest being persistently NEET at any time during the survey; and the other with the outcome being persistently NEET at any time during the ages 15 through to 19. The results of this analysis are shown in table 5 and are given in terms of odds ratios.[14] The odds ratios are relative to the reference group in any given category. In terms of interpretation, if we look at a couple of examples in table 5 in the column persistently NEET at any time, we see an odds ratio of 1.41 for females in the Y03 cohort, which means that women are 1.41 times more likely to be persistently NEET than men (or, alternatively, 41% more likely). A converse example is for non-Indigenous people in the Y06 cohort. It is interpreted as non-Indigenous people are 0.66 more likely (or 34% less likely) to be persistently NEET than Indigenous people.

Table 5   Likelihood of being persistently NEET by selected demographics (%)

Variable	Level	Persistently NEET at any time		Persistently NEET 15–19	
		Y03	Y06	Y03	Y06
Sex	Female	**1.41**	0.98	1.55	0.96
Indigenous status	Non-Indigenous	0.79	**0.66**	0.78	**0.57**
ESCS	Lowest quartile	**1.40**	**1.68**	1.70	**2.23**
	Second quartile	0.95	1.40	1.25	1.81
	Third quartile	0.86	1.20	0.97	1.41
Geographic location	Provincial	1.05	1.00	1.15	1.04
	Remote	0.64	0.95	1.25	0.63
Completed Year 12	No	**1.91**	**1.38**	**16.11**	**2.46**
Home language	Language other than English	1.17	0.92	0.47	**0.47**
Had children ages 15–19	Yes	**10.27**	**8.15**	**9.14**	**9.26**

Note: For both the had children and Year 12 completion variables, the age ranges of 15–19 are used to predict persistently NEET at ages 15–19, and ages 20–24 during the survey for predicting persistently NEET at any time.

For ECSC the reference category is the top quartile (least disadvantaged), and for geographical location it is city.

14 More detailed tables are shown in appendix 3 tables A4—A7.

Once again, becoming parents at ages 15—19, not completing Year 12 (especially for the early persistently NEET for the Y03 cohort), and being in the lowest ESCS quartile (by comparison with the highest ESCS quartile) are consistently associated with a greater likelihood of being persistently NEET. Being non-Indigenous is associated with a significantly lower likelihood of being persistently NEET for the Y06 cohort only (however, we saw previously that the effect size was very small). Having children increases the likelihood of being persistently NEET by about 10 times by comparison with not having children (noting that this is a relative measure). We saw from table 4 that the percentage of the overall sample of persistently NEET who had children was very high.

In comparison, the OECD (2016) study found long-term NEET in Australia[15] to be higher for women (particularly young women who were parents); those with low educational attainment; Indigenous youth; and low parental education. While we found low educational attainment to be associated with being persistently NEET, we did not find enough evidence to make this claim for females and Indigenous youth. For Indigenous youth, this could be due to the relatively small sample of persistently NEET, particularly for the Y03 cohort. While there is some marginal evidence that females were more likely to be persistently NEET for the Y03 cohort (over the entire survey period, not early persistent NEET), there was no significant difference for the Y06 cohort. The way the OECD defined long-term NEET, the different observation period, the different dataset and the methodology used could partly account for these differences. But we also saw that the GFC appears to have affected young people more evenly for the Y06 cohort, so that may also account for why there was no significant effect for gender for this cohort.

In summary, our analysis has uncovered two factors that seem to be clearly associated with a greater likelihood of having a persistently NEET period at any time during the survey and also the period during which the survey participants were aged 15—19 by comparison with their counterparts: having children, particularly at an early age; and not completing Year 12 (but also to some extent being in the lowest ESCS quartile). Other research, discussed in the literature overview and support document, has also found related factors to be associated with being persistently NEET.

Main activities of the persistently NEET group

LSAY provides some insight into their activities at point of interview (not on a month-by-month basis).[16] The analysis here is intended to provide a broad indication of the types of activities being undertaken by the persistently NEET group and therefore should be seen as indicative only, but it adds a further dimension to the analysis of socio-demographic characteristics. This section thus provides information on both those who were not in the labour force and those who were unemployed.

Table 6 provides a summary of the main activities of those who were persistently NEET for both the Y03 and Y06 cohorts and for both males and females. It also provides information

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15 Although they had a different definition of long-term NEET, which was being NEET for more than 12 months in total over a 48-month observation period.

16 Hence, it does not capture those who were persistently NEET between interview points. It also does not identify whether they were at the beginning of a persistent NEET block or not.

on the proportions that were not in the labour force and unemployed by cohort and gender.

Table 6   Summary of main activities for the persistently NEET group not in the labour force by gender, and proportions unemployed – numbers summed across waves (%)

Main activity	Y03			Y06		
	Females	Males	Total	Females	Males	Total
Study or training	2	15	5	3	5	4
Home duties or looking after children	72	18	58	60	24	48
Travel or holiday	9	9	9	13	29	19
Ill or unable to work	7	20	11	7	5	6
Other	9	38	16	16	36	23
Total	**100**	**100**	**100**	**100**	**100**	**100**
NILF	65	35	54	50	25	40
Unemployed	35	65	46	50	75	60
Total	**100**	**100**	**100**	**100**	**100**	**100**

Note: Only includes individuals once for a given activity, so the overall is total less than totals for each wave. However, some individuals will have reported more than one activity and in that sense will be counted more than once.

For the purposes of this table, people reporting NILF or unemployed are only counted once (not for each wave they were NILF or unemployed).

Numbers may not sum to exactly 100% due to rounding.

Table 6 quite clearly shows that by far the single largest activity type by females was home duties or looking after children and this is so across both cohorts. Activities for males were more evenly split, with some proportions undertaking home duties or looking after children, ill or unable to work, or on holiday/travelling (particularly so for the Y06 cohort). The largest single category for males was 'other'. Few in either sex were undertaking study (this is presumably non-formal study).

We can see from the table that overall, there are quite a few 'other' responses. It is possible to obtain the verbatim responses from LSAY given by the young people not in the labour force where 'other' is stated as their main activity. We were able to obtain these for the Y06 cohort and filter them, leaving us with the verbatims for respondents who were persistently NEET at the time of interview. Many of these responses fell into categories such as caring (other than for their children), working to help family (unpaid), volunteering, gap year, and waiting to start a job. There were also quite a few who stated that they were not doing anything at the moment. A small selection of these responses is shown below for illustration.

