SUPPORT DOCUMENT

From school to work: The role of traineeships—Support document

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This document was produced by the authors based on their research for the report *From school to work: The role of traineeships*, and is an added resource for further information. The report is available on NCVER's website: <http://www.ncver.edu.au>

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Introduction

This support document accompanies the NCVER report 'From school to work: the role of traineeships' (hereafter 'the report'). It contains a comprehensive review of the literature referred to in that report and detailed descriptions and results of the econometric modelling upon which the findings are based. The key objective of the report is to assess the effect of participating in a traineeship during the transition from school to work on individuals' later labour market outcomes. The data used in the analysis come from the 1995 Year 9 cohort of the Longitudinal Surveys of Australian Youth. Data from annual surveys are available for this cohort from 1995 through to 2002, which for the bulk of the cohort equates to the year in which they turned 14 through to the year in which they turned 21.

To assess the impact of participation in traineeships we compare the outcomes for those who entered traineeships with outcomes for those who left school during or before 1998 (Year 12) and did not enter any further formal post-school vocational education and training course either in the year they left school or in the following year. By 'post-school vocational education and training course' we include courses equivalent to Certificate Level 1 or higher. The sample of traineeship participants includes all persons identified from the data as having commenced a traineeship, either as a school-based traineeship or after leaving school, up to and including 1999, which is one year after the cohort was due to complete Year 12. The 'control group' of persons without post-school qualifications does include persons who undertook short courses at TAFE or single modules.

According to the above definitions we identify 962 individuals who participated in traineeships and 2254 individuals who did not enter any formal post-school vocational education or training. However, many of these observations are not available in the estimations due to survey attrition, missing observations for explanatory or dependent variables and due to the fact that we are often interested in subsets of the sample – those in the labour market or those in employment. Models are estimated for outcomes in the years 2000, 2001 and 2002. For example, 786 of the traineeship participants and 1559 of the school leavers with no post-school participation in formal education and training remained in the survey for 2000. These numbers decline to 612 and 1094, respectively, for the 2002 survey.

The next section provides an overview of the development of traineeships in Australia and a review of the literature relating to traineeship outcomes. This is followed by a discussion of the LSAY 1995 Year 9 cohort and details on how participation in traineeships has been defined in the analysis. Additional data from the survey relating to high school students' intentions on leaving school are also reported. The remainder of the document contains detailed specifications and results for the multivariate models of participation in a traineeship and for outcomes in 2000, 2001 and 2002. This includes models of: the probability of being employed as opposed to unemployed; hourly wage equations for those in employment; models of satisfaction levels with various aspects of individuals' jobs for those in employment; and models of individuals' happiness with their career opportunities.

Literature review

The emergence of traineeships in Australia

Vocational education and training plays a vital role in the economy by preparing workers for productive engagement in industry. This education and training can take many forms — some common categorisations include general and specific, formal and informal, accredited and non-accredited, on-the-job and off-the-job and in-house and external. More specifically, common modes of vocational education and training in Australia include university courses, Tertiary and Further Education (TAFE) courses such as diplomas and certificates, apprenticeships, traineeships, firm provided training and courses developed by product suppliers, among others. As one progresses through the school system, the syllabus content also becomes increasingly vocationally oriented and recently specific vocational subjects have become available as part of secondary school curricula.

Of course there are many areas of overlap and many linkages between these different forms of education and training. Individuals will normally participate in several such types of training during their working lives, often simultaneously. Some courses combine different modes of education and training, notably the apprenticeship model that reinforces technical off-the-job training with on-the-job instruction and experience. Others may serve as pre-requisites for further education and training, or be recognised as equivalents to components within other courses, therefore counting as exemptions towards other qualifications. In this sense, participation in various combinations of VET activities can be seen as 'pathways' to occupations or to recognised qualifications. Taken together, the way these modes of training are utilised and combined represents the nation's 'VET system'.

While training and learning are important throughout workers' careers, the VET system is at its most significant during the transitional stage from school to work. This is the period in which young people are allocated to career pathways and where investment in vocational skills and education are concentrated. Each year public expenditure on the higher education and VET sectors amounts to over $12 billion, while employers spend over $1 billion on structured training (ABS 1998, p.11). Thus VET is not only an important input to industry, but the VET system is also one of the principal institutional economic frameworks and the efficacy of the system is a significant determinant of national economic performance. Over the years there has been much debate over the adequacy of Australia's VET system. While enrolments in higher education compare favourably to other advanced countries (OECD 1999, p.43) it has been noted that Australia lags behind in terms of the proportion of workers with vocational qualifications, particularly relative to countries such as Germany with strong apprenticeship systems.

For those school-leavers who did not go on to tertiary education, the apprenticeship system traditionally represented the main alternative for formal vocational qualifications. However, Australia's apprenticeship system had been in decline. It had remained relevant to only a handful of traditional trades and has not proven flexible enough to accommodate other requirements and emerging skills (see Dockery 1996). Consequently public policy for several decades has been geared toward bolstering the apprenticeship system and industry training more generally, including employer rebates, wage subsidies and a training levy on firms (the 'Training Guarantee'). Some of the more fundamental policy reforms have been attempts to use traineeships to extend formal VET structures into areas that apprenticeships had failed to cater to.

Some form of apprenticeship system has existed in Australia since the early days of colonisation. This grew from the transplanting of what was a well established British system, governed by common law and the Statute of Artificers (1563) which provided a legal framework for what was a long established institution (see Dockery and Stromback 1997 for details). The development of this system included the introduction of legislative oversight at the State and Federal levels which saw ongoing refinements to the system around the essential notion of indentured employees receiving training from professional tradespersons. Such major changes to apprenticeships have included the maintenance of training standards through the introduction of structured learning (e.g. TAFE attendance) alongside apprenticeships and regulations pertaining to the employment of junior labour under wage and labour arbitration laws in Australia.

