# Schoolchildren in Paid Employment 

## A SUMMARY OF RESEARCH FINDINGS



## ACKNOWLEDGEMENT

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## EXECUTIVE SUMMARY

This paper summarises the state of knowledge surrounding New Zealand schoolchildren in employment to early 2010. It brings together formative publications from earlier in the decade, more recent published research findings and summary findings from analyses undertaken by the Department of Labour in late 2009 on a number of existing data sets (previously unanalysed for this purpose).

The report takes a principled approach to data presentation and analysis. It uses the most recent and credible data sets and research findings where the information on a particular issue is available. It does not seek to list every research finding on each of the priority domains identified, but where divergences in research findings emerge, these are documented and commented upon.

Key findings are organised across three main domains; employment participation (including participation rates, types of work and times of work), employment conditions (including employment agreements, pay rates and health and safety experiences) and impacts of extracurricular employment on education and employment outcomes. The paper concludes with a discussion focused on gaps in our knowledge base, identification of current research activities throughout New Zealand and identification of strategic priorities for further research.

## Key findings

## Participation

Participation in part-time employment is a common activity for many New Zealand schoolchildren, with around $40 \%$ of secondary school students working in regular part-time employment during the school term. Schoolchildren, particularly females, are increasingly likely to participate in regular paid part-time employment as they get older. Participation rates increase steadily from around a fifth for 11-year-olds (mainly boys) to more than half for 16 and 17 year olds (with a slightly higher proportion being female).

Students are primarily motivated to work to earn money, typically for spending on extra items for their personal use, while a smaller proportion of older students are saving for study-related reasons. While relatively few students are working to earn money for their families, students from higher deprivation areas and Pacific students are more likely than other groups to indicate that this is a motivation.

Students are participating in a range of roles, which vary substantially between males and females and change as schoolchildren get older. Younger students are most likely to be doing babysitting and cleaning (mainly females) and outdoors work like gardening and newspaper deliveries (mainly males). As secondary schoolchildren get older, they become increasingly likely to work in retail and hospitality.

Most secondary school students in regular part-time employment work a moderate number of hours each week. Two-thirds work less than 10 hours a week, while around $15 \%$, mainly older students, work more than 15 hours a week. Most younger students (aged 14 and under) work less than 5 hours a week. Students typically work on 1-3 days per week, with more than half of those in work working Saturdays. Younger students are more likely to work during the week after school while older students are more likely to work evenings and weekends. Of concern, $6 \%$ of students are working more than 20 hours a week in their regular part-time jobs - a figure generally considered excessive and likely to impact negatively on subsequent educational outcomes.

## Employment conditions

Secondary school students in employment have low levels of awareness surrounding their employment rights, low rates of union membership and a $50 \%$ likelihood of having a formal written employment agreement. Older students, typically working in larger organisations, are more likely to have formal written agreements, while younger employees, more likely working for family or friends of the family, are less likely to.

Lack of awareness of rights coupled with low union membership present heightened risks for schoolchildren who, by virtue of their youth and lack of experience in the workplace, may be more vulnerable to economic exploitation and injury than older workers. Many schoolchildren employees report trusting their employers to the extent that they will do work that they consider unsafe, while a small proportion will do an unsafe task because they are afraid they will lose their job if they do not. Under the Health and Safety in Employment Act (1992) employees have the right to refuse work they consider unsafe.

Injuries are a common and occasionally serious occurrence in school children's workplaces, with one-sixth of secondary school students in part-time work reportedly being injured at work in the past year. While half of these injuries appear to be relatively minor, around a fifth were severe enough to warrant a visit to a medical professional or hospital. Some industries are more prone to injury and harm than others. For example, construction, agriculture and hospitality appear to be particularly risky industries for school children.

While relatively few of the injured children blamed their employers for workplace accidents, it appears that employers are not effective in raising schoolchildren's awareness of hazards, nor their rights, in the workplace as expected under the Health and Safety in Employment Act (1992). One study found that a third of secondary school students indicated that their employers had not provided them with any information about workplace hazards. Inadequacies in training and supervision in their workplaces were also frequently reported.

With regards to pay, schoolchildren on the whole appear to be well or at least fairly paid. In 2007 one study found that three-quarters of secondary school children in work were being paid the youth minimum wage rate (for 16 and 17 year olds - set at $80 \%$ of the adult wage) or higher (at the time, $\$ 9.00$ per hour). While half were receiving between the youth rate and the adult minimum wage
hourly rate, a quarter were being paid at or above the adult minimum wage per hour.
Schoolchildren are increasingly likely to receive the minimum wage set for 16 and 17 -year-olds as they get older, with just under half of 13 year olds, over half of 14 year olds and two thirds of 15 -year-olds in one survey study receiving the minimum youth rate in 2007. Reflecting age-related rates of pay and hours worked, 13 to 14 -year-olds are most likely to take home between $\$ 20-50$ per week, while 15 to 17 -year-olds are more likely to take home $\$ 50-100$, with over a third of 16 -year-olds and over $40 \%$ of 17 -year-olds taking home more than $\$ 100$ per week.

While most school children appear to be paid fairly for their services, nearly $10 \%$ of 16 -year-olds and $5 \%$ of 17 -year-olds in the above 2007 study reported earning less than the youth minimum wage, which was then, and remains now, illegal in the context of a formal employment relationship. Further, there is some indicative data suggesting that a small proportion (at around five to ten percent) of intermediate and secondary school students earn very low hourly rates or are not receiving any pay, which, while not illegal for under 16 year olds, or for 16 and 17 year olds working on the family farm for example, may be a further cause for concern. Due to methodological concerns surrounding these studies however, we are unable to determine the extent to which self reported rates of pay are inappropriately low. ${ }^{1}$ This area has been identified as a priority for more robust research moving forward.

## Impacts of extracurricular activity on education and employment outcomes

Echoing the international literature, New Zealand studies indicate that, when limited to a moderate number of hours, part-time employment during the school term does not have a negative impact on scholastic achievements or subsequent employment outcomes. Some studies find positive outcomes associated with employment. One study, linking survey data with NCEA outcomes (Meyer et al., 2009a), found that Year 10 and 11 students engaging in regular part-time work of up to 15 hours a week in 2008 achieved more NCEA credits than students who did not participate in any part-time employment. The data suggests that optimal levels for Year 10 and 11 students sit at less than ten hours per week (and likely as high as 6-10 hours per week), but any level of work appears to be better than none, up to the detected threshold of 15 hours per week.

Similarly, some participation in sport is associated with higher NCEA level achievement than none at all or too much, suggesting that caregivers may have a critical role to play in supporting and monitoring their children's out of school extracurricular activities.

[^0]
## INTRODUCTION

This paper summarises the New Zealand research knowledge base for schoolchildren in employment, as at June 2010. It brings together formative publications from earlier in the decade, more recent published research findings and summary findings from analyses undertaken by the Department of Labour in late 2009 on a number of existing data sets (previously unanalysed for this purpose).

Key findings are reported in three main sections:

- Employment participation - including participation rates, types of work and times of work.
- Employment conditions - including employment agreements, pay rates and health and safety experiences.
- Impacts on education and employment outcomes.

The paper concludes with a discussion focused on gaps in our knowledge base, current research activities throughout New Zealand and strategic priorities for future research.

## Background

New Zealand has a tradition of schoolchildren participating in paid employment on a part-time basis during the school term and often for longer hours during term breaks. As at July 2009, there were around 760,000 schoolchildren in New Zealand, with some 280,000 students in secondary school, 130,000 in intermediate school and 350,000 in primary school. ${ }^{2}$

It is estimated that well over 100,000 secondary students work part-time in tandem with their school studies, with many intermediate and some primary students also working on a regular part-time basis. ${ }^{3}$ Schoolchildren are making a significant contribution to the New Zealand economy.

The Department of Labour has a high level goal of 'productive work and highquality working lives' and is actively working to develop productive, highperforming workplaces with healthy workplace cultures. ${ }^{4}$ For schoolchildren in work, it is particularly important that these early work experiences are:

- rewarding - productive for employers and beneficial to employees
- fair - reflecting reasonable working conditions, where employers and employees comply with employment relations regulatory standards

[^1]- safe - workplaces and workplace practices are healthy and protect individuals from physical or psychological harm.

The Department has a strategic interest in building a skilled workforce and believes that schoolchildren's participation in work should not compromise medium-term educational outcomes and longer-term employment prospects.

Therefore, the Department of Labour, and New Zealand society more generally, is building its understanding of schoolchildren's participation in employment. Our knowledge base is still in development but has improved markedly since the turn of the century, when Alison Todd observed that: "In New Zealand, there is little investigation into adolescent employment" (Todd, 2001, p10). A number of more recent studies have helped to build a clearer picture of the extent to which children and young adults aged 11-17 are engaged in employment, their employment conditions and experiences and the effects of their employment upon educational and subsequent employment outcomes.

The broader context for this research summary is the international and local debate surrounding the effects of employment on schoolchildren (Larson and Verma, 1999; Todd, 2001; Bachman, Safron, Sy and Schulenberg, 2003; Woodhead, 2004; Gasson, 2005; Ramchand, Lalongo and Chilcoat, 2007). ${ }^{5}$ Supporters of children's participation in employment say that a moderate amount of part-time work is positive for children, building life experience, confidence, financial and time management skills, a sense of responsibility and other human capital qualities likely to facilitate improved employment outcomes in later life. Others, echoing an international debate on child labour, worry that children are vulnerable to exploitation, may be more acutely exposed to occupational stress, injury or illness, may be more susceptible to negative behaviours (such as substance abuse) and risk poor educational outcomes due to competing time commitments. While some argue for abolition of child labour, others want tighter restrictions placed on children's employment in New Zealand (such as the introduction of a minimum age for paid work outside the home ${ }^{6}$ ) and/or existing

[^2]regulations more rigorously enforced (such as restricted duties for children under 15 and $16^{7}$ ).

New Zealand educators are generally supportive of students engaging in parttime work in principle (Gasson, Linsell, Gasson and Mundy-McPherson, 2003), but they do voice concerns. Under the Education Act (1989), paid work must not interfere with the education of children up to age 16 . Concerns expressed typically relate to some students working long hours and/or being exposed to health and safety risks through the course of performing their duties. International studies have identified that most students gain positive educational and personal outcomes from participation in part-time work during the school term and do not necessarily suffer personally or academically, as long as it is kept within reasonable limits up to a general threshold, which varies from 10-20 hours per week (Quirk, Keith and Quirk, 2001; Mihalic and Elliot, 1997; Stern and Briggs, 2001). In New Zealand, this threshold has been estimated to be about 15 hours per week during the school term by Gasson et al. (2003) and 20 hours per week by Maloney (2004).

## Formative New Zealand studies ${ }^{8}$

Two large-scale studies from earlier in this decade provided the first credible insights into the extent to which New Zealand schoolchildren participate in work, the types of work they do, their experiences and perceptions of the work and employment conditions and challenges faced.

## Young People and Work (Gasson et al., 2003)

In 2003, the Department of Labour commissioned a team of researchers from the Dunedin College of Education to review the literature about children in work and to survey schoolchildren to find out more about the kinds and amount of work they were engaged in. The study randomly surveyed 2,000 school students aged 11-15 attending 20 state intermediate and high schools in Auckland City and Manukau City. The study found that a third of these students were working.

Key findings were as follows:

- Older students were more likely than younger students to work.
- Students from low decile schools and Asian and Pacific students were less likely to be in employment.
- There was no difference between the proportion of boys and girls in work overall, but types of work were, not unexpectedly, gendered. Girls were more likely to be doing sales and service work and to work after school (mainly cleaning, cooking, babysitting and shop work), while boys were more likely to

[^3]be doing delivery and labouring work such as manufacturing and to work during the week and on weekends.

- Two-thirds ( $67 \%$ ) worked less than 8 hours per week. A small proportion ( $10 \%$ ) were working more than 15 hours a week, and $5 \%$ worked more than 20 hours.
- Pay rates generally increased with age. The mean rate of pay was $\$ 6.30$ per hour, not far off the youth minimum wage in 2003 for 16-17-year-olds of $\$ 6.80$ per hour. Instances of low pay rates were observed, with some students earning less than $\$ 2.00$ per hour.
- In terms of motivation, most students I work said they worked to earn money ( $91 \%$ ), with $8 \%$ of the working school children reporting that the money was for their family.
- Students in work were more likely to spend more time doing homework, suggesting that working students were generally more motivated. Almost half of respondents indicated work had impacted on time available to spend on other activities, including school work.
- The majority of participants ( $58 \%$ ) did not think it was appropriate for a minimum age for employment to be introduced, while around a quarter (27\%) did. Those that did not want a minimum age cited reasons including the right to work, valuing the pay, enjoying participation and benefiting from work experience. Those that supported the introduction of minimum age legislation did so on the grounds that children may not perform duties correctly, may be exploited or have less time for school or socialising.

Gasson et al. (2003) carefully considered the debates in international and local literature about the value and risks of part-time employment for schoolchildren in New Zealand. The research concluded that moderate levels of part-time work (up to around 15 hours per week) are advantageous to adolescents and no age limits should be imposed on schoolchildren in intermediate and secondary schools (see also Gasson, 2005).

## Protecting Children at Work: Children's Work Survey 2003 (Caritas, 2003)

Caritas - the Catholic agency for justice, peace and development - undertook an indicative survey ${ }^{9}$ of over 4,800 children aged 10-17 in New Zealand Catholic schools. The study found that around $40 \%$ were participating in some form of work (excluding home chores and study-related school work). Similar patterns from the Gasson et al. (2003) study were observed, with older schoolchildren being more likely to be in work, to work longer hours (generally less than 15 hours), to work on weekends and to work in the retail, service and food industries. Younger schoolchildren in work were more likely to work less than 10 hours per week, to work in the afternoon after school and to do delivery and service work (such as cleaning, gardening and lawn mowing).

[^4]Using a range of open-ended and forced-choice questions, the Caritas study identified a number of concerns relating to employment practices. Responses suggested that - while not the norm - illegal, unsafe and exploitative practices related to schoolchildren may be occurring in New Zealand workplaces, but due to methodological constraints surrounding the study (including sampling procedures and broad definitions of 'work' ${ }^{10}$ ), it is difficult to assess the extent to which these findings are indicative of exploitation or poor employment practices generally. However, the study is very useful for identifying risks and issues for further research, and some data is used in the course of this review.

The Caritas (2003) study found:

- high levels of informal employment relationships, especially for younger schoolchildren, with just over a quarter of children under 15 having a formal written agreement - technically, everyone working should have an employment agreement, but the study does not specify who the 'employer' is in these circumstances (for example, a parent)
- incidences of children earning low levels of pay, with documented cases of children earning less than $\$ 2.00$ per hour
- incidences of children working excessive hours - in one case, up to 35 hours in a week
- incidences of children under the age of 16 working between 10 pm and 1 am, which is illegal unless there is an Approved Code of Practice
- occurrences of schoolchildren having work-related accidents that resulted in personal harm to the extent that they required professional medical care
- incidences of young children operating heavy machinery and driving tractors, which is illegal
- incidences of children accessing alcohol through work.


## Aims of this study

This study seeks to summarise the most recent information available on the types, conditions and the amount of work that New Zealand schoolchildren are involved in, their perceptions of that work and the effects this work has on children's subsequent educational and employment outcomes. In particular, it seeks to explore variations in participation by ethnicity, gender, socio-economic factors and location. The overall purpose of this review is to consolidate our understanding of schoolchildren's participation in employment, to bring together discrete pieces of work into one place, to identify key gaps in the knowledge base and prioritise future research.