> Waiting to start TAFE next year
>
> Full-time carer for ill mother
>
> I am helping my parents in their family business
>
> Doing an unregistered permaculture course for interest
>
> About to have a baby
>
> Having a break before I go into the navy
>
> Volunteer work − going to China as a volunteer next month
>
> Music rehearsing/practising with aim of further career in music
>
> Fixing cars with my mate

Table 6 also shows the proportions that were unemployed by comparison with NILF at the time of interview. While this is a fairly rough guide, what is of interest is that the proportions are very different between males and females. There are much higher proportions of females not in the labour force than males and, conversely, there are much higher proportions of unemployed males. The proportions unemployed are somewhat higher for the Y06 cohort, consistent with our earlier comments on the possible impact of the GFC and also consistent with the findings by Carcillo et al. (2015).

In terms of total numbers (refer to Appendix D, not shown in table 6), there were more NILF females than males in both cohorts (about three-quarters are females in both cohorts). This seems to be accounted for largely by the number of females reporting home duties or caring for children. (Summed across both cohorts, there were 208 females reporting this by comparison with 28 males; over seven times more.) The OECD (2016) also found in their study of Australia's NEETs higher inactivity rates by females than males, particularly females with young children.

For those who were unemployed, the split was quite even (summed across both cohorts, 51% of people that reported being unemployed were males). Overall, in our point-in-time analysis, there were considerably more females than males who were persistently NEET (for both cohorts). However, our analysis of socio-demographic variables did not clearly indicate being female as a significant variable in terms of being persistently NEET.

Tables 7 and 8 break this information down on a wave-by-wave basis. These tables are not split by gender. For gender breakdowns of this information, see appendix D.

Table 7   Wave by wave activity for those in a persistently NEET block at interview point for the Y03 cohort

Activity	W2 2004		W3 2005		W4 2006		W5 2007		W6 2008		W7 2009		W8 2010		W9 2011		W10 2012	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Study or training	0	0	0	0	0	0	1	5	2	9	5	8	2	3	3	4	0	0
Home duties or looking after children	0	0	12	75	14	70	16	80	18	78	41	64	48	72	48	68	54	64
Travel or holiday	0	0	1	6	0	0	0	0	0	0	4	6	3	4	6	8	9	11
Ill or unable to work	0	0	0	0	3	15	1	5	0	0	6	9	5	7	9	13	12	14
Other	0	0	3	19	3	15	2	10	3	13	8	13	9	13	5	7	9	11
Total	**0**	**0**	**16**	**100**	**20**	**100**	**20**	**100**	**23**	**100**	**64**	**100**	**67**	**100**	**71**	**100**	**84**	**100**
NILF	0	0	16	37	20	49	20	44	23	68	64	56	67	59	71	63	84	74
Unemployed	0	0	27	63	21	51	25	56	11	32	50	44	46	41	41	37	29	26
Total	**0**	**0**	**43**	**100**	**41**	**100**	**45**	**100**	**34**	**100**	**114**	**100**	**113**	**100**	**112**	**100**	**113**	**100**

Table 8   Wave by wave activity for those in a persistently NEET block at interview point for the Y06 cohort

Activity	W2 2007		W3 2008		W4 2009		W5 2010		W6 2011		W7 2012		W8 2013		W9 2014		W10 2015	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Study or training	0	0	1	3	3	4	1	2	1	3	0	0	1	2	0	0	2	6
Home duties or looking after children	6	55	13	43	27	38	27	54	16	43	19	83	32	58	35	74	26	74
Travel or holiday	0	0	2	7	15	21	8	16	2	5	2	9	5	9	4	9	4	11
Ill or unable to work	0	0	3	10	2	3	5	10	1	3	1	4	11	20	4	9	0	0
Other	5	45	11	37	24	34	9	18	17	46	1	4	6	11	4	9	3	9
Total	**11**	**100**	**30**	**100**	**71**	**100**	**50**	**100**	**37**	**100**	**23**	**100**	**55**	**100**	**47**	**100**	**35**	**100**
NILF	11	33	30	38	71	36	50	48	37	48	23	47	55	61	47	57	35	56
Unemployed	31	67	48	62	129	65	55	52	40	52	26	53	35	39	36	43	28	44
Total	**46**	**100**	**78**	**100**	**200**	**100**	**105**	**100**	**77**	**100**	**49**	**100**	**90**	**100**	**83**	**100**	**63**	**100**

The wave-by-wave activity identifies interesting patterns. For the Y03 cohort, increases in persistently NEET occurred when they were at about the age of 21, whereas for the Y06 cohort, this occurred at about the age of 18 (although for the Y06 cohort the numbers fall back again in the following wave). Both of these fall in the year of 2009 and the increases occurred for both males and females. While we cannot definitively claim, based on a two-cohort analysis (so we do not know the extent to which there was random fluctuation in persistently NEET between the two cohorts), that these increases were a consequence of the GFC[17], the GFC clearly had an impact on employment in Australia, particularly for young people, as has been demonstrated in the 2009 point-in-time data.

If we unpack these numbers, we can discern differences between cohorts, between the not in the labour force and unemployed categorisations, and by gender. Firstly, the two cohorts are at different life stages, three years apart. The Y06 cohort was aged about 18 in 2009 and, while there was an increase in both the numbers unemployed and NILF, the biggest increase in persistently NEET was for those who were unemployed. The numbers persistently NEET then dissipate until another increase, mainly in those NILF in 2013, when this cohort was aged 22. For the Y03 cohort, there was both an increase in unemployment and NILF at age 21. This increase remains in the subsequent three waves, but the distribution changes, with more becoming NILF and fewer unemployed. This finding is supported by Carcillo et al. (2015), who noted that in Australia there was, contrary to many other countries, an increase in the number who were inactive (or NILF) following the GFC.

Differences by gender are also apparent. In the Y03 cohort, for males, there were mainly increases in 2009 for those who were unemployed, while for females, there was a large increase in home duties or looking after children (that remains for the subsequent three waves), in addition to an increase in the unemployed. For the Y06 cohort, there were large increases in unemployment for both males and females in 2009, and there was also a substantial increase in NILF (mainly caring duties) for females.