From this history of apprenticeship, traineeships have emerged as a relatively recent phenomenon. Ray (2001) observes that the impetus for their introduction came from the findings of a Committee of Inquiry under the chairmanship of Mr Peter Kirby ('The Kirby Report') in 1985. The recommendations of this committee led to the establishment of the Australian Traineeship System (ATS) in 1986. Traineeships were seen as being attractive in the sense that they extended the idea of apprenticeship to industries such as retailing, hospitality and clerical services where traditional four-year apprenticeships had not existed in the main occupations. Also, the nature of these industries was such that basic skills could be acquired fairly rapidly, allowing for earlier full-time workforce participation and shorter training periods – traineeships were intended to run over a period of time of at least 1 year compared to 4 years for an apprenticeship.

Trainee numbers remained low until after 1994 when the recommendations of the National Employment and Training Taskforce (NETTFORCE) provided funding (also as part of the *Working Nation* reforms) and removed institutional impediments to the formation of new traineeships (McKenzie 2000). This eventually led to the establishment of the Australian Qualifications Framework, which saw apprentices and trainees classified according to the nature of their qualifications rather than industry.

In 1998 the Howard Government created the New Apprenticeships program which combined apprenticeships and traineeships under one program covering school-based and part-time apprenticeships and traineeships as well as formal training in TAFE. Key reforms included the introduction of national qualifications and training packages, user choice of training provider and one-stop-shop support services. New Apprenticeships also emphasised flexibility in the delivery of training services, including a new emphasis on part-time arrangements. This means that trainees can now participate in trade-based occupations once only open to apprentices. This was accompanied by the creation of National Training Packages that replaced the old national modules and courses. Important Training Packages include: Retail (16.5 per cent of commencements in 2002), Transport and Distribution (10.8 per cent) and Hospitality (8.4 per cent). See, also, NCVER (2001) for an historical review of the development of apprenticeships and traineeships in Australia.

Recent trends in traineeships

The figures in Table 1 show the gradual uptake in the number of trainees following the introduction of the ATS in 1985 and its emergence as a major form of VET training in Australia. Traineeship numbers were actually quite small until the NETTFORCE reforms of 1995. After this period they expanded quite rapidly, followed by even faster growth after the introduction of New Apprenticeships in 1998, whereupon they more than doubled in number. Traineeships accounted for two-thirds of the total number of apprentices and trainees in-training, as at the end of June 2002.

Table 1: Apprentice, Trainee and Total In-Training Numbers, 1985 to 2002, '000s

	Traditional Apprenticeship	*Trainees*	*Total In-Training*	*Trainees as % of Total In-Training*
1985	128.6	0.0 *	128.6	-
1986	130.4	1.0	131.4	0.8
1987	138.9	6.4	145.3	4.4
1988	147.1	9.2	156.3	5.9
1989	151.7	12.2	163.9	7.4
1990	161.0	11.8	172.8	6.8
1991	151.0	9.2	160.2	5.7
1992	142.9	9.0	151.9	5.9
1993	122.7	14.9	137.6	10.8
1994	123.3	7.8	131.1	5.9
1995	123.8	12.1	135.9	8.9
1996	102.3	55.0	157.2	35.0
1997	103.4	68.6	172.0	39.9
1998	103.5	89.5	193.0	46.4
1999	105.8	145.3	251.1	57.9
2000	111.1	160.2	271.3	59.0
2001	110.9	199.0	309.9	64.2
2002	113.5	237.8	351.3	67.7

Notes: * The year of introduction for new traineeships. Estimates for 'traditional apprentice' numbers from 1995 onwards are approximated by trade contracts (with ASCO occupational code beginning with '4') at AQF III qualification or above, with expected duration of more than 2 years full-time or more than 8 years part-time.

Source: NCVER 2000, 2002 and NCVER September Quarter 2004 apprentices and trainees statistics (www.ncver.edu.au)

This growth in trainee numbers was partly due to the expansion in training requirements of non-traditional areas for formal training, such as retail and hospitality. Another emerging factor has been the development of part-time and school-based traineeships (NCVER 2001, pp.73-75). In 2002, around 4 per cent of all commencements among apprentices and trainees were school-based. Under the New Apprenticeships Scheme in 2002, school-based apprenticeships and traineeships were defined as 'the employment of a young person who is undertaking an apprenticeship or traineeship while still attending school and enrolled in a senior certificate' (NCVER 2002, p.11). The Ministerial Council on Education, Employment, Training and Youth Affairs (MCEETYA) noted that there were 1 996 schools in Australia offering VET programs in 2002. Data from the NCVER in 2002 indicate that the majority of individuals in school-based New Apprenticeships were involved in a Training Package qualification, with around 13.8 per cent being involved in Hospitality, 7.3 per cent in Business Services and 5.5 per cent in Automotive Industry Retail, Service and Repair (NCVER 2002, p.5).

Participation in traineeships

Given their flexibility and breadth of options, traineeships represent the most accessible path in the Australian training system. As a result of this, traineeships are being used to provide opportunities for a wide range of disadvantaged groups, including people with low levels of educational attainment and/or basic skills, people from non-English speaking backgrounds, people with disabilities and the long-term unemployed. This is evident in surveys of school students and leavers who undertake traineeships. McMillan and Marks (2003) emphasise the importance of apprenticeships and traineeships as a pathway for young people who do not complete high school.

Teese, Polesel and Walstab (2000) found that students with manual and unskilled workers as fathers are more likely to be found at the lower AQF levels (Certificates I and II, which tend to be dominated by trainees) than the higher levels of achievement. Teese *et al* (2000) also found that participation in traineeships (Certificates I and II) is higher among those with lower levels of schooling. At least 50 per cent of people undertaking a Certificate I or II qualification had no formal Year 11 qualification, compared to under 5 per cent for those undertaking a diploma at TAFE. Only 18.6 per cent of people undertaking training for their Certificate I had completed Year 12 compared to around 89.3 per cent for those enrolled to complete a diploma (see Table 2). Further, Polesel, Teese and O'Brien (1999) found that around 32 per cent of VET-in-schools participants in Victoria score in the lowest quintile of the General Aptitude Test for Humanities, Maths, Science and Technology and Communication, compared to around 19 per cent of non-VET-in-schools students.