## Method

A number of studies are used to inform this research stock-take. Research used is of two main types:

[^5]
## 1) Recent New Zealand published research reports and peer-reviewed journal articles

- Young People and Work (Gasson et al., 2003) - see above.
- Protecting Children at Work: Children's Work Survey 2003 (Caritas, 2003) see above.
- Health and Safety Knowledge of Young Workers: A Study of School-aged Parttime Workers in the Taranaki Region (Pugh, 2007). This research surveyed students from the 13 secondary schools in the Taranaki region about their work participation and health and safety experiences. There were 3,200 responses - just under half ( $46 \%$ ) of Taranaki's Year 9-13 students (aged approximately 13-18). This study is limited by its regional specificity, but it does have a large number of participants representing a wide range of demographics in the region.
- Delivering the Goods. A Survey of Child Delivery Workers 2006 (Caritas, 2006). Caritas interviewed 30 child postal delivery workers aged 10-16. The primarily qualitative study was not based on a nationally representative or randomly selected sample, but it provides some useful insights into the employment conditions for one of the more common types of younger schoolchildren's work.
- Motivation and Achievement at Secondary School: The Relationship Between NCEA Design and Student Motivation and Achievement: A Three Year Followup (Meyer, McClure, Weir, Walkey and McKenzie, 2009a). This longitudinal study follows large cohorts from a nationally representative sample of 20 secondary schools. A cohort of over 1,200 Year 10 students in 2005 were tracked to Year 13 in 2008. In 2006, an additional cohort of 2,100 Year 10 or 11 students were tracked to Year 12 or 13 in 2008. This study captures variables such as motivation and extracurricular activities, including work, and explores the impact of a range of student attributes on NCEA outcomes and NCEA effects on motivation.
- The Effects of In-school and In-tertiary Employment on Academic Achievement and Labour Market Transitions: Evidence from the Christchurch Health and Development Study (Maloney, 2004). This outcomes analysis of effects of part-time work on subsequent academic achievement and later labour market transitions used data from the longitudinal Christchurch Health and Development Study, which followed the progress of a cohort of children born in Canterbury area hospitals in 1977. The study was commissioned by the Department of Labour and Ministry of Youth Affairs to improve overall understanding of the youth labour market in New Zealand. 774 of the original 1,265 participants are able to be tracked through to age 25 , with employment data collected from age 13 (in 1990).


## 2) Recent (2009) analysis of existing data sets, undertaken specifically to inform this work

The main data sets utilised for this study are:

- Youth'07: National Survey of the Health and Wellbeing of New Zealand Secondary School Students. Youth'07 is the most comprehensive and representative survey of New Zealand schoolchildren in employment. This nationally representative point in time study was conducted from March to

October 2007 with over 9,000 randomly selected students from 96 randomly selected secondary schools. Students provided information on a variety of health and wellbeing issues, such as health concerns and school engagement, including concurrent participation in employment. A high-level summary report is available (Adolescent Health Research Group, 2008). Data was collected from the Youth'07 study archives by a Department of Labour representative in October 2009.

- Motivation and Achievement at Secondary School: While some reporting is available on the nationally representative Motivation and Achievement study discussed above (Meyer et al., 2009a), additional analysis from 2005 and 2008 has been undertaken by the study authors for the purposes of the current research.
- Follow-up analyses of the Health and Safety Knowledge Survey (Pugh 2007) discussed above. The Department is very grateful for the additional support provided by Jo-Ann Pugh, who was able to build on her 2007 analysis with ad hoc requests for more information in 2009. (Pugh, 2007; 2009 analysis).
- Adolescents' Paid Work Patterns - Information from the Competent Children, Competent Learners Study: Report to the Department of Labour (Hodgen and Wylie, 2009). The Competent Children, Competent Learners study (20002005) followed 500 Wellington region students from their final months of early childhood education in 1993 through their school years. The study was not designed to be nationally representative, but rather representative of different types of early childhood education experience. As a result, the study is regionally specific, over-represents high-income families and under-represents Māori and Pacific people. However, indicative findings are relatively current, and the Department is grateful for the 2009 analysis undertaken by representatives of the New Zealand Council for Educational Research to inform this study. Census 2006 provides a useful tool for exploring official industry and occupational classifications for children aged 15 and older in work. It is limited by using a proxy for schoolchildren in work, as there is no formal category for school attendance. The proxy employed is for $15-16$-year-olds in full-time study and in part-time work.
- Longitudinal Christchurch Health and Development Study (2009 analysis). To test and elaborate on some of the themes observed in this study, the Department undertook some specific analysis of this cohort study tracking the development of 1,265 babies born in Canterbury area hospitals in 1977. While not a nationally representative sample, the study is useful for observing student participation in paid employment at ages 13-16 over the 1990-1993 period. The experiences of 961 13-year-olds were captured in the 1990 interviews.
- ACC administrative data. This data set enables us to observe the extent to which children are making work-related accident compensation claims and the types of injuries underlying this.
- Follow-up analysis of the Young People and Work Survey (Gasson et al., 2003) discussed above. The Department is, once more, very grateful for the additional support provided by Dr Ruth Gasson and her colleagues, who were able to build on the 2003 analysis with ad hoc requests for more information in 2009. (Gasson et al., 2003; 2009 analysis).

This report takes a principled approach to data presentation and analysis. It uses the most recent and credible data sets and research findings where the information is available. It does not seek to list every research finding on each of the priority domains identified, but where divergences in research findings emerge, these are documented and commented upon. This approach is taken to build a robust and contemporary yet streamlined and accessible picture of schoolchildren's participation in employment.

## EMPLOYMENT PARTICIPATION

## Engagement in paid employment

A number of recent, highly credible national surveys enable us to build a clear picture of the extent to which secondary school students are engaged in regular part-time, holiday and occasional or casual work.

## Most secondary students work at some stage

Overall, the nationally representative Youth'07 survey found that just under three-quarters (73\%) of New Zealand secondary students worked for pay in some capacity at some stage during the past year. Two-fifths (39\%) of all students worked in regular part-time employment during the school term, while just over a quarter ( $27 \%$ ) worked during the school holidays. $14 \%$ worked occasionally during the term.

Participation in regular part-time and holiday work increases with age
In line with the previous research cited, there is a clear linear relationship to age. Older students are significantly more likely than younger students to have worked in the past year. Less than half ( $46 \%$ ) of secondary school students aged 13 or under worked in the past year, and just over half ( $54 \%$ ) of 14 -year-olds did. By age 16 , over three-quarters ( $76 \%$ ) had participated in some form of paid work, and over $80 \%$ of secondary students still in school aged 17 and over had participated in some form of paid work. Figure 1 shows that participation in regular part-time work and school holiday work both increase with age, while the number of students not working at all falls with age.

Figure 1 also shows that working in regular part-time employment is the most frequent kind of work for students of all ages, followed by school holiday work. While a quarter of 13 -year-olds and under and $31 \%$ of 14 -year-olds participate in regular part-time work, over half of 16-17-year-old school students do with 15-year-olds sitting in the middle (on 38\%). Occasional work is the least likely form of work across all ages and does not appear to alter with age.

Based on 2009 school roll numbers, it can be estimated that around 110,000 secondary school students are in regular part-time work during the school term, with 76,000 working during the holiday period. ${ }^{11}$ Based on the survey data and 2009 year level rolls, for indicative purposes only, we might 'guesstimate' that there are around 15,000 13-year-olds, 19,000 14-year-olds, 24,000 15-yearolds, 27,000 16-year-olds and 24,000 17-year-olds in school who work in regular employment during the school term. However, this extrapolation rests on some broad assumptions. ${ }^{12}$

[^6]Figure 1: Participation in different forms of paid employment during the previous year, by age


Source: Youth'07 survey (Adolescent Health Research Group, 2008a)
These high-level findings, of age being directly correlated with participation in part-time employment, are supported by other New Zealand research (for example, Pugh, 2007; Hodgen and Wylie, 2009). Other research, although not nationally representative, is useful for providing an indication of participation for even younger age groups:

- The Competent Children, Competent Learners study found that just under a quarter ( $24 \%$ ) of the Wellington region participants were in part-time work at age 12 ( 121 of 496 students).
- Gasson et al.'s (2003) study found that $19 \%$ of 11 -year-olds worked after school or at weekends. ${ }^{13}$

More recent analysis of the Gasson et al. (2003) data indicates that many students in work started working for pay at earlier ages, with the line of reduced participation continuing to fall steeply from age 11 (19\%). $5 \%$ of workers in the 2003 study reported starting work at age 9, and $2 \%$ reported starting at age $7 .{ }^{14}$ It appears that, whilst a small minority, an observable proportion of children start working for pay from as young as age 7 or 8 . This echoes the work of the Caritas (2006) study, which found that a small proportion of young delivery workers

[^7]hired their younger siblings to help them fold papers in preparation for actual delivery.

## Other demographic variations in work participation

Age is clearly and directly related to the likelihood of adolescents and young adults participating in paid work, but other demographics are also likely to play a role.

Females are slightly more likely than males to participate in part-time work overall, but males are more likely to start work younger

- Overall, females appear slightly more likely than males to be in part-time paid work. While this pattern appears to persist over a range of studies, the nationally representative Achievement and Motivation and Youth'07 studies found relatively small differences. The 2005 Motivation and Achievement study data found that, of the 1,166 female secondary students surveyed, $45 \%$ were in work versus $41 \%$ of the 1,052 males surveyed. The Youth'07 study found a closer relationship, with $40 \%$ of secondary school female students in work compared to $38 \%$ of males
- In younger age groups, males are more likely to be working, while females are more likely to be working in older age groups. The 2009 analysis of the NCEA and Motivation and Achievement study found that a third (33\%) of male Year 10 students were in part-time work versus $28 \%$ of females. ${ }^{15}$ While these were equal in Year 11 ( $40 \%$ ), by Year 12, $58 \%$ of females were in work versus 50\% of males. Similarly, the Competent Children, Competent Learners study found that $27 \%$ of males were in work by age 12 versus $21 \%$ of females. By age 14, this had evened out (33\%). The Youth'07 study found that, at ages 13 and 14, male participation in regular part-time work was 6-7 percentage points higher than for females, but by age 15 , women were slightly more likely to work ( 40 versus $37 \%$ ), and by age 16 , females were 9 percentage points more likely to be in regular part-time work ( $55 \%$ versus 46\%).

European New Zealanders and Māori are more likely to be in part-time work than Pacific and Asian secondary students

- Data from the 2005 Motivation and Achievement study indicates that European New Zealander secondary school students are most likely to be in part-time work (47\%), followed by Māori (40\%). School students who identify themselves as being of Pacific or Asian ethnicity appear much less likely to participate in work ( $30 \%$ and $27 \%$ respectively). Similarly, data from the Youth'07 study found that European New Zealanders were the most likely ethnic group to be in work (with $43 \%$ in part-time work), followed closely by Māori ( $40 \%$ ). Both groups were significantly more likely to be in regular parttime work than respective Pacific and Asian secondary school students (28\%).
- Greater likelihood for Māori and European New Zealand secondary schoolchildren to be in work starts from a young age. The Youth'07 study data (2009 analysis) indicates that around $20 \%$ of $13-14$-year-old Asian and Pacific high school students are in work versus around $30 \%$ for Māori and

[^8]European New Zealanders. For ages 15-17, 32\% of Asian and 36\% of Pacific schoolchildren are in work versus just over $50 \%$ of Māori and European schoolchildren. Similar patterns emerge from the Motivation and Achievement study.

Schoolchildren from wealthier areas are more likely to participate in paid work than students from higher socio-economic deprivation areas ${ }^{16}$

- The Youth’07 study (2009 analysis) found that students from high socioeconomic deprivation areas were less likely to participate in regular paid parttime employment (35\%) than students with a middle or low deprivation index ( $40 \%$ each). Further, they were also less likely to work during the school holidays or occasionally during the school term - with $42 \%$ not working in the last year (versus $35 \%$ for students with a middle or low deprivation index).

These findings validate the earlier findings of Gasson et al. (2003), which found that students from low decile schools were significantly less likely to work than students from middle and high decile schools. This may be related to fewer connections to employment opportunities.

Schoolchildren from urban centres and rural areas have different work patterns, with rural schoolchildren more likely to work for pay overall

- Analysis of the Youth'07 data in 2009 found that, urban schoolchildren (at $39 \%$ ) were about as likely to work in a regular part-time job as rural schoolchildren (37\%), but that rural schoolchildren were more likely to work during the school holidays ( $42 \%$ versus $24 \%$ for urban schoolchildren) and slightly more likely to work occasionally during the year ( $17 \%$ versus $14 \%$ ). Rural schoolchildren in regular work are also more likely to start work younger.
- Overall, urban schoolchildren are far more likely not to have worked in any capacity over the previous year (39\%), compared to around a quarter of rural secondary schoolchildren (27\%). Collectively, the data indicates that rural students are more likely to be doing a combination of types of employment (regular, holiday and occasional) during the school year. ${ }^{17}$


## Types of work: occupations and industries

Studies exploring types of work use a range of classifications to summarise the occupations and industries adolescents and youth at school are involved in. Generally, unless these are official statistics (which are only available for people aged 15 or over), these are idiosyncratic to each particular study. However, clear themes emerge across the studies, which enable to us to draw some conclusions about the types of work youth are undertaking and how these vary across key

[^9]demographics. As is to be expected, types of work vary significantly by age and sex.

## Occupations - non-official statistics

The best illustration of the main types of work being undertaken is represented in Table 1, taken from the Youth'07 study (2009 analysis). This is the only nationally representative study that captures job types, although there are limitations. ${ }^{18}$ Patterns emerging from this and other related studies are summarised below.

Based on the Youth'07 study, the main types of work undertaken by youth in school over the past year are babysitting (23\%), shop work (22\%) and outside work ( $21 \%$ ), followed by cleaning ( $17 \%$ ) and working in a restaurant or takeaway food outlet ( $16 \%$ ). As can be seen in Table 1, proportions in the main occupations vary considerably by age and gender.

Key observations from Table 1:

- Females are three times more likely to engage in babysitting than males. Younger women in particular are engaging in this activity, and this peaks at age 14 , declining rapidly with age. Similarly, cleaning is also more likely to be undertaken by females and declines with age. This is consistent with other findings, such as the Department's 2009 analysis of the 1990s Christchurch longitudinal study data, which found that females were several times more likely than males to engage in babysitting from ages 13 through to 16 .
- Males, at nearly a third, are more likely to engage in outside work 'like gardening etc' and also odd jobs indoors (10\%), with both types of work peaking at younger age groups - 13 and 14. At around $10 \%$, females are much less likely to do outside work or indoor odd jobs (4\%).
- As children get older, they are more likely to engage in sales and servicerelated work in retail and hospitality-related employment and less likely to engage in childcare, outdoor work or cleaning. The Youth'07 study indicates that nearly a third of 16-17-year-olds in work are involved in sales or shop work and a fifth in supporting food outlets. These are industries in which females are more likely to work, and this finding is consistent with other studies and official statistics, discussed below, which have found that, by age 15 or 16 , retail and hospitality-related work are the most common forms of work-related activity.

Table 1 also gives a breakdown of proportions in different types of part-time work. Note that regular part-time shop work and hospitality-related restaurant/takeaway work become the most popular types of work - likely to reflect the growth in older schoolchildren engaging in regular part-time work.