The differences in trajectories after 2009 for both cohorts could be related to the different life stages of the two cohorts and also the different compositions of the persistently NEET group. By the age of 21, many of the Y03 cohort would have been finishing post-school education, and the limited work opportunities would keep the persistently NEET group relatively constant.[18] The Y06 cohort, conversely, were impacted following school, and the decrease in numbers persistently NEET after 2009 may in part be because some chose to go back to education, or for other not persistently NEET, continue on in education or training. These data support the proposition made by Carvalho (2015) that the 15—19 and 20—24 years age groups should be treated differently in terms of their underlying dynamics.

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17 And to reiterate, the numbers in the wave-by-wave analysis are indicative only, as they are only those who were persistently NEET at the time of the survey.

18 Also, these are raw numbers rather than proportions of the LSAY population, so due to attrition from the survey the same numbers may actually represent higher proportions in later waves.

Who are the persistently NEET young people?

Longer-term outcomes of being persistently NEET during the ages of 15–19

The final section of the analyses considers three outcomes of the group who were persistently NEET between the ages of 15 and 19.

To reiterate, we used a simple logistic regression model to examine the effect of being early persistently NEET on one or more persistently NEET periods between the ages of 20 and 24, study outcomes by the age of 24 and employment at age 24. The socio-demographic variables described previously are used as covariates in the analysis. Note also that we are only looking at the sub-sample who answered wave 10 of the questionnaire.

Table 9 presents the odds ratios for each of the three categories of outcomes for the Y03 and Y06 cohorts.[19]

Table 9   Summary table of odds ratios for three outcome variables for the 15–19 years persistently NEET group

Variable	Level	Persistently NEET 20–24		Studying for or achieved cert III+ by age 24		Employment at 24	
		Y03	Y06	Y03	Y06	Y03	Y06
Early persistently NEET	Yes	**3.03**	**5.39**	**0.30**	**0.28**	0.65	**0.35**
Sex	Female	**1.89**	1.14	**1.59**	**1.71**	**0.69**	0.93
Indigenous status	Non-Indigenous	0.70	0.80	1.66	1.53	1.14	1.51
ESCS	Lowest Quartile	**1.88**	**2.12**	**0.27**	**0.39**	1.11	1.01
	Second Quartile	1.24	1.47	0.46	**0.43**	1.29	1.03
	Third quartile	**0.92**	1.33	**0.69**	0.74	1.20	1.09
Geographic location	Provincial	1.08	1.06	0.88	0.95	0.95	0.98
	Remote	1.08	1.68	0.92	1.17	0.85	0.95
Completed Year 12	No	**2.24**	**1.73**	**0.33**	**0.39**	0.70	0.92
Home language	Language other than English	0.97	0.95	**1.94**	**2.14**	0.76	**0.59**
Had children ages 15–19	Yes	**4.42**	**7.97**	0.53	0.87	0.69	0.44

Note: Bolded figures are significant at the p<.01 level.
For ESCS the reference category is the top quartile (least disadvantaged), and for geographical location it is city.

Table 9 shows quite clearly that early persistently NEET is a significant factor in predicting outcomes at ages 20–24. That is, they are more likely to have a persistently NEET period between ages 20 and 24, less likely to be studying for or have completed a certificate III or higher by age 24, and less likely to be in employment at age 24 (for the Y06 cohort). The results for each of the outcome variables are discussed in more detail below. The effects are more pronounced for the Y06 cohort.

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19 More detailed tables are shown in appendix C tables C8–C13.

Persistently NEET after age 19

As was expected, being persistently NEET at ages 15—19 is a significant predictor of being later persistently NEET. Indeed, the early persistently NEET group was three times more likely for the Y03 cohort and around five-and-a-half (5.4) times more likely for the Y06 cohort to have one or more persistently NEET periods between the ages of 20 and 24 than their non-persistently NEET counterparts.[20] As has been highlighted, there was a substantially larger early persistently NEET group for the Y06 cohort than the Y03 cohort (quite possibly at least in part due to the GFC), which may influence the likelihood of being persistently NEET at age 20—24 years.

The analysis in table 9 also indicates that those who have children at ages 15—19, independently of being persistently NEET at these ages, are several times more likely to have a persistently NEET period between the ages 20 and 24 than their counterparts who do not have children, particularly for the Y06 cohort. Indeed, our demographic analysis showed that those who had children at ages 15—19 were much more likely to be persistently NEET than their counterparts who did not have children, so in that sense this result is not surprising.

Those who did not complete Year 12 were also more likely to have a persistently NEET period between the ages 20 and 24 compared with Year 12 completers, regardless of being persistently NEET through ages 15 to 19. Once again this is not surprising, given the more difficult labour market transitions this group faces. Lamb and Huo (2017) found that, in Australia, those who did not complete Year 12 or equivalent qualifications by age 19 were more likely than those who did to be disengaged in the long-term.[21] In addition, those in the lowest quartile of the ESCS measure were more likely have a persistently NEET period by comparison with the top quartile.

Later education and training outcomes

Early persistently NEET is clearly associated with a lower likelihood of studying for or achieving a certificate III or higher-level qualification by the age of 24. In fact, they were only about as 0.3 times as likely to achieve the outcome variable as their not persistently NEET counterparts and this applied across both cohorts.

Not having completed Year 12, or being in the lowest ESCS quartile (relative to the highest quartile), independently of being early persistently NEET, is also associated with a lower likelihood of achieving the outcome variable by age 24. Alternatively, females and those whose home language was other than English are more likely than their counterparts to have achieved the outcome variable.

Employment at age 24

It is expected that being early persistently NEET could have a negative effect on longer-term employment outcomes. However, there is only a significant effect for the Y06

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20 As was noted in the methodology there is a relatively small number of cases where the persistently NEET spell overlaps the two age barriers. This is likely to have a relatively small impact on effect sizes.