Table 2: Educational Characteristics of VET Participants, 19 Years Old and Under, 1999.

	Certificate I	Certificate II	Diploma
Certificate I			
No Year 11 Qualification	58.7	50.1	4.9
Completed Year 12	18.6	31.0	89.3

Where the apprenticeship system once catered predominately for male school-leavers, the broadening of traineeships into a wider range of occupational areas has seen female representation increase markedly. The number of females as a proportion of all trainees and apprentices increased from 16.5 per cent in 1995 to 31.0 per cent in 2000. This compares with a representation of around 10 per cent in the mid-1980s. Females now have a higher representation than males among those undertaking Certificate I and II level training (NCVER 2001, pp.85-87).

Review of traineeship outcomes

There are two sets of outcomes that are relevant to the decision to enter traineeships as a pathway from school to work — the set of outcomes contingent upon the individual completing the traineeship and the set of outcomes contingent upon non-completion of the traineeship. The analysis undertaken in this report considers outcomes conditional upon entry into a traineeship, and thus the results reflect the weighted probability of non-completion and completion for those deciding to embark upon a traineeship. Most previous studies have considered outcomes conditional upon completion, while others have assessed separately the factors contributing to completion rates for trainees.

Factors contributing to completion

Non-completion rates for traineeships tend to be higher than for apprenticeships, with around 40 to 45 per cent of trainees not completing compared to around 23-30 per cent of apprentices (NCVER 2001, p.121). Harris *et al* (2001, p.10) indicated that there are three important factors for this level of non-completion. These are:

- ✧ The nature of the traineeship — those traineeships that allow for training to be completed entirely on-the-job appear to have higher rates of non-completion than those that have an integrated model of training (that is, a combination of on- and off-the-job training).
- ✧ The type of traineeship — in the two year period 1995-96, non-completion rates of over 50 per cent occurred in small business, automotive, food/meat processing and construction worker categories.

✧ Particular personal characteristics of the trainees — specifically, trainees who have low levels of educational attainment and who were unemployed prior to commencing their traineeship appear to be most at risk of non-completion.

Grey, Beswick, O'Brien and Ray (1999) examined the rate of non-completion of traineeships over the period from their inception to 1996. They found that the rate of non-completion was around 39 per cent prior to 1993, and this increased to 43.5 per cent in 1996. In looking at 1995/96 data, it was found that trainees were more likely to leave traineeships within the first six months of their traineeships than in periods after this initial introduction to their programs, with around 62 per cent having done so over this period. The authors' assessment of the demographic characteristics of trainee non-completions are reported in Table 3.

Table 3: Non-Completion rates: age, gender, education, unemployment duration 1995 and 1996

	Non-Completion Rates (%)	
	1995	*1996*
Age		
15-19	41.8	42.8
20-24	44.2	45.3
25+	43.5	44.4
Gender		
Male	43.7	45.5
Female	41.9	42.1
Education		
<Year 10	61.6	58.6
Year 10/11	47.9	48.4
Year 12+	34.9	36.2
Unemployment		
< 1 month	36.6	35.8
1-6 months	45.1	43.6
6-12 months	46.7	48.8
12+ months	50.5	55.0

Source: Grey *et al* (1999)

The key finding for these results is that non-completion rates tend to rise with age and prior unemployment duration, that is time spent in unemployment before commencing a traineeship, while non-completion rates fall with increases in education. From this the authors note that increasing the share of trainees who are relatively young and with an educational background that extends beyond Year 10 would act to reduce the non-completion rate. Grey *et al* also cite a Survey of Non-Completing Trainees from 1997 to examine the reasons for trainees' attrition (1999, pp.29-43). Voluntary leavers accounted for the majority (55 per cent) of traineeship non-completers. For those who were forced to leave, the main reasons cited were being laid off and the employer going out of business. Among those who left voluntarily the major reasons cited were:

- low wages
- a poor training environment
- a poor work environment
- a difficult boss.

Younger non-completers (15-19 year olds) were more likely to state that traineeship failures were beneficial for them. Thus the successful completion of a traineeship appears to depend upon both personal characteristics of the trainee, such as age, educational attainment and prior labour force experience and the work environment.

Labour market outcomes

As with participation in VET more generally, the primary motivation for undertaking a traineeship is the expectation that the training and work experience associated with the traineeship will lead to better future employment opportunities and wage outcomes. There have been few studies of the impact of participation in traineeships on individuals' labour market outcomes. Post-program monitoring data report that from 1997 to 2000 typically 85 to 93 per cent of those who completed traineeships were in unsubsidised employment three months later (NCVER 2001, p.130). On this measure, traineeship outcomes are very similar to that for apprenticeships. Cully, VandenHeuval and Goodes (2000) analysed data from DEST's longitudinal survey of trainees. The findings from the exit and first two follow-up surveys are reported in Table 4 below. Approximately 13 per cent of people who had undertaken a traineeship were unemployed at the completion of their program, although this rate dropped to 7 per cent by the time of the first survey (taken 8-9 months after the completion of training). Around 71 per cent were still working with their traineeship employer at the completion of the program, falling to 50 per cent after 12 months, with around 33 per cent having moved on to a second employer after 12 months. Only 3 per cent had moved on to pursue further studies at the end of the program rising to 5 per cent after two years.