[^10]Table 1: Types of work done by students who were in paid employment last year ${ }^{19}$

|  | \% Babysitting or looking after children | \% <br> Working in a shop, petrol station or supermarket | $\%$ <br> Doing outside work (like gardening, lawn mowing, fruit picking or labouring) | \% <br> Cleaning | \% <br> Working in a restaurant, fast food or takeaway place | \% <br> Doing food prep in a kitchen | \% <br> Working indoors, odd jobs like painting | \% <br> Selling door to door | \% Caregiving (for example, nurse aiding) | $\%$ Doing other types of work |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Male | 13 | 18 | 29 | 15 | 11 | 7 | 10 | 2 | 1 | 48 |
| Female | 36 | 26 | 11 | 20 | 20 | 10 | 4 | 1 | 2 | 34 |
| 13 years ${ }^{20}$ | 23 | 10 | 31 | 22 | 7 | 8 | 10 | 4 | 1 | 54 |
| 14 years | 29 | 13 | 26 | 22 | 10 | 7 | 9 | 2 | 1 | 48 |
| 15 years | 26 | 23 | 19 | 18 | 16 | 9 | 8 | 1 | 2 | 40 |
| 16 years | 21 | 30 | 17 | 16 | 20 | 9 | 6 | 1 | 1 | 37 |
| 17 years+ | 18 | 31 | 15 | 10 | 22 | 9 | 4 | 1 | 1 | 36 |
| TOTAL | 23 | 22 | 21 | 17 | 16 | 8 | 7 | 2 | 1 | 42 |
| Part-time only | 19 | 29 | 14 | 17 | 20 | 9 | 5 | 2 | 2 | 40 |

Source: Youth’07 (2009 analysis).

[^11]Similar findings on the changing face of work by age and gender have been documented through other studies.

The Competent Children, Competent Learners study (Hodgen and Wylie, 2009) found that, at $40 \%, 16$-year-old female schoolchildren in work are most likely to be employed in retail (versus $33 \%$ for males in the Wellington region). Around $30 \%$ of both males and females in work (of which females are more likely to be in work at this age, as discussed above) are involved in hospitality. The study found substantial drop-offs in participation in manual labour, babysitting and paper delivery by age 16 , compared to 12 -14-year-olds (all less than $10 \%$ by age 16 ).

Recent analysis of the Christchurch longitudinal study (2009 analysis) found that $38 \%$ of 16 -year-old females were working in retail and sales (in 1993). This was more than double the rate of participation in this industry for females at age 13 and around three times the rate for their 16-year-old male counterparts.

Other pertinent findings from the Youth'07 data:

- Not unexpectedly, rural youth are most likely to be involved in outside work (34\%), a rate nearly double the urban rate (18\%). They are less likely to work in shops ( $17 \%$ versus $23 \%$ for urban youth).
- By ethnicity, at 20\%, Pacific and Māori schoolchildren are more likely to be doing cleaning-related work than other groups (17\% for European New Zealanders and $12 \%$ for Asians). Asians are more likely to be working both in shops and eateries (both over 25\%), while relatively few do childcare or 'outside'-related work ( $10 \%$ versus $21 \%$ for the wider population). Māori, at $27 \%$, are most likely to be doing childcare work, followed closely by European New Zealanders at $25 \%$. Over a fifth of all groups engage in shop work. Similar patterns were observed by Gasson et al. (2003). In particular, it was noted that Asian students are far less likely to be involved in cleaning activities but more likely to be involved in delivery work.


## Delivery work

The Youth'07 study does not capture delivery work specifically, yet this appears to be a large element of schoolchildren's work - especially younger adolescents as indicated through other research. The Youth'07 study is likely to be understating the extent to which schoolchildren are undertaking delivery work, as this category is not specifically captured as a self-selected category. Deliverers may be selecting 'outdoor work' but more likely (given delivery is not included in the backyard-oriented examples provided), it may be being included in 'other work' - a large category (42\%), especially for younger and male workers (around 50\%).

Other studies, using different categories, indicate that significant proportions of young males engage in newspaper and circular delivery work, more so than for females. Gasson et al. (2003), for example, found that nearly a third (32\%) of schoolchildren in work aged 11-15 were doing delivery work. These were mainly males and younger children, with $45 \%$ of those aged 13 doing delivery work. Similarly, 2009 analysis of the Wellington-based longitudinal Competent Children, Competent Learners study (initiated in 1993) found that delivery of newspapers
and circulars was the most common form of paid activity for 12-year-olds in 2000/01, accounting for $60 \%$ of the jobs for 12 -year-old schoolchildren in work. In 2002/03, $30 \%$ of Wellington 14 -year-olds were still doing this kind of work, despite the merging of the main local morning (The Dominion) and evening (The Evening Post) newspapers into a single morning paper (The Dominion Post) over this period.

Caritas (2003) also found delivery work to be the main form of employment for younger workers (accounting for nearly three-quarters of 11- and 12-year-olds in work and a significant proportion of youth aged 13-15). Following up on this in 2006, Caritas took a case study approach to delivery workers, providing an interesting insight into the motivations and experiences for youth in this occupation - see the following section for more details on this study.

## Occupations - official statistics

The New Zealand occupational codings from the 2006 Census (employing the NZSCO99 classification system) provide a useful insight into the types of occupations undertaken by older schoolchildren. Using the traditional Census proxy for identifying schoolchildren, ${ }^{21}$ we can identify the main occupations older schoolchildren in part-time work (aged 15 and 16) are likely to be engaged in. Level 4 occupation codes from the Census data indicate that older schoolchildren, aged 15 and 16 are predominantly working in 15 of the 5,500+ level 4 NZSCO99 occupational codings. These top 15 occupations, accounting for $85 \%$ of schoolchildren in work, are outlined in Table 2.

Table 2: Main level 4 NZSCO occupational codings by age and sex

| NZSCO99 | Proportions of students in occupation (\%) |  |  |  |  |
| :--- | :---: | :---: | :---: | :---: | :---: |
|  | $\mathbf{1 5}$ years | $\mathbf{1 6}$ years | Males | Female | Total |
| 5123 Waiters and bartenders | 18 | 25 | 22 | 24 | 23 |
| 4211 Cashiers and ticket issuers | 11 | 20 | 14 | 24 | 19 |
| 9121 Messengers and doorkeepers | 9 | 4 | 6 | 17 | 12 |
| 9111 Caretakers and cleaners | 7 | 5 | 9 | 3 | 6 |
| 6125 Crop and livestock producers | 3 | 2 | 4 | 5 | 6 |
| 9151 Labourers | 3 | 2 | 5 | 2 | 3 |
| 6121 Livestock producers | 3 | 2 | 3 | 2 | 3 |
| 3315 Sales representatives | 2 | 2 | 2 | 2 | 2 |
| 9141 Packers and freight handlers | 2 | 2 | 3 | 1 | 2 |
| 4144 Office clerks | 2 | 2 | 1 | 2 | 2 |
| 5142 Childcare workers | 2 | 1 | 1 | 3 | 2 |
| 5122 Cooks | 1 | 2 | 2 | 1 | 1 |
| 6113 Gardeners and nursery growers | 2 | 1 | 2 | 1 | 1 |
| 3369 Sportspersons and related workers | 1 | 2 | 1 | 1 | 1 |

Source: Census 2006

[^12]Key observations from the Census 2006 data:

- At just under a quarter, the most common NZSCO occupational category for older school students is salespersons and demonstrators. This reflects the dominant category for older students aged $16+$ in the Youth'07 study. This is likely to include a large proportion working in retail, as discussed below. At one-fifth of older schoolchildren, waiters and bartenders is the next most frequent NZSCO classification. This is likely to include a large proportion of young people working in restaurants and cafés (as indicated in the industry section below). Cashiers and ticket issuers are next (12\%), followed by messengers, cleaners, farm workers and labourers.
- Young women are more likely to be waiters/bartenders than their male counterparts, while males are more likely to be labourers and messengers/doorkeepers.
- Overall, it appears that, as schoolchildren get older, they are more likely to work as cashiers, waiters and salespeople and less likely to work as messengers and cleaners and to work with crops/livestock.


## Industries of employment

Schoolchildren are concentrated in a limited range of industries - in particular retail, hospitality-related and agriculture.

## Unofficial statistics

Jo-Ann Pugh (2007) found that young adults in secondary schools (across Years $9-13$, aged 12-18) in Taranaki were most likely to work in one of three industries - the retail trade (for example, supermarkets and shops, at $31 \%$ ), hospitality (i.e. accommodation, cafés and restaurants, at $26 \%$ ) and agriculture, forestry and fishing (15\%), with significant numbers also in other services' (likely to include babysitting and cleaning), information media, arts and manufacturing. (See Table 3 for a breakdown of proportions by industry.)

Table 3: Industry concentrations for secondary school students aged 12-18

| Industry | Proportion of working schoolchildren <br> in industry (\%) |
| :--- | :---: |
| Retail trade | 31 |
| Accommodation, food and restaurants | 26 |
| Agriculture, forestry, fishing | 15 |
| Other services | 7 |
| Information media and telecommunications | 4 |
| Arts and recreation | 4 |
| Manufacturing | 3 |
| Construction | 2 |
| Transport, postal, warehousing | 2 |
| Professional, scientific and technical | 2 |
| Administrative, support services | 1 |

Source: Pugh, 2007 (2009 analysis)
Clearly, retail is the dominant employer of schoolchildren, and this is supported by the official statistics described below. To tease out this broad category, data
from the New Zealand Retailers Association annual survey may be of interest. In the 2009 survey, it was found that employees under the age of 16 were most likely to be working in supermarkets (20\%) or hardware, building and gardening businesses (20\%), with $15 \%$ working in the hospitality-related food, beverage and café businesses. Toys, sports/leisure and clothing were also common areas for retail work. ${ }^{22}$

## Official statistics

Official statistics support this finding of concentration of older school students in retail and hospitality. Using the ANZSIC 06 industry codes from the 2006 Census for 15 and 16 -year-olds in full-time study and part-time employment, ${ }^{23}$ high proportions are observed for retail and hospitality-related work, with relatively fewer numbers in agriculture. This is likely to reflect the older age groups represented in the Census, but possibly also the strength of the agricultural sector in the Taranaki region. Figure 2 represents industries for schoolchildren aged 15 and 16 in the 2006 Census. At 4\%, manufacturing is the fourth largest industry player for 15-16-year-olds, while the top three observed by Pugh (2007) remain the most likely.

Figure 2: Industry codes for 15 and 16-year-olds in full-time study and parttime employment (Census 2006)


In the Census data, retail is the largest employing industry of schoolchildren, with over a third of 15-16-year-olds in full-time study and part-time employment and

[^13]just under a third of all secondary school students from the Taranaki region working in the industry. This reflects the earlier findings presented from the Youth'07 study. Males and females are equally likely to be involved in retail, and older youth are more likely than their younger counterparts to do so, with $39 \%$ of 16 -year-olds versus $33 \%$ for 15 -year-olds.

In other industries, males are more likely than females to work in agriculture ( $10 \%$ of males versus $4 \%$ of females), while older youth and females are more likely to work in hospitality ( $25 \%$ of females versus $16 \%$ of males, and $23 \%$ of 16 -year-olds versus $19 \%$ of 15 -year-olds).

## Hours in work

A number of studies indicate that most school students in work are not working excessive hours but that a small persistent proportion is working more than 20 hours per week.

Figure 3 (from the nationally representative Youth'07 study) indicates that students in regular part-time work most typically work less than 10 hours a week (over two-thirds at $68 \%$ ), while around $15 \%$ are working more than 15 hours a week during the school term. $6 \%$ are working more than 20 hours a week. A similar pattern was reported by Gasson et al. (2003) for schoolchildren aged 1115. As indicated in the introduction to this report, there is no consensus in the international literature as to what constitutes an excessive amount of part-time work, though thresholds at 15 hours and 20 hours are commonly cited.

Figure 3: Proportions of school students in work by hours worked in regular part-time work each week


Source: Youth'07 (2009 analysis)

## Key demographic trends in hours worked in regular part-time work

As expected, the number of hours worked in regular part-time employment each week varies by key demographics, most notably by age:

Older students are working longer hours, and younger students work fewer hours
Younger students in regular part-time work (aged 14 and under) typically work less than 5 hours a week. Nearly three quarters (or $71 \%$ ) of secondary school students aged 13 or under and $60 \%$ of 14 -year-olds work less than 5 hours a week

Students aged 15 or over are much more likely to work 5-10 hours a week, with most 15 -year-olds in work working between $1-10$ hours a week ( $69 \%$ ) with a fairly even mix working $0-4$ hours ( $37 \%$ ) and 5-10 hours (32\%).

School students aged 16 and above become increasingly likely to work between $5-10$ and $10-15$ hours a week, with most students working between $5-15$ hours per week ( $60 \%$ ). A quarter of 16 -year-olds and students 17 years or older work 10-15 hours a week, and a third work 5-10 hours a week.

Relatively few secondary school students work 15-20 hours a week (9\%), but those that do follow the established age-related trend, with very few younger students working these longer hours (3\% of secondary students aged 13 or younger), increasing in a strong linear fashion to $13 \%$ of secondary students aged 17 or more.

A very small proportion of students work in excess of 20 hours per week
The Youth'07 study found that $6 \%$ of students worked more than 20 hours per week during the school term. This is consistent with the earlier Gasson et al. (2003) study, which found that $5.5 \%$ of students were working in excess of 20 hours. Students working excessive hours are most likely to be older, as expected, but this relationship does not hold for those working 30+ hours. For those working 20-30 hours (4\%), there appears to be a strong relationship based on age with very few ( $1 \%$ ) of 13 -year-olds or younger working these long hours, building up to $5 \%$ of 16 -year-olds. For those working $30+$ hours ( $2 \%$ ), there does not appear to be any relationship with age. These appear to be outliers - high unusual incidences - that occur across all age groups at secondary school. For example, the Youth'07 study found that $2.5 \%$ of 13 -year-olds worked in excess of 30 hours per week.

Figure 4 demonstrates age variations in participation in regular part-time work.

Figure 4: Hours worked weekly in regular paid employment, by age


Source: Youth'07 (2009 analysis)

## Variations by other demographic variables

The number of hours in employment is most heavily affected by age, but variations are also associated with other demographic variables including sex, area deprivation index, geographical location and ethnicity.

Females work longer hours, but males are more likely to work excessive hours. Gasson et al. (2003) found that $25 \%$ of females who work are working more than 12 hours a week, compared to $17 \%$ of males. The Youth'07 males are more likely to work less than 5 hours per week than females ( $40 \%$ versus $34 \%$ ). This is likely to reflect the observation made above that males are more likely to start work at an earlier age, where younger children typically work fewer hours per week, with more females working in older age groups. The older female-associated occupations of sales and service work are also associated with longer hours, while male-dominated labouring is associated with fewer hours (Gasson et al., 2003). While females are more likely to work a substantial but moderate number of hours, the Youth'07 study found that males are twice as likely to work excessive hours, with $8 \%$ working more than 20 hours a week (versus $4 \%$ for females). Given the relatively few working excessive hours, it appears that, overall, females work more hours than males.

Rural schoolchildren tend to work longer hours than their urban counterparts. The Youth'07 study found that urban schoolchildren are more likely to work in lowlevel part-time employment of less than 5 hours per week ( $38 \%$ versus $33 \%$ for rural children) and to work excessive hours, with $9 \%$ of those in work working more than 20 hours per week versus $5.5 \%$ of urban schoolchildren.

Students from high deprivation areas, while less likely to work in regular part time employment, are more likely to be working excessive hours. At $11 \%$, the Youth'07 study indicates that schoolchildren in part-time work from areas of high social deprivation are more than twice as likely to work excessive hours than their
counterparts from medium and low deprivation areas (5\% and 4\% respectively). This may reflect family need, but it is also likely to reflect greater participation in school-supported training opportunities for youth such as the Gateway programme.