21 That is, not engaged in full-time work or study.

cohort, with those who were early persistently NEET being 0.35 times as likely to be employed at age 24 than their non-early persistently NEET counterparts. The effect for the Y03 cohort was not significant. Part of this may be related to the small sample size for early persistently NEET used in the model for the Y03 cohort; part of it may also be due to the different composition of NEET between the two cohorts (there were more unemployed NEET for the Y06 cohort, quite possibly due to the GFC) and so possibly different longer-term outcomes.

Discussion and conclusions

In this report, we found that a sub-set of those who are NEET remains in that state persistently. This was more so for the Y06 cohort than the Y03 cohort of LSAY.

The main socio-demographic characteristics associated with being persistently NEET in our report are early school leaving and having children (particularly under the age of 20), and to some extent being in the lowest quartile of the ESCS measure of socio-economic disadvantage. We also noted that the distributions are more skewed towards these factors (and in addition, being female and coming from a regional location) for the Y03 cohort.[22] This may mean that the GFC affected young people more evenly in the Y06 cohort, coming as it did when they were aged 18 years. Indeed, we saw from our findings that there was a considerably higher proportion of the sample persistently NEET in the Y06 cohort, particularly early persistently NEET.

These characteristics are supported by other research in the area.[23] However, some of the other characteristics identified in other research, such as being female, of Indigenous status, and from a remote location, were not clearly associated with persistently NEET in our study. There were some significant differences for these variables but they were not consistent and the effect of the differences was only very small (so not particularly meaningful). Part of this may be attributable to the nature and size of our sample and also the possible effects of attrition.

In terms of the not in the labour force activities of those who were persistently NEET (at the time of interview), our analysis found that females were likely to be undertaking home duties or caring for children, while males undertook a variety of activities. Males, however, were considerably more likely to be unemployed. This was across both cohorts, although the difference between males and females is not as great in the Y06 cohort. It appears that the Global Financial Crisis, the effects of which would have been noticed in about 2009, impacted on both cohorts. In our analysis, there were clearly increases in unemployment for both sexes, and increases in home duties and caring for females in 2009 (at about age 21 for the Y03 cohort and age 18 for the Y06 cohort). While for the Y06 cohort the numbers of persistently NEET reduced after 2009, this was not the case for the subsequent three waves of the Y03 cohort. This reflects the different dynamics of the two age groups, with the 18-year-olds possibly being more likely to return to education or training.

Those who had a persistently NEET period(s) during the ages 15—19 were found, by comparison with their not persistently NEET counterparts, to be, for both cohorts, more likely to be persistently NEET at some period during the ages 20—24, and less likely to be either studying for or achieving a certificate III level or higher qualification by age 24. Those who were early persistently NEET were found to be less likely to be in employment than the control group for the Y06 cohort only.

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22 Particularly non-completion of year 12 for those that were early persistently NEET where nearly 70% did not complete year 12.

23 See the literature overview of this report and the support document for more detail of other research in this area.

Taking into account all of the analyses, it appears that the GFC has had an impact in terms of being persistently NEET on both cohorts, but differentially across the two cohorts, given the different ages (18 and 21 years) and consequent life stages. This also provides further evidence for what Anlezark (2011a) found regarding the economic downturn in terms of employment being harder to find for young people and increases in unemployment. We also found increases in those not in the labour force following the GFC, mainly for women (also found by Carcillo et al. 2015).

In the background review, we mentioned the vulnerable/not vulnerable divide. It would appear that not all those who are persistently NEET are vulnerable, although we posit that this group is more likely to be so than those who spend fleeting amounts of time in and out of NEET. NEET are a diverse group and includes those not in the labour force who are travelling or volunteering, which can be a legitimate choice. In our analysis we saw that many females in particular undertake home or caring duties, which may be a legitimate choice but may also be a necessity. We also saw from the analyses that teenage parenting is associated with being persistently NEET early. Furthermore, they are considerably more likely than those who do not have children to be persistently NEET at ages 20—24. This requires substantial consideration in terms of how policy can best assist this group of people. There may be a variety of supports required for this group, depending on their circumstances.

However, there are also others who are not in the labour force or unemployed who are vulnerable and in need of support. We saw, for example, that early school leaving is associated with a higher likelihood of being persistently NEET by comparison with those who completed Year 12. While once again a variety of supports may be needed, for those in this group of the persistently NEET who have not gone on to any further education or training, completing Year 12 or its vocational equivalent is an important step towards a transition to the labour market. Many programs and initiatives are available in Australia that enables schools to adapt their learning programs to the needs of low achievers and the disadvantaged (OECD 2016).

For those who have completed Year 12 and are persistently NEET (either not in the labour force or unemployed), further skills acquisition, in addition to other supports, may be appropriate. In this light vocational education and training is seen as an important pathway, given its flexibility and accessibility to students across a wide range of circumstances (OECD 2016).

These are just some examples. The main point is that there needs to be nuanced policy responses to cater for the diverse individual and also broader labour market and institutional circumstances facing the persistently NEET group. Furthermore, the focus should be on those who are vulnerable in this group rather than on those who are there by choice. Elder (2015), as noted in the support document, provides a systematic guide to building policy responses for different categories of NEET (which would also apply to those who are persistently NEET).

The analyses in this paper were a first attempt to explore the persistently NEET cohort within the LSAY data.[24] Further research on this group could deepen our understanding considerably, a sensible first step being the updating of these current analyses for the Y09 cohort as more waves of data for this group become available.

It would also be of interest to examine pathways out of the persistently NEET state, that is, for those who were persistently NEET at some point between the ages of 15 and 19, but not persistently NEET by age 24 — what they may have done differently from those who remained in the persistently NEET state.

Further research could also be undertaken to understand the dynamics of particular sub-groups. Research could more closely examine those who were persistently NEET at ages 15—17, as these would potentially be an even more vulnerable sub-group. It may also be of interest to more closely examine the characteristics and pathways of those who only become persistently NEET at ages 20—24 years.

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24 To reiterate, because of weighting limitations, the findings pertain only to the samples in our analyses, not the Australian population of 15-24 year olds.

Who are the persistently NEET young people?

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Appendix A: What constitutes persistently NEET?