Table 4: Labour market activity post-traineeship

	Main activity at end of training (%)	*Main activity at first survey (8-9 months later) (%)*	*Main activity at second survey (12 months later) (%)*
Unemployed	13	7	7
Working with traineeship employer	71	60	50
Working with different employer	11	27	33
Studying	3	4	5
Home duties	1	2	2
Voluntary work	0	0	0
Travelling	0	0	0
Holidays	1	1	0
Sick	0	0	1
Other	0	0	1

Source: Cully *et al* (2000)

NCVER (2001, p.141) reported average starting salaries in 2000 for those who completed a TAFE Certificate I or II qualification in the previous year to have been $407 per week, around 20 percent less than for those who completed a Certificate III qualification and 40 per cent less than those who completed a diploma or advanced diploma. Table 5, taken from Birch, Kenyon, Koshy and Wills-Johnson (2002), shows the ratio of earnings for people with various types of qualifications relative to average weekly earnings. On average, people holding a Bachelor degree from university earn around 18 per cent above average weekly earnings. People with skilled and basic vocational qualifications earn less than average weekly earnings, however, their earnings are still higher than those who only have a high school education. In 1997, for instance, people with skilled vocational qualifications earned around 64.9 per cent more than those with only a high school education, while those with basic vocational qualifications earned around 35 per cent more than high school leavers. On the basis of this (historic) data, it would appear that even basic training associated with a one year traineeship can generate considerable benefits. Similarly, persons with basic vocational qualifications experience a higher incidence of unemployment relative to the national average, but lower than for those with no post-school qualifications (NCVER 2001, p.147).

Table 5: Earnings relativities, by educational attainment, compared with average weekly earnings, 1997

Category of educational attainment	*Income relativity, compared with average weekly earnings*
Bachelor degree	1.18
Associate diploma	1.13
Average weekly earnings	1.00
Skilled vocational	0.94
Basic vocational	0.77
High School (no further education)	0.57

Source: Birch *et al* (2002).

The Alcoa Metals and Engineering Traineeship study (VET in Schools Centre 2001) outlined some of the reported social benefits from a survey of early participants. These included gains in social experience, improvements in social relationships and self-esteem and learning about adapting to different situations. Misko, Patterson and Markotic (2001) find that 87.3 per cent of on-the-job trainees agreed that traineeships helped them build life skills, while 77.8 per cent agreed that traineeships helped them achieve their potential.

Note that these outcome measures represent 'gross' outcomes from traineeships rather than 'net' outcomes in the sense that they do not try to estimate, other than by broad comparisons, what the participants' outcomes would have been had they not entered a traineeship. To our knowledge, this study is the most rigorous to date in attempting to isolate the impact of participation in a traineeship by controlling for other characteristics of participants. McMillan and Marks (2003), however, use similar multivariate models to estimate the effects of a range of characteristics and activities on school-leavers' labour market outcomes using the 1995 Year 9 cohort of the LSAY. They find evidence that completing a traineeship is actually associated with an increased incidence of unemployment at age 19 among males and among youth who do not complete school, as well as some evidence of lower initial wages.

The Longitudinal Surveys of Australian Youth and traineeships

This report uses data from the 1995 Year 9 cohort of the Longitudinal Surveys of Australian Youth (LSAY). The LSAY comprise a series of panel surveys of young Australians aimed at collecting information on the transition from school to work. Detailed background and technical information on these and associated surveys, the Australian Youth Survey and the Youth in Transition surveys, can be found in a series of information papers from the Australian Council for Educational Research (ACER). The data used in this study come from a panel survey of youth who were first surveyed as Year 9 students in 1995, the year in which most turned 14. The sample was selected by a two-stage process in which a random sample of schools was selected, and then a random sample of Year 9 classes from within those schools. Self-completion questionnaires were administered in 1995 and 1996 and telephone interviews conducted in each year from 1997 to 2002. A total of 13 613 valid returns were gained from those completing the initial survey and the attrition rate over the eight waves to date stands at 45 percent. A total of 5 368 individuals participated in all six surveys. A picture of the cohort's transition from school to work, at a very general level, is presented in Table 1 of the report.

There are a number of questions relating to participation in traineeships in the surveys. The general structure of the questioning sequence is to identify whether people had left school or not since the last interview. Those who had left since the previous interview were asked whether or not they obtained any certificate, diploma or other post-school qualification since leaving school. Those who had already left school at the previous interview were asked if they had obtained such a qualification since the last interview. All people who have left school are asked if they are currently undertaking various forms of training, including a traineeship. If in the previous interview they had left school and had indicated that they were doing a traineeship, they would be asked if they are now still doing it or if they have finished it. Ideally, this series of questions would allow identification of all persons who entered a traineeship during the year up to each interview. However, the survey questions did not allow for multiple responses regarding other courses undertaken over the past year (ie. since leaving school or since the last interview) and may have failed to identify courses commenced but from which people had withdrawn or deferred. To remedy this shortfall, the 2001 survey contained a block of questions to retrospectively collect information on all episodes of post-school education and training undertaken (up to a maximum of 4). The data collected included the type of course, including traineeships as a distinct category, start and end dates and outcomes.

Table 2 of the report shows the estimates of the number of individuals who are identified as having participated in a traineeship in each year of the survey — or, more precisely, in the year leading up to the interview. It can be seen that participation in traineeships for this cohort peaked in 1999. This is the year in which the bulk of the sample turned 18 and the year following the cohort's final year of secondary schooling. In 1999, a total of 570 individuals were recorded as having participated in a traineeship since the previous interview, or 6.5 percent of the respondents. Significant numbers had participated in both school based traineeships and post-school traineeships in earlier years. In each of 1997 and 1998, around 10 percent of those who had left school participated in a traineeship. The incidence of participation in traineeships declines steadily after 1999. By 2002, the final year for which we have data, just under 15 percent of the remaining sample had participated in a traineeship at some point.

Thus traineeships had been a reasonably significant activity for this cohort in the transition from school to work, and a minor avenue for further VET. It is likely that the cumulative participation rates are actually higher than those recorded here due to the fact that persons who had done a traineeship had higher attrition rates in the earlier waves of the survey. As a proportion of those school-leavers who do not go on to university, participation rates will be roughly double those given in Tables 1 and 2 of the report. As documented above, however, the number of people in traineeships expanded steadily since 1998 when New Apprenticeships were introduced. Indeed, participation in traineeships for the LSAY sample increases markedly immediately from 1999, so it is difficult to say how much of this was due to wider VET reforms rather than the stage that this cohort was at in the school-to-work transition.