By ethnicity, Asian schoolchildren in work are more likely to work fewer hours, while Pacific and Māori schoolchildren appear more likely to work longer hours. At $42 \%$, the Youth'07 study found that Asian schoolchildren in work are most likely to work less than 5 hours per week. This observation is supported by the Motivation and Achievement study data, which indicates that, at Year 11, over three-quarters of Asian students in work are working less than 5 hours per week (far more likely than any other ethnic group). The Youth'07 study also found that nearly a fifth of all Pacific and Māori youth in school and in part-time work were working more than 15 hours a week ( $19 \%$ versus $15 \%$ for Asian and $13 \%$ for European New Zealanders). At 12\%, Pacific students were most likely to be working more than 20 hours per week versus $9 \%$ for Māori, $7 \%$ for schoolchildren of Asian ethnicity and European New Zealanders the least likely at 4\%. This may reflect findings discussed in a later section to this report ${ }^{24}$ - that Pacific youth were more likely to be working, at least in part, to bring in money for the wider family than other ethnic groups. These findings are consistent with the Gasson et al. (2003) Auckland study and the Maloney (2004) Christchurch-based study, ${ }^{25}$ which noted that a greater proportion of Pacific and Māori students in work were working longer hours.

## Times of work

## Days in work

Two studies are useful for determining the days students are in work.
The Youth'07 study asked students what days of the week they worked in the last week. Weekend work and particularly work on Saturdays is most common. Overall, over half of all school students in work worked on the previous Saturday ( $51 \%$ ), with $43 \%$ working on the Sunday. Mondays and Tuesdays are the least likely school days for working (32\%), building up to Friday as the most popular school day, with $41 \%$ of people indicating they worked for pay that day.

Weekend work is slightly more common for older students, with more than half of students aged 15 or over working on Saturdays (53\%), but less than half of students aged 14 or under ( $47 \%$ ). This may be indicative of the greater likelihood of older students, particularly females, working in retail and hospitality over the weekend.

From age 15 up, students become increasingly unlikely to work during the school week. On average, $45 \%$ of 13 -year-olds work on a given day during the school week but only $31 \%$ of 17 -year-olds do so. Combined with the number of hours data discussed above, this suggests that younger students are working for smaller periods of time on a more regular basis during the week.

[^14]Females are slightly more likely to work weekends than males, with 54\% of females working on Saturdays versus $49 \%$ of males. Males are much more likely to work during the week, with an average of $39 \%$ working on a given weekday versus $31 \%$ for females. This is likely to reflect males' greater likelihood for working at younger ages over smaller hours in delivery and outdoor type work.

Weekend work, particularly Saturdays, is more likely for the particular populations noted to be working excessive hours, namely rural ( $60 \%$ versus $50 \%$ for urban youth working Saturdays), Pacific ( $61 \%$ working Saturdays) and students from high deprivation areas (59\% working Saturdays). These populations were more likely to work Sundays also, with the exception of Pacific people, who, at $37 \%$, were the least likely to, possibly due to religious observance. This suggests that the long hours are being accumulated primarily during the weekends. However, it would also suggest many, particularly Pacific youth, are working during the week. Gasson et al. (2003) found that students working longer hours were twice as likely to work a mix of weekend and weekday work than students working less than 12 hours per week. ${ }^{26}$

## Most students work on 1-3 days per week (75\% of schoolchildren in employment)

At one-third, the most common number of days on which students work is 2 per week ( $32 \%$ ). This is followed by a just over a fifth of students working on 1 day a week only ( $22 \%$ ) and another fifth working on 3 days ( $21 \%$ ) a week. See Figure 5 for the distribution across the number of days students worked on.

At nearly a fifth, males are more likely to be working on 5 or more days per week than females ( $18 \%$ versus $10 \%$ ), while females are more likely to be working on 3 days or less ( $80 \%$ versus $70 \%$ ). Males and females are equally likely to work on 4 days at around $10 \%$ each. This probably reflects women being more likely to work on weekends than males, who start work younger and are more likely to work during the week.

Members of all age, gender and ethnic groups are most likely to work on 2 days per week, with the exception of Pacific males who are just as likely to work on 3 days per week (with a quarter working each of 2 and 3 days) and Pacific females who are most likely to work on one 1 day per week ( $28 \%$ ).

Relatively few people work on more than 4 days per week. $10 \%$ of workers reported working on 4 days per week, and this declined to $7 \%$ working on 5 days, $4 \%$ working on 6 days and $3 \%$ working on all 7 days of the week. At $6 \%$, Asian workers are most likely to work on 7 days per week, while Pacific and European New Zealanders are the least likely ethnic groups to (2\%). At 9\%, 13-year-old students are the most likely to be working on 6 days per week, with this dropping with age to $2 \%$ for 17 -year-olds. This likely reflects delivery work for younger

[^15]students. Pacific students are the next most likely group to be working on 6 days per week (7\%).

Figure 5: Distribution of number of days worked


Source: Youth'07 (2009 analysis)
Complementing the Youth'07 study and helping build our picture of days of student employment, Gasson et al.'s (2003) study of Auckland and Manukau cities' schoolchildren provides some useful observations of workday time patterns. Table 4 summarises workday times of work by age arising from the study.

Table 4: Time of work by age

| Time | $\mathbf{1 1}$ years | $\mathbf{1 2}$ years | $\mathbf{1 3}$ years | $\mathbf{1 4}$ years | $\mathbf{1 5}$ years | Average |
| :--- | :---: | :---: | :---: | :---: | :---: | :---: |
| After school only | $39 \%$ | $30 \%$ | $31 \%$ | $23 \%$ | $14 \%$ | $27 \%$ |
| Weekends only | $13 \%$ | $23 \%$ | $36 \%$ | $20 \%$ | $19 \%$ | $24 \%$ |
| Mixture | $45 \%$ | $41 \%$ | $32 \%$ | $55 \%$ | $68 \%$ | $47 \%$ |

Source: Gasson et al. (2003) ${ }^{27}$

As seen in Table 4, younger students are the most likely groups to work after school exclusively, and this likelihood decreases with age, with students to age 15 increasingly more likely to work both during the week after school and during the weekend. Half of students aged 14 and over two-thirds of students aged 15 work both during the week after school and weekends (versus less than half of 11-13-year-olds). This resonates with the Youth'07 findings discussed above, which found that weekend work was most popular for older students and that most students worked for on more than 2 days per week (i.e. a mix of weekend and weekday).

[^16]
## Time of day in work

While evidence suggests that students working on weekends tend to work more hours on the weekend than do students during the week, we are currently not able to specify how many hours per day people are working or times of work for each day in work (for example, weekdays versus weekends). Overall, this is a gap in our knowledge.

In a comprehensive survey of 3,200 secondary school students in the Taranaki region, Pugh (2007) found that students working during the week worked 6 hours during the week on average, with students working on the weekend working 7 hours on the weekend on average (Pugh, 2007). This fits with the earlier observation that older students are more likely to work longer hours and on weekends.

While the Youth'07 study collected data on times of day worked 'over the past week' (conducted during the school term), the data is limited as it is not tied to particular days worked and we are unable to distinguish weekend work from weekday work. However, the data generates some interesting observations. Figure 6 presents times of day worked across age groups.

Figure 6: Distribution of times worked in last week by age


Source: Youth’07 (2009 analysis)
As can be seen in Figure 6, at least two-thirds of secondary students indicate that they worked between the hours of 3 pm and 7 pm at some point over the past week. This is not unexpected, as this would reflect after-school work during the week, and for those working on weekends, it would overlap with normal retail hours.

Key observations arising from the Youth'07 data include the following.

Between the hours of $9 \mathrm{am}-3 \mathrm{pm}$ and $7 \mathrm{pm}-10 \mathrm{pm}$, there is a strong relationship with age, with older schoolchildren more likely to be working during these times than younger students. This likely reflects:

- younger schoolchildren being less likely to work on the weekend (when presumably most students are working these weekday 'school time' hours) and more likely to work fewer hours (which presumably do not spill over into the evening)
- older students working in particular kinds of work, for example, retail and hospitality, while younger students are more likely to do delivery work and outdoor gardening, which is more likely to take place after school.

Students from all age groups appear to be working at some stage between the hours of $10 \mathrm{pm}-6 \mathrm{am}$ ( $7 \%$ overall). Working this late at night has been illegal for children under the age of 16 since April 2009 without special permission, ${ }^{28}$ but in 2007, at the time of this survey, $6-7 \%$ of $13-15$-year-olds reportedly worked after 10 pm during the previous week. We are unable to tell from the data whether these days were weekdays or weekends. Groups most likely to be working during these hours are Pacific and Māori ( $11 \%$ and $9 \%$ respectively), while males are more likely than females ( $8 \%$ versus $5 \%$ ) and students from high deprivation areas ( $8 \%$ ) are more likely than students from middle or low deprivation areas (both at 6\%). In many ways, these populations echo those groups identified as most likely to be working long and excessive hours in the earlier section on hours in work.
$17 \%$ of students work between 6 am- 9 am. Interestingly, at $20 \%$, children aged 13 or under are the most likely age group to work during this early morning period (presumably before school), possibly engaging in delivery work, babysitting or cleaning. At nearly a quarter (23\%), rural students are the most likely group to have worked during these times - most likely to include agricultural work. Pacific (at just under 23\%), male (20\%) and high deprivation area $(20 \%)$ students are also more likely to work between 6 am-9am than other groups. Each of these groups (bar the younger age group) are likely to be working longer hours.

## Motivations for work

A number of studies have asked schoolchildren why they work. Typically these converge on a small handful of themes - with one dominant motivation across all studies.

## Money is the driving motivation for work

Unsurprisingly, the most common reason given for work is money. The nationally representative Youth'07 study found that, when students were asked to identify the 'main reason' for working, three-quarters (76\%) indicated they worked in

[^17]order 'to have money of my own to spend on things I want'. A further $5 \%$ worked in order 'to save for study' (5\%), while a small proportion indicated they worked 'to get money for my family' (1.5\%).

## Some variations in response patterns were detected:

- At two-thirds, Asian (67\%) and Pacific (68\%) students were the least likely groups to report working for money for themselves.
- Older students aged 17 or over (9\%), females (6.5\%) and Asian (7.5\%) students were most likely to work in order to save for study. Māori (3\%), Pacific (1.5\%) and high deprivation students (4\%) were the least likely to.
- Family income is an important motivator for Pacific students (10\%) and, to a lesser extent, high deprivation students (4\%). At 1.5\%, the vast majority of the Youth'07 students were not working to supplement family income. While this rate was slightly higher for those working more than 20 hours per week ( $2.5 \%$ ), this motivation remains the exception rather than the norm. This means that, except in exceptional cases, those working to supplement family income are not driven to the extent that they are working excessive hours.

In the earlier survey located in Auckland and Manukau, Gasson et al. (2003) found similar results with money being by far the most commonly cited reason for working (91\%). Explanations given in open text fields were diverse and included 'having your own things', 'to have fun and to support your family', 'to save for college', 'for a sponsor child' and 'to give to my parents to pay power'. The higher proportion found in the Gasson et al. (2003) study likely reflects the more explicit option of choosing more than one option, while the Youth'07 study asked participants to indentify the 'main reason'.

## Other motivations for work

Non-financial reasons were also cited by students as a key reason for working. However, these were far less commonly cited than money in both the Youth'07 and Gasson et al. (2003) studies. The Youth'07 study, using the (implicitly single choice) 'main reason' question format, found that $6 \%$ stated the main reason for working was to gain skills and experience, $2.5 \%$ to please their parents and $2 \%$ for fun. Of note:

- Asian (13\%), older (8\%) and Pacific (8\%) secondary school students were most likely to work to gain skills and experience, while younger students, particularly those aged 13 or under, were least likely to (2\%)
- while Asian students were much more likely to work to please their parents ( $4.5 \%$ ), younger students aged 13 or under (4\%) and students of 'other' ethnicities (5\%) were more likely than other groups to work for fun.

Gasson et al.'s (2003) more inclusive approach to the question of 'why do you work' found that $41 \%$ ticked experience, $33 \%$ ticked independence and $31 \%$ ticked fun as the next most common categories, with a further $17 \%$ reportedly working because their parents or caregivers wanted them to.

## EMPLOYMENT CONDITIONS

We have a good sense of which industries schoolchildren are being employed in, their occupational types and their hours of engagement, but we know relatively less about the nature of their employment relationships, with patchy knowledge surrounding employment conditions. As part of the broader context, it appears that schoolchildren do not have a good understanding of their employment rights.

## Awareness of employment rights

School students' appear to have low levels of awareness around their employment rights, coupled with low rates of student membership:

- Gasson et al. (2003) found that, when asked about their employment rights in an open-ended question, few of the 11-15-year-olds in work were able to articulate (any) rights. Of those that responded to the question set, only $15 \%$ indicated they were aware of at least some employment rights, while around $40 \%$ stated that they did not know, and a third did not answer the specific question (interpreted as signalling a lack of knowledge in this area). A further $8 \%$ confused rights with role responsibilities.
- Caritas (2003) found that union membership rates were less than $10 \%$ across all age groups from 10-17 (typically 6-7\%). Low rates of union membership may result in (but also possibly from) a lack of advocates for employees in workplaces.

A lack of awareness surrounding employment rights, coupled with low union membership and lack of experience and maturity in many cases, renders schoolchildren in work particularly vulnerable to health and safety risks and economic exploitation. Instances of older schoolchildren's employment rights not being met can also be found in the following section on employment agreements, pay rates and health and safety.

It appears that part of the problem lies with employers. Pugh (2007) found that less than half of employees were given information on their employment rights in their current job - a requirement under the Health and Safety in Employment Act (1992). Employer understandings and practices in regards to explaining employment rights is an important area for further research.

## Employment agreements

The most useful insight into schoolchildren's employment agreements comes from Pugh's (2007) survey of over 3,000 secondary students in the Taranaki region, which found that half of student workers said they had a written employment agreement ( $49 \%$ ) while half did not ( $49 \%$ ), with $2 \%$ not knowing. Given it is a legal requirement to have one, this is a concerning outcome. Recent research has found that around $15 \%$ of the working population are estimated to either not have an employment agreement or do not know if they have one. ${ }^{29}$

[^18]
## Older children are more likely to have employment agreements

Closer analysis of the 2007 Taranaki schoolchildren data (Pugh 2007, 2009 analysis) indicates that the likelihood of having an employment agreement is strongly related to age, as can be seen clearly in Figure 7. As schoolchildren get older, they appear to become increasingly likely to have an employment agreement, with substantive increases from age 14 to 15 (from 27\% to 42\%), and again at age 16 (up to $61 \%$ ). By age $17,63 \%$ of the schoolchildren in employment from the study had a formal employment agreement.

Figure 7: Employment agreements by age


Source: Pugh 2007 (2009 analysis)
Caritas (2003) found a similar relationship with age, with a quarter of 10-12-year-olds having an employment agreement, rising to $56 \%$ of $16-17$-year-olds. The relationship with age is likely to reflect the types of work children undertake and the employers they are working for. Gasson et al. (2003) found that younger school students are more likely to be working for a family member or person known to the family than older school students. In the Gasson study, 39\% of secondary school students aged 11-15 worked for a family member or a business associated with their family, and this was more common among younger workers. As students get older, they become more likely to work for a non-family-related person or organisation and, we might reasonably assume, to enter more formal employment relationships.

## Likelihood of employment agreement varies by industry and occupation

As identified in earlier sections of this report, as adolescents get older, they also become more likely to work in particular industries and occupations (such as waitressing in accommodation, food and restaurants or shop work in retail) and less likely to engage in other forms of work (such as outside labouring in agriculture and cleaning in other service work). Some industries and occupations appear more likely to have employment agreements than others, and these appear to be highly related to the types of roles and responsibilities undertaken, with clear implications for the age of the workers employed. For example, Caritas (2003) found that younger children working in delivery were by far the most
likely group in this age band to have an employment agreement (for children aged 10-12 years, this accounted for $75 \%$ of agreements), while for older children, retail was the most likely source of employment agreements (accounting for $50 \%$ of agreements for 16-17-year-olds).