For the current project, six or more months of consecutive NEET is used as the definition of persistence.[25] Although six months NEET is somewhat arbitrary, half-a-year seems a sensible cut-off length of time. A longer period, for example, nine months or a year, would likely exclude a larger number of participants who have been shown to be 'at risk' in the literature and also decrease the sample. Shorter than six months in a block, for example, three months, would include participants on holidays between formal education, for example, schooling finishes in November but university starts in March, leaving a period of three months unaccounted for (December, January and February).

Another reason for using six months or more of consecutive NEET relates to definitions and eligibility for unemployment in Australia. Although the definition of long-term unemployment in Australia is 12 months, government benefits for unemployment typically have further criteria for eligibility at six months. That is, someone who is unable to find employment by six months may be subject to further requirements of either enforced work (for example, work experience), specific forms of job seeking, or additional education that would lead to increased employability. There have been calls to change unemployment benefits to a maximum of six months, reasoning that this would force unemployed people into work rather than relying on benefits and becoming long-term unemployed. So, although 12 months is considered long-term unemployed in Australia, six months is also an indicator of problematic unemployment. It was also the average duration of unemployment for young Australians in 2014 (Brotherhood of St Laurence 2014). Six months therefore seems to be a good indicator of disengagement.

Instead of a six-month block (or more), an 'in-and-out' measure could have been included in persistently NEET. For example, if a participant was NEET for a total of six months in a 12-month period, they would be included as persistently NEET. This inclusion is however problematic for two reasons. Firstly, the derivation of participants who are *in and out* of persistently NEET for six of every 12 months would need to occur on a rolling basis. That is, the 12 months is not a calendar year or an interview year, but any 12-month period that contains six months of NEET. This would cause practical difficulties in deriving the variable from the LSAY dataset.

Secondly, six of 12 months NEET may not be similar to six months plus in a block NEET. Someone who is NEET for six months straight and starts off unemployed but becomes NILF due to disengagement with the labour market would be different from someone who took three months off for holidays before returning to work and then decided to leave work and become unemployed for three months before starting a new job. There may be much more flexibility in being NEET for six of 12 months compared with a six-month block, but this is not the focus of the current project.

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25 This six-month or longer block does not have to encompass the interview point in LSAY.

Appendix B: Attrition analysis

The following provides the main highlights for the attrition analysis that was conducted on both the Y03 and Y06 cohorts of LSAY, predicting the completion of the wave 10 surveys (using a logistic regression model approach).

The following variables were used in the regression models: sex, Indigenous status, geographic location, language spoken at home, Year 12 completion, had children, ESCS, NEET for any month across the period, and NEET for six consecutive months across the period.

Significant predictors of non-completion were:

For the Y03 survey

- Individuals who were NEET for at least one month during the survey were 73.1% less likely to drop out than individuals who were never known to be NEET (but note that being in the survey longer increases opportunity to be NEET leading to a 'chicken and egg' causality dilemma).

- Females were 21.3% more likely to drop out than males.

- Non-Indigenous participants were 47.1% less likely to drop out than Indigenous participants.

- Participants who had not completed Year 12 by their most recent interview were 3.5 times more likely to drop out than those who had completed Year 12 by their most recent interview (but note that being in the survey longer increases opportunity to complete Year 12).

- Participants belonging to the lowest SES quartile were 2.4 times more likely to drop out than participants belonging to the highest SES quartile.

- Participants belonging to the second SES quartile were 1.7 times more likely to drop out than participants belonging to the highest SES quartile.

- Participants belonging to the third SES quartile were 1.4 times more likely to drop out than participants belonging to the highest SES quartile.

For the Y06 survey

- Individuals who were NEET for at least one month during the survey were 47.2% less likely to drop out than individuals who were never known to be NEET (but note that being in the survey longer increases opportunity to be NEET).

- Non-Indigenous participants were 42.8% less likely to drop out than Indigenous participants.

- Participants who had not completed Year 12 by their most recent interview were 3.5 times more likely to drop out than those who had completed Year 12 by their most recent interview (but note that being in the survey longer increases opportunity to complete Year 12).

- Participants belonging to the lowest SES quartile were 1.9 times more likely to drop out than participants belonging to the highest SES quartile.

- Participants belonging to the second SES quartile were 1.6 times more likely to drop out than participants belonging to the highest SES quartile.

- Participants belonging to the third SES quartile were 1.2 times more likely to drop out than participants belonging to the highest SES quartile.

Appendix C: Detailed results

Table C1 Associations between the wave 2 sample and those still present in wave 10 by socio-demographic characteristics

Characteristic	Y03				Y06			
	X^2	df*	p-value	V	X^2	df*	p-value	V
Sex	1.20	1	0.2700	0.01	0.4	1	0.5500	0.006
Indigenous status	64.20	1	<.0001	0.08	50.3	1	<.0001	0.070
Geographic location	15.10	2	0.0005	0.04	17.5	2	0.0002	0.040
Home language	0.37	1	0.5500	0.01	0.1	1	0.7200	0.004
Year 12 completion	1215.70	2	<.0001	0.36**	1411.4	2	<.0001	0.390**
Had children	90.90	1	<.0001	0.10	127.7	1	<.0001	0.120
ESCS	280.80	3	<.0001	0.17	190.7	4	<.0001	0.140

Note: *Degrees of freedom.

   ** As was mentioned in the report, this is not a meaningful association because the wave 2 sample still had people at school, whereas those who were in wave 10 had no one still at school.

Table C2 Associations between socio-demographic characteristics and persistently NEET status for those still in the survey at wave 10

Characteristic	Y03				Y06			
	X^2	df*	p-value	V	X^2	df*	p-value	V
Sex	31.5	1	<.0001	0.09	1.01	1	0.3100	0.017
Indigenous status	4.6	1	0.0300	0.03	8.80	1	0.0030	0.050
Geographic location	12.1	2	0.0020	0.06	14.40	2	0.0007	0.060
Home language	0.6	1	0.4600	0.01	2.60	1	0.1100	0.030
Year 12 completion	100.9	1	<.0001	0.16	59.40	1	<.0001	0.130
Had children	381.0	1	<.0001	0.31	220.50	1	<.0001	0.250
ESCS	65.4	3	<.0001	0.13	56.20	4	<.0001	0.130

Note: *Degrees of freedom.