We have thus far considered only *participation* in traineeships as opposed to *completion* of traineeships. The latter is more difficult to define within the data. To understand why, note that those in school at a wave of the survey were asked a different set of questions to those who had left school. We have distinguished between people who participated in a school-based traineeship – were at school and doing some subjects as part of a traineeship – and other traineeships as determined from questions asked of people who had left school. Persons who had left school were asked if they had completed any post-school qualification since the previous interview. In 1997, 2000, 2001 and 2002 traineeships were identified as an individual category. However in the 1998 and 1999 surveys they were not, with the exception of the heading 'Australian Traineeship System'. The category that traineeships are most likely to be included under is 'Certificates (other than trade)'. Individuals were also asked if they are currently doing a traineeship and, if so, were asked the following year if they were still doing that traineeship. Unfortunately, if they were not still doing it they were not asked directly whether or not they completed it. Instead they were asked 'What is the main reason you aren't doing that traineeship now?'. Having completed it is one option, and this allows us to identify positively that the individual completed their traineeship. Many however indicate other options as their 'main reason' for no longer doing the traineeship, notably 'got a job/working now', which does not necessarily preclude the possibility that they completed the traineeship.

Those who participated in school-based traineeships were not asked directly whether they completed the traineeship. If they had left school the following year they were asked about certificates they received as a result of their studies, and the options included categories such as 'TAFE Certificate eg. Certificate 1 or 2' and 'Statement of Attainment of VET subjects completed'. Again, however, it is not possible to definitively establish whether or not the traineeship they were participating in was completed.

The retrospective data on post secondary education and training collected in the 2001 survey will again correct for some of these shortcomings, and the 2002 survey directly asked those who were previously doing traineeships whether or not they completed it. We use the conservative assumptions to identify those who definitively completed a traineeship to generate the frequencies on completions presented in Table 2 of the report. However, it seems clear that the completion data are inadequate, particularly from the low completion rates implied for the years of 1998 and 1999. We believe that this constraint is not of major consequence, as our preferred approach in the evaluation is to concentrate on the impact of participation in traineeships. For policy makers and individuals this is the most relevant decision variable.

Intentions while still at school

In the 1996-98 surveys (Years 10 to 12 for most respondents) those in school were asked what they planned to do in the year after leaving school (see Table 6). In 1996 the question applied only to those who intended to at least complete Year 10. Roughly half of those students hoped to go on to university, and as would be expected this proportion increases for the students in school

in Years 11 and 12. A total of 192, or 2 percent, indicated in 1996 an intention to do a traineeship. The proportion was highest for those who planned to leave after the end of Year 10 (8 percent) or after the end of Year 11 (5 percent). The proportion intending to do a traineeship dropped for the students who went on to Year 11, but recovered to 2.1 percent when the students were in their final year of school.

Table 6: Intended activity in year after leaving school – percent of relevant population

	1996[a] (year 10)	1997[b] (year 11)	1998[b] (year 12)
Go to university	47.8%	55.1%	61.1%
Get an apprenticeship	9.9%	5.1%	7.0%
Get a traineeship	2.0%	0.8%	2.1%
Go to a TAFE or other study	16.3%	15.9%	16.7%
Look for work/get a job[c]	2.1%	8.5%	9.4%
Other	n.a.	4.7%	0.9%
Don't know	21.2%	7.1%	2.8%

Notes: a. as a percentage of those intending to complete Year 10; b. as a percentage of those still in school; c. the option in the 1996 questionnaire was 'no study'.

Multivariate analysis of participation in traineeships

To supplement the descriptive overview of the characteristics of those who entered a traineeship contained in the report, we estimate a standard multivariate logit model of the form:

$$(1) \qquad Log \, P(T_i) \Big/ 1 - P(T_i) = \alpha + \beta X_i' + \mu_i$$

where T is the traineeship participation indicator and $P(T_i)$ the probability that individual i will enter a traineeship. X_i' is a vector of individual characteristics with associated vector of coefficients β to be estimated.

Information on the construction of the explanatory variables is contained in the discussion of the comparisons of means in the report. Since the marginal effect between some continuous variables and entry into a traineeship may not be uniformly positive or negative, it is useful to recode them into discrete intervals for the purposes of the multivariate analysis. We replace the maths and reading scores with their quintiles. The self-assessment of performance in other subjects is captured by four dummy variables – above average, about average, below average and the omitted category of not doing any subjects in that area. For the wealth index we also create dummy variables representing quartiles. For the maths and reading scores we omit the variable for the lowest quintiles, making these the 'comparison' category against which the effects of other categories are compared.

Initially we model the probability of an individual participating in a traineeship at any time during the years from 1996 to 1999, which by and large coincide with the years from Year 9 through to the year following the cohort's final year of high school. As discussed in the corresponding section of the report, this specification has a number of shortfalls which can be addressed by estimating separate models for participation in a traineeship in years 1997, 1998 and 1999 for the sample of young people who were still at school in the preceding year. Thus in the context of model (1), we estimate $P(T_{i,t})$ conditional upon the individual being in school at (t-1) for t=1997, 1998 and 1999.

The full results are reported in Table 7. Equation (1) reported in Table 7 shows the results from modelling the probability that the individual enters a traineeship at any time between 1995 and 1999, inclusive. Equations (2) to (4) then present results for models of the probability that school-leavers enter traineeships in 1997, 1998 and 1999, respectively. These equate to the years in which the cohort would primarily be in Year 11, Year 12 and their first year after secondary school.