Figure 8 represents the proportion of schoolchildren in main industry groups with an employment agreement as identified by Pugh (2007; 2009 analysis). Note that these are ordered so that the major industry employers appear on the left-hand side of the graph, while those with relatively few employees are on the right. As previously indicated, the main employers found in the Pugh (2007) study are retail (31\%), hospitality-related accommodation, food and restaurants (26\%) and agriculture, forestry and fishing (15\%), followed at some distance by other services (6\%) and information media (4\%). Retail is the largest industry employer and is also the most likely industry (79\%) to have written employment agreements, while just under half of the next largest employer (accommodation, food and restaurants) has them and only $11 \%$ of the next largest (agriculture). Nearly half of information media workers have an agreement, many of whom are likely to be newspaper and circular delivery workers.

Figure 8: Written employment agreements by industry


Source: Pugh 2007 (2009 analysis)

## Gender variations

At 54\%, females are slightly more likely to have an employment agreement than males (46\%). This is likely to reflect the earlier observation that females tend to start work at a slightly older age than males and are more likely to work in older age groups, which are over-represented in retail and hospitality-related industries. Males are more likely to work in outdoor labouring work such as gardening in agriculture-related occupations, which appear to involve, at least for young males, less formal employment relationships.

## Content of employment agreements

While many schoolchildren in work do have employment agreements, we know relatively little about what is in the employment agreements, for example, whether they are collective or individual contracts and what sorts of leave provisions are specified. While some studies provide some useful insights, we lack good understanding of employment agreements for schoolchildren and how they might measure up against the wider population.

## Within industries, agreements can vary significantly

The Caritas (2006) case study on child delivery workers found that most were employed by one of three large distribution companies with written employment agreements. This may be a feature of work with larger non-family-related organisations with standardised operating procedures. The study found significant variations across these agreements in rates of pay, regularity of hours and leave provisions. For example, some employers regarded workers as employees (with sick pay and holiday pay entitlements), while others doing similar tasks were considered independent contractors. ${ }^{30}$ This had clear implications for the children involved with some being held directly responsible for finding a replacement should they be unable to deliver the goods on a holiday or due to sickness, while others were not.

## Leave provisions are not standard

Gasson et al. (2003) found that most 11-15-year-olds were not entitled to receive sick pay (60\%) in their main job or holiday pay (75\%). However, most believed they were allowed time off for special events such as sports or exams.

New research strategies are likely to be needed to explore schoolchildren's employment agreements where they exist in writing and otherwise. A case study method focusing on particular industries, similar to that used in the Caritas (2006) study, could be useful for building knowledge in key industries. An analysis of the 2008 Working Life Survey ${ }^{31}$ will also be useful for further exploration of older ${ }^{32}$ schoolchildren's written employment agreements, including the nature of these agreements (for example, casual versus permanent workers, collective versus individual contracts) and a range of employment conditions, which will be comparable to those of the wider working population. As discussed later in this report, analysis of this existing data set, augmenting the March 2008

[^19]Household Labour Force Survey, is likely to be a priority research activity in the short term.

## Pay rates

Information on pay outcomes for schoolchildren in work comes from a number of sources and enables us to build a picture of income earned by the hour and per week.

## Hourly earnings

The available data on hourly earnings suggests that the majority of schoolchildren are paid less than the adult (18+) minimum wage but that many receive wages comparable to the relative minimum wage rates for youth aged 16 and 17 (set at $80 \%$ of the adult minimum wage). ${ }^{33}$ Information on hourly rates for school students comes primarily from three main sources - Pugh's (2007) Taranaki study, Gasson et al.'s (2003) Auckland and Manukau study and 2009 analysis of the Christchurch Longitudinal Study.

Pugh's (2007) survey of Year 9-13 secondary school students in late 2007 found that three-quarters of schoolchildren in work were being paid the youth (16-17) rate or higher (at the time, $\$ 9.00$ per hour). While half were receiving between the youth rate and the adult minimum wage hourly rate, a quarter were being paid at or above the adult minimum wage per hour.

## Schoolchildren earn more as they get older

As shown in Figure 9, as students get older, they become increasingly likely to earn an hourly rate equal to or above the youth rate and less likely to earn less than the minimum wage. This is most marked between ages 15 and16, reflecting the implementation of the minimum wage for youth from age 16.

[^20]Figure 9: Distribution of relative earnings for secondary school students in paid employment


Source: Pugh (2007; 2009 analysis)
The amount earned by the quarter being paid below youth or new entrant rates is unclear. However, the study did find that $6 \%$ were not being paid at all (typically working in a family business or farm, according to the author). Of concern, nearly $10 \%$ of 16 -year-olds and $5 \%$ of 17 -year-olds reported earning less than the youth minimum wage at the time of the study - then and now, this is illegal. While this may reflect a lack of rights awareness for some schoolchildren or lack of assertiveness or choice, it may also reflect confusion for some school children in the calculation and reporting of hourly rates and/or obligations to perform tasks for a family business.

Other studies converge on the observation that wages increase with age.
Gasson et al. (2003) found a strong relationship between age and pay for students aged 11-15, with students in their early teens (aged 13-15) earning significantly more than 11-12-year-olds ( $\$ 6.75$ per hour take-home pay on average versus $\$ 4.50$ per hour for their younger counterparts). Reflecting the younger population, the study found that a smaller proportion overall (around half) were earning at least the minimum wage for 16-17-year-olds at the time.

The Christchurch longitudinal study found hourly rates for the schoolchildren in the cohort under study increased annually from 1990, when the 13 -year-olds were earning $\$ 3.60$ an hour, to $\$ 5.60$ an hour for 16 -year-olds in 1993 . During this period, there was no minimum wage level for youth under 20. Interestingly, while the 20+ minimum wage was set at $\$ 6.12$ an hour over this period, the mean annual income for 15-16-year-old schoolchildren in the study was higher than the (later) $80 \%$ benchmark. More details on subsequent employment and education outcomes for these schoolchildren are discussed later in the section on impacts on education and employment.

The relationship between age and wage levels is likely to reflect the skills and responsibilities attached to particular occupations. The Gasson et al. (2003; 2009
analysis) study found a strong relationship with type of work. Delivery and agricultural workers were most likely to earn less than $\$ 5.00$ an hour ( $50 \%$ and $46 \%$ respectively), while two-thirds of sales workers and service workers earned between $\$ 5.00-10.00$ an hour ( $64 \%$ and $66 \%$ ). This helps to explain much of the variation detected by age - as previously established, older workers are more likely to engage in retail work, while younger workers are more likely to work in outdoors-related activities.

As indicated through the Gasson et al. 2009 findings, retail workers appear to be relatively well paid, at least so for youth. More recently, in January 2009, the Retailers Association surveyed 131 members representing 259 staff under the age of 16 . The study found that, despite a lack of legislation for a minimum wage for 15 -year-olds, the average was relatively high at $\$ 10.67$ an hour, well up on the minimum new entrants rate for 16 -year-olds at $\$ 9.60$ per hour. At $\$ 11.50,15-$ year-old workers in chemists were best paid by the hour, while supermarket workers ( $\$ 9.50$ ) were the least well paid, falling behind the minimum wage rate for their older new entrant colleagues.

## Instances of low hourly earnings

Currently, there is no legal requirement to meet any hourly pay threshold for workers aged 15 or under. While this poses a risk of exploitation for schoolchildren and most under 16-year-olds appear to be being reasonably well paid, we are currently unable to determine the extent to which the risk of low pay rates may be being realised.

Two relatively recent informative studies (Caritas, 2003; Gasson et al., 2003) indicate that a small proportion of schoolchildren may indeed be earning very little per hour. However, these studies suffer from methodological flaws that limit the extent to which findings can be generalised.

The Gasson et al. (2003) study found that, in 2003, 4\% of schoolchildren aged $11-15$ received $\$ 2.00$ or less per hour (less than one-third of the youth minimum wage for $16-17$-year-olds at the time) and $12 \%$ received less than $\$ 4.00$ per hour (take-home pay). See Figure 10 for visual representation of pay distribution from the Gasson et al. (2003) study.

Methodological issues undermining the generalisability of the Gasson et al. (2003) findings include the low number of respondents, with only 157 students responding to the relevant questions regarding work and pay over the previous week. This is likely to indicate the difficulty for some children in specifying an hourly rate. Further, the definition of 'work' used in the Gasson et al. (2003) study included 'usually earning money' only and included parents as an example of employers.

Figure 10: Hourly pay rates (after tax) for 11-15-year-old schoolchildren in work


Source: Gasson et al. (2003)
Similarly, the Caritas (2003) study of 10-17-year-olds found that $11 \%$ of students reported receiving less than $\$ 2.00$ per hour. The Caritas study did not define work and included students doing 'home chores' (20\%) - mainly 11-12-year-olds - and also a small proportion doing voluntary work. The high-level statistics probably heavily overstates the extent to which schoolchildren working in any formal relationship may be receiving low pay rates.

Without more context surrounding these findings and more robust or tightly defined methodology, it is difficult to say if these instances of low pay are inappropriate or indeed represent evidence of a measurable rate of unfair employment practices and economic exploitation of schoolchildren in New Zealand. While ambiguities in questioning and low sample responses make it hard to determine the extent to which children in paid employment may be being poorly paid for the work they do, Caritas (2003) has documented three cases of students aged 11, 12 and 15 (two working as cleaners and one in a manufacturing role) working for less than $\$ 2.00$ per hour for employers outside of the family. This suggests that, at the very least, isolated instances of very low rates of pay or economic exploitation do exist in New Zealand. The study further found a theme for these children of money from this work going to their parents.

## Weekly earnings

The most recent and reliable data available from the Youth'07 study is not particularly detailed but is highly useful for an overall impression of the spread of weekly pay packets for those in regular part-time work. Overall, there is a wide range for take-home pay, with around three quarters (77\%) of the 3,200 secondary school students in part-time work taking home between \$10-200 per week.

As we would expect, given the greater number of hours in work and the relatively higher rates of pay received per hour by older age groups (as previously established), there is a clear pattern of older students reporting higher rates of 'usual take-home pay'.

The distribution of weekly earnings by age can be seen visually in Figure 11. While $40 \%$ of secondary school students reported taking home less than $\$ 30.00$ a week, these were mainly $13-14$-year-olds ( $68 \%$ of students aged 13 or under and $57 \%$ of 14 -year-olds). Relatively few older students reported earning less than $\$ 30.00$ a week ( $27 \%$ of 16 -year-olds and $19 \%$ of students aged 17 years or older).

Similarly, while over half of the secondary school students reported earning between \$50-200 per week, these were much more likely to be older students, with $67 \%$ and $72 \%$ of $16-17$-year-olds versus $25 \%$ and $34 \%$ for $13-14$-yearolds.

Figure 11: Take-home pay per week, by age (\$)


Source: Youth'07 (2009 analysis)

## High levels of take-home pay

Students from all age groups are represented across the full spectrum of weekly take-home pay packets, including the extremes of less than $\$ 10.00$ a week ( $5 \%$ ) and more than $\$ 300$ per week ( $4 \%$ ). As expected, all income brackets below $\$ 200$ a week are clearly age-related, with take-home pay packets of less than $\$ 50$ being less likely as students get older and take-home packets of more than $\$ 50$ more likely as students get older.

Reflecting age-related rates of pay and hours worked, 13-14-year-olds are most likely to take home between $\$ 20-50$ per week, while 15-17-year-olds are more likely to take home \$50-100, with over a third of 16 -year-olds and over $40 \%$ of 17 -year-olds taking home more than $\$ 100$ per week.

Perhaps less expectedly, there are no substantial differences across age groups for the $9 \%$ of secondary students reportedly taking home more than $\$ 200$ per week. Students most likely to report earning more than $\$ 200$ per week were:

- Pacific and Māori students ( $21 \%$ and $13 \%$ versus $6 \%$ of European New Zealanders)
- rural students ( $14 \%$ versus $7 \%$ of urban)
- males ( $13 \%$ versus $4 \%$ of females)
- from high deprivation areas ( $15 \%$ versus $7 \%$ and $6 \%$ for students from low and middle deprivation areas).

This is to be expected given that each of these demographic variables was associated with working excessive hours (see the section on hours in work above).

## Health and safety

A number of studies provide insight into the health and safety experiences of schoolchildren in work, with a general theme emerging of unsafe practices and resultant injuries being reasonably common. The most comprehensive New Zealand study on health and safety conditions and outcomes for schoolchildren in work was conducted by Jo-Ann Pugh from the Department of Labour (Pugh, 2007). The research systematically surveyed $3,200(46 \%)$ of Taranaki's Year 913 secondary school students (approximately aged 13-18) in late 2007. The study found that many students are injured in the course of their work and are working in a broader and potentially dangerous context of low health and safety in employment awareness and compliance. The Youth'07 study validates the prevalence of injury findings by providing nationally representative data on incidence rates and seriousness of injuries sustained for accidents and injuries in the workplace.

## Prevalence of injury

Workplace accidents and injuries appear to be common experiences for schoolchildren in work. Data from the Youth'07 study indicates that around onesixth (17\%) of secondary school students in regular part-time work report having had a work-related injury in the past year, with around half requiring medical treatment as a result . Similarly, in the Taranaki region, Pugh (2007) found that a fifth of secondary school students (20\%) reported being mentally or physically injured or developing an occupationally-related illness at some stage through their current part-time job.

Table 5: Students in part-time work reporting a work-related injury in the past year

| $\mathbf{1 3}$ years <br> and younger | $\mathbf{1 4}$ years | $\mathbf{1 5}$ years | $\mathbf{1 6}$ years | $\mathbf{1 7}$ years <br> and older | Total |
| :---: | :---: | :---: | :---: | :---: | :---: |
| $17 \%$ | $17 \%$ | $19 \%$ | $20 \%$ | $13 \%$ | $17 \%$ |

Source: Youth'07 survey, 2009 analysis of data by Department of Labour

## All age groups are at risk, with older students aged 15-16 slightly more at risk

The Youth'07 data indicates that older students (aged 15-16) may be slightly more likely to have had an injury than younger students (13-14), but this drops from a peak at age 16 (20\%) to $13 \%$ for students aged 17 or more. It's likely that the longer hours worked by senior students contributes to the heightened risk for older students aged 15 and 16 years. It is also possible that the kind of work undertaken by older students places them at greater risk. It may be that students aged 17 or older are more mature and experienced than other students
to the point where they are significantly less injury-prone than their younger counterparts.

## Injury rates vary slightly across key demographics, but most substantially by ethnicity

While likelihood of injury varies slightly across gender (females at $16 \%$ vs $19 \%$ for males) and deprivation index (low deprivation groups at $16 \%$ vs $19 \%$ for high deprivation groups), more substantial variations can be observed by ethnicity. At $14 \%$, Asian and Pacific populations were less likely to report being injured than Māori populations (at 19\%), while European New Zealanders sit on 17\%. Given that Asian schoolchildren work fewer hours, this is not unexpected for this group. However, with Pacific youth working long hours and most likely to be working over the school week and on Saturdays, this is a very interesting outcome. This may reflect the kind of work undertaken by Pacific youth - cleaning is the most typical activity at 20\%, as discussed above, alongside the reduced likelihood of Pacific and Asian youth to be doing 'outside' work. Further, it may be that the reduced likelihood of engaging in part-time work on Sundays may work in favour of Pacific students, providing important respite from the working school week. ${ }^{34}$

## Work-related injuries or illnesses reported are physical injuries

These consist mainly of cuts (30\%), burns (16\%), sprains and strains (15\%, mainly back-related), followed by bruising/crushing (14\%). 9\% reported a 'superficial' wound, while $4 \%$ sustained a fracture. The most common causes for these injuries were being hit by moving objects (28\%), followed by heat or energy ( $18 \%$ ), hitting objects with one's body (17\%), falling or tripping (17\%) or body stressing (14\%). ${ }^{35}$

## Some industries are particular risky for schoolchildren

Injuries at some stage in their current job were most typically reported for students working in the agriculture, forestry and fishing industry (with 32\% of employees reporting an incident), followed closely by construction (28\%), transport ( $27 \%$ ) and information media ( $26 \%$ ). Further, a quarter of student workers in manufacturing reported injuries, and around a fifth of those working in hospitality, wholesale trade and retail trade also reported injuries. According to Pugh (2007), the three largest impacting industries have long been overrepresented in ACC Statistics, and it is no surprise that this is also the case for schoolchildren in employment.