Table C3 Associations between socio-demographic characteristics and persistently NEET status between the ages of 15 and 19 for those still in the survey at wave 10

Characteristic	Y03				Y06			
	X^2	df*	p-value	V	X^2	df*	p-value	V
Sex	2.4	1	0.1200	0.03	0.0002	1	0.9900	0.0003
Indigenous status	6.1	1	0.0130	0.04	5.8000	1	0.0200	0.0400
Geographic location	9.4	2	0.0100	0.05	15.2000	2	0.0005	0.0700
Home language	1.4	1	0.2400	0.02	8.6000	1	0.0030	0.0500
Year 12 completion	205.8	1	<.0001	0.23	49.9000	1	<.0001	0.1200
Had children	68.1	1	<.0001	0.13	93.2000	1	<.0001	0.1600
ESCS	25.2	3	<.0001	0.08	33.8000	4	<.0001	0.1000

Note: *Degrees of freedom.

Table C4   Logistic regression results for the likelihood of being persistently NEET at any time by socio-demographic characteristics for the Y03 cohort

Covariates	Level	*B*	Standard error of *B*	df	*p*-value	Odds ratio
Sex	Female	0.1727	0.0459	1	0.0002	1.412
Indigenous status	Non-Indigenous	-0.1196	0.0871	1	0.1697	0.787
ESCS	Lowest quartile	0.3001	0.0734	1	<.0001	1.395
	Second quartile	-0.0825	0.0792	1	0.2976	0.952
	Third quartile	-0.1846	0.0817	1	0.0239	0.859
Geographic location	Provincial	0.1824	0.127	1	0.151	1.051
	Remote	-0.3155	0.2304	1	0.1709	0.639
Completed Year 12	No	0.3239	0.0506	1	<.0001	1.911
Home language	Language other than English	0.08	0.0873	1	0.3595	1.174
Had children ages 15–19	Yes	1.1644	0.0575	1	<.0001	10.265

Note: For ESCS the reference category is the top quartile (least disadvantaged), and for geographic location it is city.

Table C5   Logistic regression results for the likelihood of being persistently NEET at any time by socio-demographic characteristics for the Y06 cohort

Covariates	Level	*B*	Standard error of *B*	df	*p*-value	Odds ratio
Sex	Female	-0.0102	0.0348	1	0.7706	0.980
Indigenous status	Non-Indigenous	-0.2055	0.0665	1	0.0020	0.663
ESCS	Lowest quartile	0.2562	0.0602	1	<.0001	1.676
	Second quartile	0.0784	0.0585	1	0.1803	1.403
	Third quartile	-0.0747	0.0597	1	0.2106	1.203
Geographic location	Provincial	0.0172	0.0809	1	0.8320	0.998
	Remote	-0.0359	0.1392	1	0.7962	0.947
Completed Year 12	No	0.1603	0.0412	1	0.0001	1.378
Home language	Language other than English	-0.0415	0.0720	1	0.5644	0.920
Had children ages 15–19	Yes	1.0487	0.0614	1	<.0001	8.145

Note: For ESCS the reference category is the top quartile (least disadvantaged), and for geographic location it is city.

Table C6 Logistic regression results for the likelihood of being persistently NEET at ages 15–19 by socio-demographic characteristics for the Y03 cohort

Covariates	Level	*B*	Standard error of *B*	df	*p*-value	Odds ratio
Sex	Female	0.2203	0.1008	1	0.0289	1.554
Indigenous status	Non-Indigenous	-0.1268	0.1737	1	0.4655	0.776
ESCS	Lowest quartile	0.3480	0.1547	1	0.0245	1.696
	Second quartile	0.0398	0.1700	1	0.8149	1.247
	Third quartile	-0.2072	0.1880	1	0.2704	0.974
Geographic location	Provincial	0.0185	0.2319	1	0.9363	1.151
	Remote	0.1037	0.4092	1	0.8000	1.254
Completed Year 12	No	1.3898	0.1119	1	<.0001	16.114
Home language	Language other than English	-0.3775	0.3126	1	0.2272	0.470
Had children ages 15–19	Yes	1.1064	0.1448	1	<.0001	9.142

Note: For ESCS the reference category is the top quartile (least disadvantaged), and for geographic location it is city.

Table C7 Logistic regression results for the likelihood of being persistently NEET at ages 15–19 by socio-demographic characteristics for the Y06 cohort

Covariates	Level	*B*	Standard error of *B*	df	*p*-value	Odds ratio
Sex	Female	-0.0214	0.0510	1	0.6746	0.958
Indigenous status	Non-Indigenous	-0.2794	0.0933	1	0.0027	0.572
ESCS	Lowest quartile	0.3653	0.0863	1	<.0001	2.225
	Second quartile	0.1599	0.0834	1	0.0552	1.812
	Third quartile	-0.0908	0.0875	1	0.2992	1.410
Geographic location	Provincial	0.1845	0.1317	1	0.1610	1.044
	Remote	-0.3262	0.2361	1	0.1670	0.626
Completed Year 12	No	0.4503	0.0576	1	<.0001	2.461
Home language	Language other than English	-0.3802	0.1329	1	0.0042	0.467
Had children ages 15–19	Yes	1.1126	0.1184	1	<.0001	9.255

Note: For ESCS the reference category is the top quartile (least disadvantaged), and for geographic location it is city.

Table C8 Logistic regression results for the likelihood of being persistently NEET at ages 20–24 for those who were early persistently NEET for the Y03 cohort

Covariates	Level	*B*	Standard error of *B*	df	*p*-value	Odds ratio
Sex	Female	0.3175	0.0581	1	<.0001	1.887
Indigenous status	Non-Indigenous	-0.1762	0.1376	1	0.2004	0.703
ESCS	Lowest quartile	0.4385	0.097	1	<.0001	1.877
	Second quartile	0.0250	0.0977	1	0.7979	1.241
	Third quartile	-0.2723	0.101	1	0.0070	0.922
Early persistent NEET	Yes	0.5550	0.1574	1	0.0004	3.034
Geographic location	Provincial	0.0284	0.1484	1	0.8481	1.083
	Remote	0.0233	0.2628	1	0.9294	1.078
Completed Year 12	No	0.4032	0.0762	1	<.0001	2.240
Home language	Language other than English	-0.0153	0.1094	1	0.8888	0.970
Had children ages 15–19	Yes	0.7433	0.1645	1	<.0001	4.422

Note: For ESCS the reference category is the top quartile (least disadvantaged), and for geographic location it is city.