The coefficients from Equation 1 are used to calculate the predicted likelihood of individuals entering a traineeship presented in Table 4 of the report. Note that the sample used in these models is the full sample of survey respondents, and is not restricted to those who did no further post-school education and training other than traineeships. The restricted sample is used in the following models of labour market outcomes.

Table 7: Logistic regression models of the probability of entering a traineeship

	Did traineeship 1995-1999 (1)		Did traineeship 1997 (2)		Did Traineeship 1998 (3)		Did Traineeship 1999 (4)	
Intercept	-1.451	***	-2.584	***	-3.085	***	-0.076	
Male	-0.117							
								**
English not 1st language at home	-1.204	***					-1.490	*
								**
Father's education – degree or diploma	-0.833	***			-1.048	***	-1.013	*
Father's occ manager/prof/para-prof			-0.391					
Mother lived at home & worked (1997)			-0.367	*				
								**
Wealth Index (weighted) (1996) [0-100]	-0.008	***					-0.008	*
Reading achievement score (1995)								
– top quintile	-0.249		-0.802	*	-0.869	**		
– second quintile	-0.143		-0.224		-0.732	**		
– third quintile	0.082		-0.029		-0.437			
– fourth quintile	0.068		-0.185		-0.403			
– bottom quintile	—		—		—			
Maths achievement score (1995)								
								**
– top quintile	-0.649	***	-0.833	**	-0.768	*	-0.638	*
– second quintile	-0.207		-0.689	**	-0.223		-0.081	
– third quintile	-0.050		-0.917	***	-0.402		0.157	
– fourth quintile	0.082		-0.609	**	0.507	*	-0.099	
– bottom quintile	—		—		—		—	
Performance in Humanities (1996)								
– better than average			-0.500					
– about average			0.077					
– below average			0.849	***				
Performance in Econs/Business (1996)								
								**
– better than average							-0.492	*
– about average							-0.016	
– below average							0.044	
Performance in Arts (1996)								
– better than average			-0.470	**				
– about average			-0.419					
– below average			0.194					
Performance in Languages (1996)								
– better than average			-0.858	**				
– about average			-0.402					
– below average			0.102					
Did VET subjects in 1997					0.725	***	0.401	**
Likes School (1997) [1-5]							-0.258	**
Happy with life at home in 1998 [1-5]							-0.209	**
Factors – values learning at school (1996)	-0.141	**			-0.200	*		
Factors – things I like to do (1996)								
— Businessperson	0.188	***	0.193	*				
— Problem solver	0.135	*	-0.181	*				
— Artist	-0.180	***			-0.330	***		
— People-person	-0.188	***						

Factors – view of self (1997) — Easy going			0.215	**				
Observations	4046		6428		4197		4410	
Degrees of freedom	17		22		12		13	
	X^2		X^2		X^2		X^2	
Likelihood ratio	189.4	***	112.1	***	91.7	***	138.5	***
Score	168.3	***	126.6	***	96.7	***	121.1	***
Wald	153.4	***	102.6	***	79.4	***	110.1	***

Note: Factors scores are calculated to have a mean of zero and standard deviation of one for the sample overall. Other variables are either dummy (binary) variables or else their range is given in square brackets.

Multivariate analysis of labour market outcomes

This section reports the results of multivariate analyses of the impact of *participation* in a traineeship upon later labour market outcomes. This is a departure from most other studies which have assessed outcomes conditional upon *completion* of a traineeship. As we stress in the report, we believe the impact conditional upon traineeship participation is the parameter of most interest and of most policy relevance. We also note that determination of completion status within the LSAY data is problematic (see the discussion under *Longitudinal Surveys of Australian Youth and traineeships* in this document). To test the sensitivity of the results to the alternative specifications, each of the models reported here has also been estimated with an additional dummy variable indicating traineeship completion in those cases for which it could be definitively ascertained that the individual did complete their traineeship. In all but two models the coefficient on the completion indicator was insignificant and had only a marginal effect of the estimated effect of participation in a traineeship. That is, we can ascertain no additional impact of completing a traineeship over and above the effect of having participated in a traineeship. The two exceptions, discussed below, relate to workers' reported level of satisfaction with their training opportunities in 2001 and with their opportunities for promotion in 2001.

Labour force status

To estimate the impact of participation in traineeships on the probability of gaining employment we restrict the sample to those either working or looking for work and model the probability of the individual being employed as opposed to unemployed. As the dependent variable (Y) is binary (taking on a value of one if the individual is employed or zero if they are unemployed) we estimate standard logit models for the probability of being employed in 2000, 2001 and 2002. These have the form of:

$$(2) \qquad Log \frac{P(Y_{it})}{1-P(Y_{it})} = \alpha + \beta X_i' + \chi T_i + \mu_i \text{ ; t=2000 to 2002}$$

That is the probability of being in employment as opposed to unemployed is estimated to be a function of a vector of individual characteristics X_i and of T_i, the indicator of whether or not the individual participated in a traineeship. The estimated coefficient χ represents the estimated effect of having entered a traineeship and μ is a random error term. The time subscript, t, indicates that separate models are estimated for outcomes in each of 2000, 2001 and 2002.

This produces exactly the same results as if we were to model the probability of being unemployed, conditional upon being in the labour force, with the exception that the sign on each coefficient would be reversed. The results are presented in Table 8. Variables of major interest are retained in each of the models, namely gender, whether or not the individual completed Year 12, the indicators of traineeship and short course participation and the standardised scores for reading and maths tests administered in 1995 as proxies for natural and accumulated ability. A range of other variables have been tested in each model as discussed in the report, but are omitted where the estimate of the associated coefficients has a low level of statistical significance and indicates that the effect of the variable is small.

The regressions results are used to estimate the predicted likelihood of being employed, as opposed to unemployed, conditional on having completed Year 12, having participated in a traineeship and having participated in a short course (see Table 6 of the report).