Some types of work are more dangerous than others
Using the Youth'07 'types of work' typology, it appears that, by volume, shop work (including petrol stations and supermarkets) and working in restaurants, takeaway outlets and other eateries are the largest contributors to workplace injuries, accounting for $60 \%$ of injuries to schoolchildren in regular part-time work. Perhaps this is not surprising given these are the most popular types of work (accounting for approximately half of all employee roles).

[^21]By proportion, caregiving appears to be the most dangerous role, with $34 \%$ of employees reporting an injury in the past year. This is followed by food preparation and eateries work ( $24 \%$ ) and selling door to door and odd jobs inside (both at $22 \%$ ). It should be noted that caregiving work has relatively low participation rates relative to others (see the earlier section on types of work) and accounts for $3 \%$ of part-time employee injuries only. See Figure 12 for a visual representation of schoolchildren employees by type of part-time work participation and injury outcomes.

Recent studies provide insight into the poor health and safety outcomes observed for two industries - agriculture and information media.

An investigation into risk factors on farms carried out by Otago University's Injury Prevention Unit (Cryer, Lovelock, Lilley, Davidson, Davie, McBride, Milosavljevic and Morgaine, 2009) found that school-aged children on farms (not specifically in work, it should be noted, with high rates of by-standing observed through other studies ${ }^{36}$ ) are routinely exposed to health and safety risks:

- This included children aged 5-9 riding as passengers on all terrain vehicles (ATVs) (54\%), trailers (36\%) and tractors (34\%), performing animal work ( $64 \%$ feeding stock and with a further $52 \%$ doing other stock work) and accompanying adults working on the property ( $46 \%$ ). Less frequently, these young children were also riding motorcycles (17\%), playing near farm machinery ( $16 \%$ ) and using firearms ( $6 \%$ ).
- Children aged 10-15 were increasingly likely to be exposed to all the health and safety risks listed above for 5-9-year-olds. Additionally, this population was observed to be operating ATVs themselves (42\%) and operating farm machinery ( $15 \%$ ). If used for the purposes of employment, both of these activities would be of questionable legality under the Health and Safety in Employment Act. The study also found that $60 \%$ of children aged $10-15$ used ear muffs when around noisy equipment, with a third (31\%) wearing safety boots in the course of their activities.

Previous research has found that children represent a significant proportion of all farm injuries, with nearly one-fifth of all injury on farms occurring in children aged 15 and younger (Marshall, Clarke, Langley and Cryer, 1996). Most disturbingly, of all work-related fatalities occurring between 1985 and 1998 for these children ( $n=87$, made up mainly of bystanders $-86 \%$ ), $39 \%$ occurred on a farm (Lilley, Feyer, Langley and Wren, 2004). Under the Health and Safety in Employment Act, employers are responsible for protecting all people who come into contact with workplaces. Early involvement in informal farm work as children accompany adults around the farm, coupled with greater exposure to hazards such as motor vehicles and farm machinery from a young age, appears to heighten the risks for young people on farms. See the severity of injuries section below for more information on child fatalities at work.

In a case study of child delivery workers ( $n=30$ ), Caritas (2006) found that several reported back pain, falling off their bikes and/or tripping over, often due

[^22]to heavy or uneven delivery loads, at some stage in their delivery work. While this usually was of little consequence, some did report minor ailments requiring plasters or ice. Some deliverers also reported scary episodes with dogs, with one deliverer reportedly being bitten ${ }^{37}$. The study found that, while parents were found to be very supportive in these environments, it appears a lot of the health and safety responsibilities for very young workers (with several deliverers below the age of 10 taking part in the study) necessarily fall on them, with limited support from the employer or manager responsible.

## Severity of injuries

Roughly half of accidents/injuries reported are minor. Of the $17 \%$ injured in the past year (as reported above), the Youth'07 study found that just under half of these injured students (at 46\%) did not require any form of medical treatment or result in taking time off school. Similarly, Pugh (2007) found that just under half of students with a work-related injury or illness reported it to their employer (43\%), with the main reason given for not reporting being that the injury was only minor (or 'no big deal').

The Youth'07 study found that just over half of all schoolchildren employees injured required some form (or combination) of medical intervention (54\%) with:

- a third ( $31 \%$ ) receiving treatment in the workplace or at home ( $6 \%$ of all secondary school students reporting being in work through the survey)
- $11 \%$ taking time off school to recuperate ( $2 \%$ of all secondary student workers)
- around a fifth, likely to have been more severely injured, requiring professional medical assistance - 17\% received treatment from a doctor (3\% of all secondary student workers) and $5 \%$ received treatment in a hospital ( $1 \%$ of all secondary student workers), with $3 \%$ staying in hospital for more than one day.

Outcomes for students in regular part-time work specifically are broadly similar, with $4 \%$ being treated by a medical professional within the past year. Figure 12 represents injury rates and medical treatment rates for regular part-time workers only, by main types of work, as detected through the Youth'07 study.

As can be seen in Figure 12, schoolchildren most likely to report being severely injured worked in shops (including supermarkets and petrol stations) or restaurants and fast-food outlets (accounting for two-thirds or $67 \%$ of all schoolchildren requiring work-related medical assistance). As can be seen in Figure 12, food preparation in a kitchen and odd jobs outside are particularly injury-prone occupations, with high rates of people being injured (over 20\%) in the past year and high rates of serious injury, requiring professional medical treatment ( $7 \%$ and $5 \%$ respectively). By proportion, schoolchildren working in caregiving and selling door to door were most likely to be severely injured ( $12 \%$ of each), though because participation rates in this kind of regular part-time work are low (see Table 1) these are not included in Figure 12.

[^23]Figure 12: Main types of regular part-time work by injury and medical treatment rates


Source: Youth'07 survey; 2010 analysis

## Work-related injuries resulting in ACC claims and fatalities

On average, from 2004-2008, 289 children under the age of 15 visited a doctor and made a work-related ACC claim each year. ${ }^{38}$ In line with the national rate (representing around $0.1 \%$ of all claims), this has been reducing steadily, down from 362 in 2004 to 249 in 2008. Of the 249 children making a claim in 2008, 147 were males and 102 were females.

Most claim-related injuries were sprains and strains (39\%), followed by open wounds (20\%) and contusions (8\%). Fractures (5\%), muscle and tendon injuries (3\%) and burns (3\%) were also commonly cited.

Over a quarter of claimants did not have a specified occupation. The main identified occupations were elementary occupations (17\%), personal and protective workers (12\%) and agriculture and fisheries workers (7\%), followed by salespersons and demonstrators (5\%), stationary machine operators (5\%) and drivers and mobile machine operators (3\%).

[^24]Most seriously, in the period from 1985-1998, 12 children identified as working at the time of the accident or commuting to work died (Lilley, Feyer, Langley and Wren, 2004). Nine of these children were working on farms, most typically children aged 10-14 years, riding motorcycles to shift stock. Of the remaining three, two were working as street milk vendors and one was delivering newspapers. Based on this analysis of historical data from the New Zealand Health Information Service, nearly one schoolchild a year dies in the course of his or her extracurricular employment. As discussed above, this is mainly on farms.

## Employee and employer responses to workplace health and safety issues

Students do not blame employers for their injuries, but many employers do not appear to be proactively engaged in injury prevention. Pugh (2007) found that over $90 \%$ of students blamed themselves ( $68 \%$ ) or a freak accident ( $29 \%$ ) for their injury. Only $5 \%$ blamed their work colleagues or their employers, with only $1 \%$ blaming their employers.

While three-quarters of students said they had adequate training (75\%) and twothirds had adequate supervision (66\%), the Pugh (2007) study identified a number of health and safety-related concerns:

- Having been informed of an incident, only a third of employers reportedly (by the students) took proactive steps to stop it happening again (including physical steps and retraining/supervision). A third of employers did nothing, while a third responded with medical care and/or non-specific advice to be more careful.
- A third of the school student workers (35\%) said they were not given any information on workplace hazards by their employer. Further, less than half of the young workers recalled being informed of their rights and responsibilities under the Health and Safety in Employment Act (as an employer is required to do, as well as providing workplace hazard information). While we do not have a comparison for older workers, it would appear that there is neglect for youth in terms of representation of health and safety requirements. Of note, the Caritas (2006) study found that most child delivery workers in their case studies had received at least some information on health and safety (with variable comprehensiveness). This improved rate perhaps reflects a higher degree of regulation in the industry (as seen in the higher rates of employment agreements for the child delivery workers) ${ }^{39}$.

A fifth of students in work reported being asked to do something they considered unsafe in their jobs (19\%). Similar findings have been reported elsewhere (for example, Anderson and Lamm, 201040). Pugh found that, when asked to do something they considered unsafe, the vast majority ( $88 \%$ ) of students did it anyway. The main reason given for completing the requested task was that the students trusted their supervisor (42\%), with a third (31\%) indicating that the task was not as dangerous as they initially thought. Clearly, a large proportion of

[^25]students have faith in their supervisors, and if young workers are more trusting and less likely to ask questions, this may heighten risks for them. Of further concern, a quarter did the unsafe task due to perceived pressure from the employer - just under 20\% did the unsafe task because they wanted to make a good impression and just over 15\% reportedly did it because they thought they would lose their job otherwise.

This small proportion of secondary school students in work doing unsafe work due to fear of being dismissed - around $2-3 \%$ of workers in the Pugh 2007 study highlights the risks of students not being aware of their employment rights. This finding underscores the importance of employers informing employees of their rights and responsibilities.

Further, the literature raises concerns about the extent to which employers are meeting other health and safety obligations, raising further risks for youth who may not have the maturity to deal with the (in many cases illegal) environments they are exposed to. Through open probing, Caritas (2003) found instances of:

- children under 12 driving vehicles and using heavy machinery on farms
- children under 15 using heavy equipment and driving vehicles
- children under 14 working in unsupervised babysitting roles
- children under 13 accessing guns (for hunting purposes)
- children under 16 accessing and drinking alcohol. Some students, including schoolchildren as young as 14, reportedly enjoying access to alcohol, for example, through 'drinks after work'.

Of similar concern, Anderson and Lamm's (2010) study of adult AUT students recalling their childhood employment experiences in New Zealand found indications that some employers may be reluctant to record and/or report workplace health and safety incidents involving schoolchildren to government departments, such as the Department of Labour or ACC. ${ }^{41}$

## Workplace influences on lifestyles and health behaviour

Missing from the New Zealand literature is an understanding on how prevalent the risky health behaviours cited above may be. Also missing is an understanding of how working in adult workplaces could impact on children's health in the longer term, specifically through exposure to and subsequent uptake of negative health behaviours and other lifestyle choices. International literature suggests that exposure to alcohol, drugs and tobacco in workplaces can increase the likelihood of schoolchildren subsequently taking up these behaviours themselves (Ramchand, Lalongo,and Chilcoat, 2007; Bachman, Safron, Sy and Schulenberg, 2003). As indicated by the Caritas (2003) study, some schoolchildren are exposed to alcohol and cigarette smoking from a young age. While no prevalence statistics are provided by the study, these observations may be the tip of the iceberg due to instances emerging through open-ended questions about perceived 'good experiences' in work (discussed below).

[^26]
## Perceptions of work

A useful insight into schoolchildren's perceptions of the conditions of their workplaces and employment come from free-text responses to open-ended questions. Two studies have explored students' perceptions of work in this way. Gasson et al. (2003) asked students to identify the good and bad things about having a job, while Caritas (2003) asked students to share good and difficult experiences at work.

## Positive experiences and outcomes from work

When asked to identify the good things about having a job, Gasson et al. (2003) found that:

- $91 \%$ of students talked about the financial rewards, with $57 \%$ referring to this exclusively - older children were more likely to write about this
- fun and meeting people (as classified by the researchers) was the next most frequently written about good thing (18\%), followed by the building of experience ( $15 \%$ ) and independence ( $14 \%$ ). Younger children referred to fun more often than older children, while teenagers were more likely to refer to independence than 11-12-year-olds.

When asked about good experiences at work, Caritas (2003) found that:

- two in five ( $41 \%$ ) cited earning money and financial bonuses
- a similar amount ( $39 \%$ ) cited meeting new people and making friends and positive interactions with bosses, customers and colleagues - including family
- a fifth (19\%) valued learning new skills
- just under one in ten (8\%) cited receiving praise, accomplishment and building of self-respect
- there were also instances reported of negative health behaviours under this section, accessing alcohol and heavy machinery (discussed above).


## Negative experiences and outcomes from work

When asked to identify the bad things about having a job, Gasson et al. (2003) found that:

- nearly two-thirds of students lamented the loss of time (63\%), with $53 \%$ referring to this negative outcome exclusively - reasons included socialising ( $31 \%$ of those lamenting loss of time), a quarter indicated they spent less time doing homework, and other activities affected included sleep (20\%), recreation (22\%) and sport (18\%)
- a quarter referred to boredom, tiredness and discomfort
- $8 \%$ thought some elements of their workplace were unfair (for example, paying taxes, getting bossed around, not getting on with people, pay not enough).

When asked about negative experiences at work, Caritas (2003) found that:

- nearly a fifth cited making mistakes, boredom, tiredness and embarrassment ( $18 \%$ ) while the same proportion said that the physical environment could be negative (including dogs for deliverers, working in bad weather, too hot or cold workplace)
- negative contact with people (at $15 \%$ ) was reasonably common, including working with people you don't get along with and being 'hit on' - 8\% reported
having a negative experience with their boss, including being 'growled at' for using equipment wrongly and being 'told off' for being late
- $10 \%$ did not like the work being physically hard or unpleasant (including carrying heavy loads), while 5\% voiced workload issues (for example, too many envelopes to stuff, sheep to dock, cars to wash) and $3 \%$ complained about pay (for example, pay cut for being late, low pay rate, no pay rise).

As discussed earlier in this report, following up on the 2003 study that identified delivery as the dominant occupation for younger schoolchildren aged 10-12, Caritas (2006) conducted a case study on young delivery workers, providing an interesting insight into the motivations and experiences for youth in this occupation. The study found that, overall, deliverers liked their work, with participants typically reporting feelings about their work that ranged from neutral to very positive. Deliverers reported enjoying getting paid, keeping fit and meeting people/making friends. When asked what they did not like, bad weather was the main complaint followed by doing preparatory work like folding material, time taken away from other activities (typically watching TV or sleeping in) and unfair pay (especially when pamphlets are large and heavy).