Table C9 Logistic regression results for the likelihood of being persistently NEET at ages 20–24 for those who were early persistently NEET for the Y06 cohort

Covariates	Level	*B*	Standard error of *B*	df	*p*-value	Odds ratio
Sex	Female	0.0671	0.0522	1	0.1980	1.144
Indigenous status	Non-Indigenous	-0.1124	0.1229	1	0.3602	0.799
ESCS	Lowest quartile	0.3951	0.0946	1	<.0001	2.119
	Second quartile	0.0299	0.0906	1	0.7412	1.471
	Third quartile	-0.0693	0.0867	1	0.4239	1.332
Early persistent NEET	Yes	0.8426	0.0766	1	<.0001	5.393
Geographic location	Provincial	-0.1339	0.1178	1	0.2557	1.059
	Remote	0.3248	0.1986	1	0.1019	1.675
Completed Year 12	No	0.2750	0.0759	1	0.0003	1.733
Home language	Language other than English	-0.0279	0.1062	1	0.7927	0.946
Had children ages 15–19	Yes	1.0376	0.2140	1	<.0001	7.967

Note: For ESCS the reference category is the top quartile (least disadvantaged), and for geographic location it is city.

Table C10   Logistic regression results for the likelihood of studying for or achieving a certificate III or higher by age 24 for those who were early persistently NEET for the Y03 cohort

Covariates	Level	B	Standard error of B	df	p-value	Odds ratio
Sex	Female	0.2331	0.0497	1	<.0001	1.594
Indigenous status	Non-Indigenous	0.2537	0.1208	1	0.0357	1.661
ESCS	Lowest quartile	-0.6907	0.0831	1	<.0001	0.272
	Second quartile	-0.1564	0.0822	1	0.0570	0.463
	Third quartile	0.2341	0.0849	1	0.0058	0.685
Geographic location	Provincial	-0.0568	0.1330	1	0.6692	0.882
	Remote	-0.0119	0.2384	1	0.9601	0.922
Early persistent NEET	Yes	-0.6000	0.1557	1	0.0001	0.301
Completed Year 12	No	-0.5618	0.0630	1	<.0001	0.325
Home language	Language other than English	0.3303	0.1133	1	0.0035	1.936
Had children ages 15–19	Yes	-0.3171	0.1812	1	0.0800	0.530

Note: For ESCS the reference category is the top quartile (least disadvantaged), and for geographic location it is city.

Table C11   Logistic regression results for the likelihood of studying for or achieving a certificate III or higher by age 24 for those who were early persistently NEET for the Y06 cohort

Covariates	Level	B	Standard error of B	df	p-value	Odds ratio
Sex	Female	0.2669	0.0505	1	<.0001	1.705
Indigenous status	Non-Indigenous	0.2141	0.1135	1	0.0593	1.534
ESCS	Lowest quartile	-0.4234	0.0912	1	<.0001	0.389
	Second quartile	-0.3162	0.0825	1	0.0001	0.433
	Third quartile	0.2184	0.0855	1	0.0106	0.739
Geographic location	Provincial	-0.0896	0.1239	1	0.4692	0.947
	Remote	0.1251	0.2176	1	0.5654	1.174
Early persistent NEET	Yes	-0.6349	0.0784	1	<.0001	0.281
Completed Year 12	No	-0.4683	0.0684	1	<.0001	0.392
Home language	Language other than English	0.3800	0.1253	1	0.0024	2.138
Had children ages 15–19	Yes	-0.0704	0.2038	1	0.7299	0.869

Note: For ESCS the reference category is the top quartile (least disadvantaged), and for geographic location it is city.

Table C12   Logistic regression results for the likelihood of being in employment at age 24 for those who were early persistently NEET for the Y03 cohort

Covariates	Level	B	Standard error of B	df	p-value	Odds ratio
Sex	Female	-0.1880	0.0450	1	<.0001	0.687
Indigenous status	Non-Indigenous	0.0641	0.1247	1	0.6070	1.137
ESCS	Lowest quartile	-0.0317	0.0880	1	0.7190	1.107
	Second quartile	0.1190	0.0825	1	0.1493	1.287
	Third quartile	0.0462	0.0772	1	0.5497	1.197
Early persistent NEET	Yes	-0.2177	0.1604	1	0.1748	0.647
Geographic location	Provincial	0.0167	0.1234	1	0.8925	0.947
	Remote	-0.0876	0.2179	1	0.6875	0.853
Completed Year 12	No	-0.1755	0.0705	1	0.0128	0.704
Home language	Language other than English	-0.1382	0.0804	1	0.0856	0.759
Had children ages 15–19	Yes	-0.1850	0.1722	1	0.2827	0.691

Note: For ESCS the reference category is the top quartile (least disadvantaged), and for geographic location it is city.

Table C13   Logistic regression results for the likelihood of being in employment at age 24 for those who were early persistently NEET for the Y06 cohort

Covariates	Level	B	Standard error of B	df	p-value	Odds ratio
Sex	Female	-0.03920	0.0429	1	0.3610	0.925
Indigenous status	Non-Indigenous	0.20510	0.1071	1	0.0555	1.507
ESCS	Lowest quartile	-0.02560	0.0871	1	0.7687	1.005
	Second quartile	0.00199	0.0776	1	0.9796	1.033
	Third quartile	0.05420	0.0727	1	0.4559	1.088
Early persistent NEET	Yes	-0.52640	0.0747	1	<.0001	0.349
Geographic location	Provincial	0.00489	0.1133	1	0.9656	0.983
	Remote	-0.02650	0.1983	1	0.8938	0.953
Completed Year 12	No	-0.04470	0.0730	1	0.5405	0.915
Home language	Language other than English	-0.26550	0.0765	1	0.0005	0.588
Had children ages 15–19	Yes	-0.41530	0.1839	1	0.0239	0.436

Note: For ESCS the reference category is the top quartile (least disadvantaged), and for geographic location it is city.