Table 8: Logistic regression models of probability of being in employment, conditional upon labour force participation; 2000, 2001 and 2002

	Prob(employed) 2000		Prob(employed) 2001		Prob(employed) 2002	
	$\widehat{\beta}$	Prob >t-stat	$\widehat{\beta}$	Prob >t-stat	$\widehat{\beta}$	Prob >t-stat
Intercept	0.9903	0.09	1.2080	0.05	1.2680	0.13
Completed Year 12	0.5856	0.02	0.2798	0.29	-0.0217	0.96
Participated in a traineeship	0.4250	0.11	0.2084	0.44	0.7911	0.05
Participated in a short course	-1.3576	0.25	-0.7623	0.49	-2.0650	0.10
Male	-0.3546	0.14	-0.6115	0.02	-0.2282	0.54
Had a disability (1995)	-1.1284	0.05				
English not 1st language at home (1995)	-0.7427	0.11	-0.6888	0.13		
Mother's occ manager/prof/para-prof	-0.5899	0.03			0.6577	0.17
Father's education – degree or diploma	-0.6617	0.02				
Family wealth index (weighted) (1996) [0-100]	0.0143	0.01	0.0106	0.05	0.0076	0.30
Lived in sole-parent home (1997)	-0.3721	0.22				
Father lived at home & worked (1997)					0.5305	0.16
Mother lived at home & worked (1997)	0.6973	0.01	0.2968	0.24		
Reading achievement score (1995) [0-20]	0.0116	0.77	-0.0117	0.77	0.0281	0.61
Maths achievement score (1995) [0-20]	0.0397	0.35	0.0853	0.05	0.0524	0.40
Factors - attitudes towards school (1995)						
— Enjoys school			0.3504	0.02		
— Values what is learnt			-0.2667	0.07	-0.3254	0.09
— Finds school a happy and safe place			0.2010	0.13	0.3983	0.02
Factors - things I would like to do (1996)						
— People-person			-0.4308	0.00	-0.4112	0.03
— Handy-person					0.3055	0.09
Observations	1046		978		809	
Degrees of freedom	13		13		13	
	χ^2		χ^2		χ^2	
Likelihood ratio	55.3	0.00	39.1	0.00	27.9	0.01
Score	60.6	0.00	39.4	0.00	27.7	0.01
Wald	52.5	0.00	36.5	0.00	25.6	0.02
Concordant (percent)	72.1		69.6		72.8	
Discordant (percent)	26.9		29.4		25.9	

Note: Factors scores are calculated to have a mean of zero and standard deviation of one for the sample overall. Other variables are either dummy (binary) variables or else their range is given in square brackets.

Wage equations

To assess the impact of undertaking a traineeship upon later earnings we estimate the standard wage equation using the log of the hourly wages (Y) as the dependent variable in an ordinary least squares regression:

$$(3) \qquad LogY_{it} = \alpha + \beta X_i' + \chi T_i + \mu_i$$

The coefficient χ now represents the estimated wage premium associated with having participated in a traineeship and the vector of other variables is included as in the estimation of the models of labour force status. We also include a variable indicating whether or not the job was part-time. We do not incorporate variables for prior labour market experience so that the estimated effects on participation in traineeships and other variables represent the full effect of that variable, comprising any direct effect and accumulated effects on labour market experience.

Table 9: Wage equations for log of hourly earnings; 2000, 2001 and 2002

	Ln hourly wage 2000		Ln hourly wage 2001		Ln hourly wage 2002	
	$\widehat{\beta}$	Prob >t-stat	$\widehat{\beta}$	Prob >t-stat	$\widehat{\beta}$	Prob >t-stat
Intercept	2.2704	0.000	2.4625	0.000	2.4505	0.000
Completed Year 12	-0.0727	0.003	-0.0040	0.914	0.0428	0.181
Participated in a traineeship	-0.0619	0.008	0.0770	0.023	0.0507	0.083
Participated in a short course	0.1416	0.250	0.0779	0.703	-0.2768	0.146
Male	0.0333	0.201	-0.0289	0.384	0.0607	0.034
Had a disability (1995)			-0.1727	0.134		
English not 1st language at home (1995)					0.2077	0.009
Father's occ manager/prof/para-prof			0.0762	0.031	0.0525	0.081
Mother's education – degree or diploma			0.0672	0.119		
Father lived at home & worked (1997)					0.0851	0.024
Mother lived at home & worked (1997)					-0.0510	0.097
Reading achievement score (1995) [0-20]	0.0128	0.000	-0.0053	0.317	-0.0009	0.847
Maths achievement score (1995) [0-20]	-0.0013	0.732	0.0042	0.466	0.0035	0.473
Factors - attitudes towards school (1995)						
— enjoys school	-0.0278	0.019				
— values what is learnt					0.0279	0.080
Factors - things I would like to do (1996)						
— Problem solver	0.0344	0.007				
— Art	0.0260	0.027				
Factors – view of self (1997)						
— Extrovert					0.0278	0.062
— Easy-going					-0.0235	0.099
Job is part-time	0.1517	0.000	0.1331	0.000	0.0427	0.174
Mean of hourly wage	$11.20		$12.57		$13.85	
Observations	1013		805		748	
Degrees of freedom	10		10		14	
R-Squared	0.08		0.04		0.05	
Adjusted R-Squared	0.07		0.03		0.03	
		Pr (>F)		Pr (>F)		Pr (>F)
F Value	9.16	0.000	3.44	0.000	2.76	0.001

Note: Factors scores are calculated to have a mean of zero and standard deviation of one for the sample overall. Other variables are either dummy (binary) variables or else their range is given in square brackets.

The full regression results for the estimated wage equations for 2000, 2001 and 2002 are presented in Table 9. By necessity, the sample is restricted to employed persons in each year and we further omit a handful of outliers where wages are in excess of $200 per hour. The hourly wage is calculated by dividing the reported weekly wage by the number of hours usually worked per week. Where the respondent has multiple jobs, it is derived for the job they report as their 'main job'.

Job quality

Is it a career job?