While children are typically having rewarding experiences at work (generally financial, social and personal growth in nature), it appears that many are also having negative experiences, which may reflect poor employment conditions. In particular:

- Some children are paid poorly, for example, young delivery workers who are sometimes required to fold, prepare and carry large loads for the same rate of pay as small loads. The Caritas case study on delivery workers (2006) found several cases of children earning less than $\$ 3.00$ an hour, with one case estimated to be $\$ 1.67$ an hour. These children were identified as being in a 'take it or leave it' situation with regards to their ongoing employment.
- Some children report being overworked, resulting in tiredness and fatigue. It is not clear if these situations occur as part of normal job experiences or may be part of working excessive hours or in dangerous conditions (where the work is too strenuous or loads are too heavy to be considered safe).
- Employers may not be meeting their legal obligations under the Health and Safety in Employment Act and other legal obligations including restrictions on alcohol.


## IMPACTS ON EDUCATION AND LONGER TERM EMPLOYMENT OUTCOMES

In recent years, a number of studies have been undertaken in New Zealand to determine the impact of part-time employment on New Zealand schoolchildren's subsequent academic and employment-related outcomes. A common theme across these studies indicates that moderate amounts of extracurricular part-time employment for adolescents does not impede subsequent educational or postschool employment outcomes. Further, studies suggest that there may be benefits to participation in part-time employment when students are at school. These findings resonate with much of the international literature. Research into this area is ongoing.

## Recent New Zealand studies

## The longitudinal Christchurch Health and Development Study (Maloney, 2004)

This 2004 analysis, commissioned by the Department of Labour, explored the effects of work for pay on Canterbury-born school students' subsequent academic performance and longer-term labour market outcomes. The study used the personal, family, school, employment and other characteristics of 774 participants in the longitudinal study. While the study originally started with 1,200 babies born in Canterbury hospitals in 1977, only the 774 were able to be tracked through to age 25 . Employment participation was tracked from age 13, with around onethird working in employment from age 13-16 and nearly two-thirds working at some point during this period.

It should be noted that assessing the impact of participation in employment is difficult because of the influence of additional factors on any regression model. For example, more motivated students may be more likely to participate in paid work and to do well academically. On the other side of the equation, factors such as low motivation for schooling may lead some students to work more hours and concentrate on education less (as is the case in many Gateway or school-based work experience programmes). This study found that students from more disadvantaged backgrounds were more likely to work, thus bringing a bias to the sample. Without controlling for background factors, the study found that mean hours of work were associated with poorer school performance, but that this did not reflect participation in employment particularly. Holding background effects constant in a more inclusive regression model (including classroom performance, cognitive ability and scholastic aptitude), the study came to two key conclusions.

## Participation in part-time work had no effect (positive or otherwise) on academic

 achievement across national examinations- No statistically significant impact (positive or negative) of the numbers of hours in work on students' likelihood of sitting national (Year 11) School Certificate examinations (administered at around age 16). The study further found that a youth's IQ, conduct problems and associations with peers engaging in deviant behaviour are more likely to influence examination sitting.
- No statistically significant impact (positive or negative) of the numbers of hours in work on students' School Certificate examination grades. Other factors have a much larger impact, namely parents' qualifications, student IQ scores, student behaviour problems and teacher assessments of classroom performance.
- No statistical evidence that in-work experiences or excessive weekly hours at age 18 reduce the likelihood of similar (observationally equivalent) students obtaining University Bursary (Year 13 national examinations).

Participation in part-time work has a slight, brief, positive effect on subsequent employment

The study found weak, non-significant, indications that in-school employment from ages 13-16 increases the probability of being employed at age 21 , but not at age 25 .

The study paints a fairly benign picture for the work performed by students in New Zealand. "The balance of evidence from the study suggests that early work histories of students in the CHDS have no measureable effects (either negative or positive) on their later academic achievement." (Maloney, 2004, p28). "Nor do they appear to facilitate labour market transitions or enhance later employment and wage opportunities." (Maloney, 2004, p3).

Due to low levels of students participating in 'excessive' levels of employment (only six students worked more than 20 hours a week through to age 16), it was not possible to determine whether students working more than 20 hours performed worse or were less likely to complete School Certificate or University Bursary exams.

## Motivation and Achievement in Secondary School (Meyer et al., 2009)

The nationally representative Motivation and Achievement study of 8,900 Year 10 and 11 students was undertaken in both 2007 and 2008. The study focused on investigating factors underlying NCEA outcomes, with a strength of the research being the linking of survey data collected during the school year to subsequent educational outcomes. The study included an analysis of a range of non-school activities and the role that they might play in NCEA accreditation. The study found a curvilinear relationship between time in work and the total number of NCEA credits achieved that year. As can be seen in Figure 13, students undertaking moderate levels of part-time work tend to gain more credits than those not working at all or working longer hours. Figure 13 visually represents outcomes for Year 10 and 11 students in 2007 and 2008 and total credits attained.

Figure 13: Time spent in part-time work - Year 10 and 11 students in 2007 and 2008 and total NCEA credits attained


Source: Meyer et al. (2009)
The following differences were observed to be statistically significant in the study, meaning that we can be $95 \%$ confident that these outcome patterns exist in the wider population of all school students:

- Across 2007 and 2008 studies, students with part-time jobs working 6-10 hours a week attained more total NCEA credits than those who did not work at all.
- In the 2008 study, students with part-time jobs working 6-10 hours a week attained more total NCEA credits than those who worked more than 15 hours a week.
- Students who participated in sport for a moderate number of hours (less than 5 hours in 2007 and less than 15 for the 2008 cohort) attained more NCEA credits than those who did not.

These observed patterns of higher achievement based on moderate levels of participation in sport and part-time work were found to hold across gender, ethnicity and school decile levels.

Overall, the data indicates that working part-time is beneficial, with an optimal amount estimated to be less than 10 hours per week, possibly between 6-10 hours a week for many Year 10 and 11 students. With a clear threshold of 15 hours per week observed in the 2008 year, the study suggests that beyond this point any beneficial effects associated with participation in part-time employment are lost (as NCEA credits achieved are statistically significantly fewer). This research seems to support Gasson et al.'s (2003) summation from the international literature that part-time work beyond 15 hours per week may be excessive and likely to impact on educational outcomes. Exactly where this threshold sits is unclear, as the Motivation and Achievement study collates hours in work through data ranges, with more than 15 hours being the top category.

This study concluded that some part-time work and some participation in sport is associated with higher achievement than none at all or too much, with the authors encouraging young people to participate in extracurricular activities such
as part-time work, provided it is kept to a manageable level. They further suggest that families have a critical role to play in supporting and monitoring their children's extracurricular activities.

## The Dunedin Multidisciplinary Health and Development Study

The Dunedin Multidisciplinary Health and Development Study (DMHDS) is a Iongitudinal study of health and behaviour, much like the Christchurch study cited above, with participants being born in Dunedin between April 1972 and March 1973. The DMHDS research on the effects of part-time employment on educational and subsequent employment outcomes for children aged $11-15$ is currently being reviewed for publication in an international journal.

While we cannot reveal the details of the research at this delicate stage in the publication cycle, key high-level findings support the key conclusions cited above - participation in light work during school years does not appear to have adverse effects on educational or subsequent employment outcomes, and when work hours are not excessive, there may be a number of benefits for young workers in the long term, including improved educational and earnings-related outcomes. The DMHDS study is further expected to make a contribution to our understanding of any threshold effect as detected by Meyer et al. (2009a) (estimated to be between 10-15 hours per week, after which time the benefits of work reduce). It is anticipated that details on this research will be available in the medium term, depending on publication dates.

## Conclusion on impacts

The three New Zealand studies cited above collectively indicate that part-time employment during the school term, when limited to a moderate number of hours, does not have a negative impact on scholastic achievements or subsequent employment outcomes and may provide more than financial benefits to students in terms of qualifications achieved and later employment outcomes. For Meyer et al. (2009), optimal levels for Year 11 students sit at ten hours per week or less (possibly 6-10 hours), but any level of work appears to be better than none, up to a threshold of 15 hours per week.

## DISCUSSION

Currently, we know a lot about schoolchildren's participation in extra-curricular paid employment in New Zealand and the conditions and outcomes of their employment. This knowledge base is succinctly summarised in the Executive Summary to this paper. Clearly however there are gaps in our understandings, as identified in the findings section to this report. These shortcomings suggest that while this knowledge is substantial, it is not yet comprehensive. A number of research strategies, discussed in the following sections, are identified as likely to make a substantial contribution to building our knowledge base surrounding school children's employment.

## Gaps in data availability

This section reviews and highlights key information gaps identified during the process of this review.

## Participation

## Primary and intermediate level school children populations

We know a lot about secondary school students' participation in work, but relatively less about intermediate students, due to reliance on fewer, less recent and non-nationally representative surveys. We do know that a small proportion of intermediate level students start working at a much younger age, but we know very little about these students' work participation and conditions. Future research could focus on building up our knowledge of employment practices for primary and intermediate schoolchildren, including prevalence, types of work, accident rates, pay, hours worked and possible impacts on schooling and other developmental activities.

## Occupations and types of work

Our knowledge of occupations and tasks performed by students is broad-ranging and informative but at times sketchy. In part, this is because there is little consistency in occupational typology used across studies. Further, in the only nationally representative study capturing occupations for secondary students, large proportions were doing 'other work'. In this context, we cannot be confident we know the extent of roles youth are undertaking and in what proportions. A more comprehensive list of options for youth in future studies would be desirable. We could also be clearer about the types of work young students are doing and the extent to which they may be transgressing restrictions on the types of work able to be undertaken by under 15 -year-olds (for example, machine work). It may be that the categories available from official statistics do not provide meaningful categories for younger students.

## Times of study

People working excessive hours are likely to be working both during the week and on weekends. As there is evidence to suggest that long hours may be impacting on students' academic performance, it would be useful to know more about when
students working long hours are studying and the number of hours they spend in study and other extracurricular activities relative to other students.

## Times of work

While we have a good understanding of how many hours per week students are working and the number of days these are spread across (typically 1-3 days), we are currently not able to determine times of work for each day in work (for example, mornings, afternoons and nights over weekdays versus weekends). This is a gap in our knowledge that requires more considered research and analysis. We also do not have a good understanding of which industries and occupations people working long hours are working in, though it is likely that rural students are working in agriculture. Future research might usefully focus on determining which industries are most likely to have students working long hours and whether this is indicative of this industry more generally.

## Late night work

We know there are a substantial number of students of all ages undertaking early morning and late night work (between $10 \mathrm{pm}-6 \mathrm{am}$ ) during the school term ${ }^{42}$ but do not know the extent to which this may be during the school week versus weekend work. If it is during the week, this may be of concern as the risk of interference with school work may be higher. We also do not know the extent to which this practice may be operating illegally (such as under 16 -year-olds in industries operating without an Approved Code of Practice). Regulation around late night work was introduced in April 2009 after any of the surveys reported in this paper were carried out.

## Conditions

## Employment agreements

While we know that around half of students in work have employment agreements and that these tend to be older students working for larger organisations, we know relatively little about the nature of these agreements, including whether they are collective or individual agreements, whether employees are considered casual or permanent employees, union membership and leave provisions (for example, holiday pay, sick leave, special leave and annual leave). Also, while some employers (likely to be smaller organisations and those reflecting family-related arrangements) are less likely to have agreements, we do not know if this absence is reflected in other elements of employment law not being implemented (see below).

## Provisions of health and safety information

Students' awareness of hazards and reported receipt of health and safety information from employers appears low, and we lack a profile of who is most likely to be providing students with health and safety information as required under the Health and Safety in Employment Act. Future research could focus on employers' practice and perceptions of meeting Health and Safety in Employment

[^27]Act (1992) requirements to inform employees of workplace hazards and the extent to which they provide adequate levels of training and supervision. Are employers with formal agreements more likely to be mindful of these responsibilities? Are some industries more likely than others? Are schoolchildren less likely to receive health and safety information than other workers?

## Awareness of employment rights

Research also suggests schoolchildren employees often lack awareness of their basic employment rights. Again, are employers with formal agreements more likely to be mindful of their responsibilities to impart this information to employees? Perhaps indicative of the significance of this issue is Pugh's (2007) finding that $3 \%$ of Taranaki secondary schoolchildren employees have done something they thought to be unsafe because they did not want to be fired (when legally they have the right to refuse unsafe work).

## Pay rates

While we have a good sense of pay ranges, we do not know the full extent to which some children may be being poorly paid or not paid for the work they do. In the absence of a minimum hourly wage rate for youth under 16 , there remain strong risks of exploitation of children as cheap labour. While some surveys point to the existence of low pay rates for a minority of school students, including below minimum wage rate levels for 16-17-year-olds, methodological issues regarding national representativeness, definitions of paid work and the level of detail in data collection limit our ability to fully understand these outcomes. More systematic research on wage rates is required for us to determine the extent to which low pay rates are being paid to schoolchildren and which groups may be more vulnerable to this. In part, researchers may need to work with students to robustly determine the hourly rate of pay, which would need to be collected in meaningful categories that would capture low pay rates or the specific amounts paid. Definitions of work would need to be tightly defined in this instance and linked to employer (e.g. parents), industry and occupational types.

## Prevalence of injuries, accidents and workplace hazards

It appears that injuries at work are common for schoolchildren and some industries are more prone to injury and harm than others (for example, construction, postal/transport, agriculture and hospitality appear to be more dangerous than others according to this study), but we currently do not have a nationally representative profile of injury rates for schoolchildren by industry and the types of injury sustained by and risks exposed to individuals in particular working environments. We also do not know how health and safety outcomes compare to those of the wider, adult population. Additionally, some studies (for example, Caritas (2003)) have indicated that some children report being exposed to adult risk elements such as alcohol and heavy machinery at an earlier age than might be expected. While these appear to be relatively isolated incidents, we do not know how prevalent they may be among the schoolchildren population. Direct questioning may be useful in a nationally representative survey, possibly along the lines of, "Have you ever been exposed to .....?" or "Have you ever done any of the following activities?"

## Impacts

## Educational and employment outcomes

We can be confident that moderate amounts of employment do not impact negatively on secondary schoolchildren's educational grades and qualifications and later employment as an adult, but we do not know where any threshold lies and how this could vary by age. Current estimates appear to lie around 10-20 hours per week for secondary school students. One study suggests that 6-10 hours part-time work per week may be optimal and that up to 15 hours a week can also have a positive effect on educational grades, but this outcome was not consistent for each year of investigation. More detailed analysis was not possible due to data collection methods, so the issue remains somewhat ambiguous. Ideally, a means is required to more confidently and specifically identify the threshold for the number of hours in work, after which point positive effects are not observed or negative effects are detected. We also do not know if optimal amounts of work vary according to the level of involvement in other extracurricular activities such as sport.

## Health behaviours

Another area of interest missing from the New Zealand research literature concerns the influence of adult workplaces and early exposure to negative health behaviours and lifestyles on children's subsequent development. The international literature suggests that exposure to alcohol, drugs and tobacco in workplaces can increase the likelihood of students subsequently taking up these negative health behaviours from a young age (Ramchand et al., 2007; Bachman et al., 2003). In this context, the Caritas (2003) study found that some students reported being able to access alcohol in the workplace, which highlights at least one possible longer-term risk for students.

## Research in the pipeline

A number of research projects under way will assist in building our understanding of schoolchildren's experience of employment as an extracurricular activity.

## Effects of part-time employment on education and employment outcomes

The Dunedin Multidisciplinary Health and Development study ${ }^{43}$ (DMHDS) research on the effects of part-time employment on educational and subsequent employment outcomes for children aged $11-15$ is currently being reviewed for publication in an international journal. This has resulted in details not being able to be included in this report. As previously indicated, advanced viewing of this research suggests that this report will complement, validate and add new insights into the existing New Zealand literature. It is expected that this research will be published in 2010/2011.