Appendix D: Main activities for the persistently NEET by gender

Note that the table totals for the activities only include individuals once for a given activity, so the overall total in the last column is less than totals for each wave. However, some individuals will have reported more than one activity and in that sense will be counted more than once. Also, for the overall totals in the last column, the total for NILF and unemployed is less than the sum of the NILF or unemployed across waves as individuals are only counted once (not for each wave they were NILF or unemployed).

Table D1   Wave-by-wave activity for females who were in a persistently NEET block at interview point for the Y03 cohort

Activity	W2 2004		W3 2005		W4 2006		W5 2007		W6 2008		W7 2009		W8 2010		W9 2011		W10 2012		Total	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Study or training	0	0	0	0	0	0	0	0	0	0	2	4	1	2	1	2	0	0	4	2
Home duties or looking after children	0	0	11	85	12	80	16	94	17	94	41	79	48	84	44	77	50	75	118	72
Travel or holiday	0	0	1	8	0	0	0	0	0	0	3	6	3	5	4	7	6	9	15	9
Ill or unable to work	0	0	0	0	1	7	0	0	0	0	2	4	2	4	7	12	8	12	12	7
Other	0	0	1	8	2	13	1	6	1	6	4	8	3	5	1	2	3	4	15	9
Total	**0**	**0**	**13**	**100**	**15**	**100**	**17**	**100**	**18**	**100**	**52**	**100**	**57**	**100**	**57**	**100**	**67**	**100**	**164**	**100**
NILF	0	0	13	46	15	56	17	53	18	75	52	72	57	74	57	72	67	83	146	65
Unemployed	0	0	15	54	12	44	15	47	6	25	20	28	20	26	22	28	14	17	80	35
Total	**0**	**0**	**28**	**100**	**27**	**100**	**32**	**100**	**24**	**100**	**72**	**100**	**77**	**100**	**79**	**100**	**81**	**100**	**226**	**100**

Table D2   Wave-by-wave activity for males who were in a persistently NEET block at interview point for the Y03 cohort

Activity	W2 2004		W3 2005		W4 2006		W5 2007		W6 2008		W7 2009		W8 2010		W9 2011		W10 2012		Total	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Study or training	0	0	0	0	0	0	1	33	2	40	3	25	1	10	2	14	0	0	8	15
Home duties or looking after children	0	0	1	33	2	40	0	0	1	20	0	0	0	0	4	29	4	24	10	18
Travel or holiday	0	0	0	0	0	0	0	0	0	0	1	8	0	0	2	14	3	18	5	9
Ill or unable to work	0	0	0	0	2	40	1	33	0	0	4	33	3	30	2	14	4	24	11	20
Other	0	0	2	67	1	20	1	33	2	40	4	33	6	60	4	29	6	35	21	38
Total	**0**	**0**	**3**	**100**	**5**	**100**	**3**	**100**	**5**	**100**	**12**	**100**	**10**	**100**	**14**	**100**	**17**	**100**	**55**	**100**
NILF	0	0	3	20	5	36	3	23	5	50	12	29	10	28	14	42	17	53	43	35
Unemployed	0	0	12	80	9	64	10	77	5	50	30	71	26	72	19	58	15	47	80	65
Total	**0**	**0**	**15**	**100**	**14**	**100**	**13**	**100**	**10**	**100**	**42**	**100**	**36**	**100**	**33**	**100**	**32**	**100**	**123**	**100**

Table D3   Wave-by-wave activity for females who were in a persistently NEET block at interview point for the Y06 cohort

Activity	W2 2007		W3 2008		W4 2009		W5 2010		W6 2011		W7 2012		W8 2013		W9 2014		W10 2015		Total	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Study or training	0	0	1	7	2	5	0	0	0	0	0	0	1	2	0	0	1	3	5	3
Home duties or looking after children	5	63	8	54	23	55	25	63	15	50	15	94	30	70	33	87	24	83	90	60
Travel or holiday	0	0	1	7	5	12	7	18	1	3	1	6	1	2	3	8	1	3	20	13
Ill or unable to work	0	0	2	13	2	5	2	5	0	0	0	0	5	12	2	5	0	0	10	7
Other	3	38	3	20	10	24	6	15	14	47	0	0	6	14	0	0	3	10	24	16
Total	**8**	**100**	**15**	**100**	**42**	**100**	**40**	**100**	**30**	**100**	**16**	**100**	**43**	**100**	**38**	**100**	**29**	**100**	**149**	**100**
NILF	11	37	15	39	42	40	40	60	30	64	16	52	43	75	38	70	29	71	118	50
Unemployed	19	63	23	61	62	60	27	40	17	36	15	48	14	25	16	30	12	29	119	50
Total	**30**	**100**	**38**	**100**	**104**	**100**	**67**	**100**	**47**	**100**	**31**	**100**	**57**	**100**	**54**	**100**	**41**	**100**	**237**	**100**

Table D4   Wave-by-wave activity for males who were in a persistently NEET block at interview point for the Y06 cohort

Activity	W2 2007		W3 2008		W4 2009		W5 2010		W6 2011		W7 2012		W8 2013		W9 2014		W10 2015		Total	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Study or training	0	0	0	0	1	3	1	10	1	14	0	0	0	0	0	0	1	17	4	7
Home duties or looking after children	1	33	5	33	4	14	2	20	1	14	4	57	2	17	2	22	2	33	18	33
Travel or holiday	0	0	1	7	10	34	1	10	1	14	1	14	4	33	1	11	3	50	22	40
Ill or unable to work	0	0	1	7	0	0	3	30	1	14	1	14	6	50	2	22	0	0	4	7
Other	2	67	8	53	14	48	3	30	3	43	1	14	0	0	4	44	0	0	7	13
Total	**3**	**100**	**15**	**100**	**29**	**100**	**10**	**100**	**7**	**100**	**7**	**100**	**12**	**100**	**9**	**100**	**6**	**100**	**55**	**100**
NILF	4	25	15	38	29	30	10	26	7	23	7	39	12	36	9	31	6	27	43	25
Unemployed	12	75	25	63	67	70	28	74	23	77	11	61	21	64	20	69	16	73	126	75
Total	**16**	**100**	**40**	**100**	**96**	**100**	**38**	**100**	**30**	**100**	**18**	**100**	**33**	**100**	**29**	**100**	**22**	**100**	**169**	**100**