[^28]
## Effects of working on employees' health behaviours

As indicated by the international literature (for example, Bachman et al., 2003; Ramchand et al., 2007), many schoolchildren mixing in adult work environments are prematurely exposed to many negative health behaviours including use of alcohol, drugs and tobacco. This study, also using data from the DHMDS, will explore the impact of employment on health behaviours and, if feasible, effects across industries.

## Cultural attitudes to and experiences of work

Qualitative research conducted through the Otago College of Education and led by Dr Ruth Gasson, scheduled for 2010, will follow up on some of the cultural differences observed in the formative Gasson et al. (2003) study. Researchers will investigate Māori, Pacific, New Zealand European and Asian caregivers' and schoolchildren's perceptions regarding appropriateness of work for schoolchildren. Using interviews, diaries and focus groups, the research will explore how work is seen to impact, positively and negatively, on the wellbeing of ethnically and culturally diverse groups of New Zealand children aged 11-15.

## Youth 2000

It is likely that the Youth 2000 project, which gave birth to the Youth'07 survey, will repeat the survey of secondary school students with a large nationally representative sample in 2012 or 2013. This will provide an opportunity to update prevalence of employment knowledge and possibly gather additional information. From a Department of Labour perspective, a priority for the next iteration will be to link questions relating to days and times of work so that we are better able to know when students are working (for example, prevalence of late night work on school days). If feasible, some occupational typology development could also be undertaken and additional information on employment agreements and health and safety information and risks exposure would ideally be collected.

## Priority research activities

To build on our current understanding of schoolchildren's employment participation, conditions and outcomes, further qualitative and quantitative research above and beyond current research projects is required. The Department has identified the following research activities as priorities.

## Analysis of existing data sets

Where feasible, the Department seeks to undertake new or additional analysis of existing data sets where the potential for valuable information has been identified. Most notably, this includes the following:

- Further analysis of the Taranaki Health and Safety Knowledge Survey data (Pugh, 2007). While additional analysis was undertaken in 2009 for the purposes of this report, further questions have emerged that may be answerable from the survey. Of particular interest is the extent to which students with or without formal employment agreements and students across industries vary in their likelihood of receiving health and safety information from their employers. Also of interest would be exploring the relationship, if
any, between receiving this information and likelihood of harm or accidents in the course of their work.
- Analysis of schoolchildren in the Survey of Working Life (SoWL). The SoWL is a relatively new official data set that investigates people's work arrangements and working conditions. This first ran as a supplement to the Household Labour Force Survey (HLFS) in the March 2008 quarter, and while there is no set date for a rerun, the first repeat is expected to be run in the next few years. As an official data set, this survey is limited to people aged 15 and older. Despite this limitation, the data set will provide useful insights into older schoolchildren's working conditions, which we will be able to compare to the wider working population. Useful points of analysis are likely to include elements of the employment arrangement (including usual working times, types of employment relationships, prevalence of employment agreements and rates of union membership) and health and safety experiences, including stress, bullying and harassment and pain resulting from employment. The survey will also provide useful insights into how well health and safety issues are being managed by employers (as perceived by the schoolchildren) and perceptions of job satisfaction and overall work-life balance. The SoWL may also be useful for validating and building on the Youth'07 and Pugh (2007) surveys, which identified industries and occupations over-represented in negative health-related outcomes and/or low rates of employment agreements.
- Exploratory work assessing the feasibility of using administrative data collected by the Department of Labour. The Department routinely collects information on employment-related queries, complaints and workplace investigations, which could potentially provide useful indications of the prevalence of poor employment practices for schoolchildren, including those pertaining to health and safety and fair pay.


## Support for the Growing Up in New Zealand longitudinal study

The Ministry of Social Development and University of Auckland-led Growing up in New Zealand study aims to track into adulthood 7,800 children born in the greater Auckland and Waikato regions in 2009. One aim of the study is to gain a better understanding of how a child's sphere of influence impacts on their education and employment outcomes. Building on indications cited in this report that a small proportion of 7 -year-olds are engaging in part-time work, the Department has signalled a keen interest in exploring transitions into the labour market from this early age. Ideally, the research would cover work experiences and employment conditions for primary and intermediate school students, including types of jobs, hours in and earnings from employment and elements of the employment relationship. This work, collected from age 7 in 2016, may also provide a useful opportunity to determine more precisely hours and times worked during the school week and weekends. Content for the 2016 data collection and subsequent data collections is to be confirmed closer to the time.

## Exploration of educational and employment outcomes

The Department has an ongoing interest in refining our knowledge surrounding educational and later employment outcomes for schoolchildren participating in paid employment. Two pieces of work are currently being pursued:

- In the short term, discussions are being held with the Motivation and Achievement research team from Victoria University about further analysis of time in work and NCEA credit impacts. These include analysis focusing on merit and excellence NCEA credit outcomes and analysis focusing on optimal levels of engagement in part-time work in the context of a wider range of extracurricular activities, including sport and babysitting. It may be that a combination of activities has a threshold effect for NCEA outcomes, providing a broader context for considering optimal levels for hours in employment.
- Over the longer term, findings from the Growing Up in New Zealand longitudinal research (discussed above) will enable users to assess what effect, if any, working while at school has on children's education (such as performance at school) and later employment outcomes. The Ministry of Education, another partner agency involved in this work, also has a keen interest in the effects of school-aged work on subsequent and concurrent educational outcomes. With two core social agencies prioritising this question, it is likely that this research question will be addressed in the medium term. Ensuring the right questions are asked will be crucial (for example, related to types of work, times of work and hours of work). Given the volumes of participants in the study, more subtle effects are also likely to be detected, which may enable us to be more specific about thresholds for particular age groups. It should be noted that this is a long-term project in its infancy, with educational outcomes unlikely to be detected for at least 10-15 years.


## Qualitative fieldwork

Qualitative fieldwork, such as interviews and participant observation, in particular industries and occupations where health and safety concerns and a lack of employment agreements have been identified would enable a more detailed picture of the underlying influences on particular employment practices and outcomes for schoolchildren.

## Focus groups

There is also a need to engage more closely with key stakeholders in this area educators, employers, students and their advocates/representatives - to gather their views and perceptions of what types, hours and conditions of work are appropriate for schoolchildren across different age groups. It is envisaged the focus groups would be one means of undertaking this work. Selected elements of the current document could serve as a useful reference, such as health and safety concerns and low rates of employment agreements.

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[^0]:    ${ }^{1}$ For example, the survey studies documenting low rates of pay for some schoolchildren did not specify 'work' was necessarily paid work and/or did not exclude voluntary work or chores around the home or family farm or business. Further confusion for children in the calculation and reporting of hourly rates may contribute to over-reporting of low pay rates.

[^1]:    ${ }^{2}$ Source: Ministry of Education roll numbers as at July 2009. Note that secondary school numbers include some Year 13 students who may have turned 18 . See website for year/level details by gender and school type. www.educationcounts.govt.nz/statistics/schooling/july school roll returns/6028 ${ }^{3}$ As discussed below under 'Engagement in paid employment', we do not currently have nationally representative data for intermediate and primary school-aged children from which we could confidently generalise national participation rates.
    ${ }^{4}$ Department of Labour Statement of Intent 2009/10-2012/13.
    www.dol.govt.nz/publications/general/gen-statement-of-intent.asp

[^2]:    ${ }^{5}$ New Zealand has ratified the International Labour Organisation's (ILO) Worst Forms of Child Labour Convention (No. 182). However, New Zealand has not ratified the ILO Minimum Age Convention 1973 (No. 138), which requires a legislated minimum age for employment. Similarly, New Zealand has a reservation on Article 32(2) of the United Nations Convention on the Rights of the Child (UNCROC), which also requires a legislated minimum age for employment. New Zealand's approach has always been to not ratify a convention until law, policy, and practice completely meet its requirements. New Zealand's current legislative and policy framework does provide age thresholds for safe work and a legislative requirement that paid work must not interfere with the education of children up to the age of 16 years. However, to be fully compliant with ILO Convention 138 and UNCROC, New Zealand may be required to further legislate for a minimum age threshold for employment of children generally and specifically to prevent admission to light work under the age of 13 years.
    ${ }^{6}$ For example, ILO Convention No 138, currently under consideration by the New Zealand
    Government, calls for zero extracurricular employment until the age of 13.

[^3]:    ${ }^{7}$ Under the Health and Safety Act (1992), children under 15 have many safety-related restrictions on the types of work they are able to undertake and the work environments they are able to work in, including operating machinery, driving or riding on tractors and working in areas where construction, goods preparation, tree felling or any other work that is likely to cause harm is being undertaken. Children under 16 cannot work between 10 pm and 6 am the following day, unless this is in accordance with a Minister of Labour's Approved Code of Practice.
    ${ }^{8}$ These studies are considered formative to the extent that they broke new research ground and provided a basis for more recent New Zealand studies to build on.

[^4]:    ${ }^{9}$ As described by the authors, due to an absence of standard representative-based sampling methodology employed in this study. Further, it is limited to a non-specified number of Catholic schools in New Zealand. No response rate for schools or students is made available in the report, and the extent to which specific findings can be generalised to the wider population is debatable. However, the study provides some useful indicative findings of what may be common practice in New Zealand.

[^5]:    ${ }^{10}$ The Caritas study did not define work as necessarily being paid or specify a location or an employer from outside the home, which limits the usefulness of the findings. For example, it does not distinguish between those receiving pocket money from a parent from those working for a non-family employer or between those working voluntarily or receiving non-monetary payment from those in paid employment.

[^6]:    ${ }^{11}$ Estimates are based on Ministry of Education roll numbers as at July 2009 for Years 9-13 ( $n=282,000$ ). Note that some Year 13 students may have turned 18 . See website for year/level details by gender and school type. www.educationcounts.govt.nz/statistics/schooling/july school roll returns/6028
    ${ }^{12}$ Assumptions in this estimate include that school year level and student age are directly matched, i.e. Year 9 students are 13 years old (with Year 9 total $n=61,000$ ), Year 10 students are 14 years old

[^7]:    (with Year 10 total $n=61,000$ ) and so on. Some students in any given year will be older than this, and some will be younger than this 'typical' age. School roll populations for Years 11, 12 and 13 are $63,000,54,000$ and 43,000 respectively. A second assumption is that the 2007 prevalence estimates apply in 2009. These may have altered during the interim recessionary period.
    ${ }^{13}$ New Zealand Herald, Our working lives: Young want right to earn a living. Thursday 17 January 2008. www.nzherald.co.nz
    ${ }^{14}$ Source: Gasson, 2003; analysis of the 2003 data undertaken in 2009 for the purposes of this study ( $n=1,482$ ).

[^8]:    ${ }^{15}$ Year 10 (previously known as 4th Form) students typically start the school year as 14-year-olds.

[^9]:    ${ }^{16}$ The NZDep2006 Index Decile used in this study is a 10 point scale based on nine variables surrounding socio-economic status from the 2006 Census. See the Youth'07 Technical Report for details. It should be noted the NZDep2006 scores and deciles apply to areas rather than individual people. Following the Youth'07 approach, they have been collapsed into low, medium and high socioeconomic deprivation measures for the purposes of this research.
    ${ }^{17}$ Source: Youth'07 (2009 analysis).

[^10]:    ${ }^{18}$ In particular, as can be seen in Table 1, a substantial proportion of students are undertaking 'other' work, suggesting that the options available to students in the survey were not comprehensive.

[^11]:    ${ }^{19}$ Note that students are able to select more than one category, and numbers include part-time, holiday and casual employees.
    ${ }^{20}$ Likely to include a small proportion of 12-year-olds in year 9.

[^12]:    ${ }^{21}$ Because the Census asks about study status but not school attendance, a proxy measure has been traditionally used to identify schoolchildren. The measure focuses on youth aged 15 and 16 only, participating in full-time study.

[^13]:    ${ }^{22}$ New Zealand Retailers Association (2009) Retail Wages Survey. Note that this study is confidential to members of the New Zealand Retailers Association Inc, and we thank them for supplying us with their summary report.
    ${ }^{23}$ Part-time employment $=$ less than 30 hours a week.

[^14]:    ${ }^{24}$ See Motivations for Work section
    ${ }^{25}$ Data collected in the early 1990 s.

[^15]:    ${ }^{26}$ Gasson et al. (2003) also found that school students working longer hours ( $21 \%$ of schoolchildren aged 11-15 years in work worked 12 hours or more) were twice as likely (79\%) to work a mix of weekends and during the week (versus $37 \%$ for schoolchildren working less than 12 hours per week).

[^16]:    ${ }^{27}$ Note that not all figures add to $100 \%$ due to rounding and $2.5 \%$ being recorded as 'other' - not included in this summary table

[^17]:    ${ }^{28}$ Regulation restricting under 16-year-olds working late at night was introduced in April 2009, 2 years after this survey was completed. Exemptions are available through an Approved Code of Practice. Currently, the Department is working towards developing the first Approved Code of Practice with the entertainment industry, building on well established and accepted standards and guidelines for this sector.

[^18]:    ${ }^{29}$ Department of Labour (2009).The Working Patterns of Older Workers.

[^19]:    ${ }^{30}$ Concerns have been raised regarding risks for children being exploited as independent contractors, but there are legal provisions which mitigate these risks. Under the Minors' Contracts Act (1969), contracts for service entered into by a person younger than 18 may be unenforceable against the minor unless the contract was fair and reasonable at the time it was made. Further, independent contractors, including schoolchildren, who encounter workplace problems, may access dispute resolution services provided free of charge through the Department of Labour's mediation services under the Employment Relations Act 2000.
    ${ }^{31}$ The Survey of Working Life (SoWL) was a supplement to the Household Labour Force Survey (HLFS) in the March 2008 quarter. It is the first official data set that investigates people's work arrangements and working conditions.
    ${ }^{32}$ Unfortunately, as with many official data sets, the HLFS and the SoWL are limited to employees aged 15 years and older.

[^20]:    ${ }^{33}$ The new entrants wage replaced the youth minimum wage in March 2008. Both rates are set at $80 \%$ of the adult minimum wage for $16-17$-year-olds, with the new entrants rate being a more temporary rate only (for those who are yet to complete 3 months or 200 hours of employment, whichever is shorter, but does not include those who have been supervising or training other workers or are subject to the training minimum wage).

[^21]:    ${ }^{34}$ Source: Youth'07 survey, 2009 analysis of data by Department of Labour.
    ${ }^{35}$ Source: Pugh (2007).

[^22]:    ${ }^{36}$ See Marshall, Clarke, Langley and Cryer (1996).

[^23]:    ${ }^{37}$ The child's mother took them to the doctor as a result and, at the bequest of the employer, a dog ranger intervened, culminating in the dog being put down.

[^24]:    ${ }^{38}$ Source: Statistics New Zealand (http://wdmzpub01.stats.govt.nz/wds/TableViewer/dimView.aspx). Data for children aged 15-17 could not be disaggregated from the 15-24 age group.

[^25]:    ${ }^{39}$ It could also reflect the non-random selection and low $N$ sample in the 2006 case studies.
    ${ }^{40}$ Anderson and Lamm (2010) found that $16 \%$ of their 'judgement' sample of 159 AUT students aged
    25 or under who had worked in New Zealand before turning 18 recalled feeling unsafe at work as children (for example, they felt scared working in a shop alone at night or working on a roof).

[^26]:    ${ }^{41}$ As with the incidences cited in the Caritas (2003) study, it is not known how prevalent this may be in the population nor how it relates to the impact of an accident or type of injury.

[^27]:    ${ }^{42}$ As evidenced by the $7 \%$ of secondary students identified in the Youth'07 study who worked during this time 'in the previous week'.

[^28]:    ${ }^{43}$ The Dunedin Multidisciplinary Health and Development study is a longitudinal study of health and behaviour of over 1,000 participants born in Dunedin between April 1972 and March 1973.