We model the probability that an affirmative response was given to the question 'Is the job you have now the type of job you would like as a career?' for employed persons in 2000, 2001 and 2002. Logit models are estimated to assess the impact of various factors, including participation in a traineeship, on the likelihood of giving an affirmative response.

The results (reported in Table 10) are used to calculate the predicted likelihood of an employed person indicating that they were in the type of job they would like to have as a career, conditional upon having completed Year 12, having participated in a traineeship and having undertaken a short course (see Table 8 of the report).

Table 10: Logistic regression models of probability of worker indicating their job is one they'd like as a career; 2000, 2001 and 2002

	Prob(Career job) 2000		Prob(Career job) 2001		Prob(Career job) 2002	
	$\widehat{\beta}$	Prob >t-stat	$\widehat{\beta}$	Prob >t-stat	$\widehat{\beta}$	Prob >t-stat
Intercept	-0.5413	0.099	-0.1413	0.692	0.4808	0.187
Completed Year 12	-0.4319	0.005	-0.4911	0.001	-0.1175	0.460
Participated in a traineeship	0.7370	0.000	0.7684	0.000	0.3548	0.016
Participated in a short course	0.0446	0.953	0.0968	0.902	-0.9368	0.278
Male	0.2025	0.217	0.1936	0.151	0.4319	0.009
Had a disability (1995)	2.1055	0.011				
Father's occ manager/prof/para-prof			-0.2217	0.132		
Mother's occ manager/prof/para-prof	-0.3653	0.028	-0.2422	0.127	-0.2939	0.075
Wealth Index (weighted) (1996) [0-100]			0.0033	0.220		
Father lived at home & worked (1997)			0.2897	0.105	0.3721	0.034
Reading achievement score (1995) [0-20]	-0.0230	0.302	-0.0210	0.342	-0.0230	0.321
Maths achievement score (1995) [0-20]	0.0419	0.083	0.0060	0.800	-0.0610	0.015
Factors - attitudes towards school (1995)						
— Enjoys school	0.1928	0.010				
Factors - things I would like to do (1996)						
— Problem solver	0.1288	0.124			-0.1600	0.061
— Handy-person					0.1274	0.091
— People-person	-0.2937	0.000				
Factors – view of self (1997)						
— Extrovert	0.1279	0.081				
— Easy-going					0.1847	0.012
Observations	977		991		868	
Degrees of freedom	12		10		11	
	X^2		X^2		X^2	
Likelihood ratio	89.6	0.000	65.7	0.000	57.8	0.000
Score	86.1	0.000	64.2	0.000	56.0	0.000
Wald	78.2	0.000	61.1	0.000	52.6	0.000
Concordant (percent)	67.1		64.5		64.0	
Discordant (percent)	32.6		35.1		32.6	

Note: Factors scores are calculated to have a mean of zero and standard deviation of one for the sample overall. Other variables are either dummy (binary) variables or else their range is given in square brackets.

Job satisfaction

Further indicators of job quality are available through a series of questions where the respondent was asked to rate their satisfaction with various aspects of their job on a 4-point scale covering 'very satisfied', 'fairly satisfied', 'fairly dissatisfied' and 'very dissatisfied'. Given this limited number of discrete but ordered possible outcomes for the dependent variable an appropriate technique to undertake a multivariate analysis of the satisfaction ratings is the ordered probit model. In this case, the probability of observing each of the outcomes (satisfaction rankings) is given by:

$$(4a) \qquad P(Y_i = 4) = C + (1 - C)F(\beta X_i + \chi T_i)$$

$$(4b) \qquad P(Y_i = 1..3) = (1 - C)(F(\alpha_{1..3} + \beta X_i + \chi T_i) - F(\beta X_i + \chi T_i))$$

where C is the natural threshold or response rate. In essence, the model sequentially estimates the effect of the vector of individual characteristics, X_i, and participation in traineeships, T_i, upon the probability of the individual indicating they are dissatisfied rather than very dissatisfied; satisfied rather than dissatisfied and very satisfied rather than satisfied.

We estimate ordered probit models for respondents' satisfaction rankings with the kind of work they do, with their pay, their training opportunities and with their opportunities for promotion in each of 2000, 2001 and 2002. Again the sample for estimation must be reduced to persons in employment in those years, and is further reduced to the extent that there are missing values for the dependent and independent variables. The full results are reported in Table 11 (satisfaction with the kind of work you do), Table 12 (pay), Table 13 (training opportunities) and Table 14 (promotion opportunities). As with the prior multivariate models for outcomes we initially include a range of explanatory variables to control for schooling and traineeship participation; early numeracy and literacy, socio-economic background and other personal characteristics. Variables for which the estimated effect on satisfaction is small and statistically insignificant are removed, but gender, whether or not the individual completed Year 12, the indicators of traineeship and short course participation and the standardised scores for reading and maths tests administered in 1995 are retained in all models.

Where there are k possible responses, there will be (k-1) threshold levels. The model produces an intercept term for each threshold level, so there will be (k-2) estimated parameters in addition to the normal intercept term. In our case of a four-level response model, the intercept term is reported along with the two (4 minus 2) additional parameters labelled inter.2 and inter.3.

In results not reported, a variable indicating whether or not the individual had completed their traineeship was tested along with the explanatory variables appearing in Tables 11 to 14. Completion cannot be definitively determined for all observed trainees, however the variable is significant in two of the twelve models for job satisfaction. For the model for satisfaction with training opportunities in 2001, the completion indicator has an estimated coefficient of +0.35 and is significant at the 5 per cent level. Its inclusion reduces the estimated impact of participation in a traineeship marginally. One interpretation is that participation in a traineeship is (still) associated with greater satisfaction with training opportunities in 2001, but that the effect is greater for those who completed their traineeship. However, the effect may also simply capture other unobserved individual attributes associated with the likelihood of a trainee completing their traineeship. For the same year the completion indicator is positively and significantly associated (at the 5 per cent level) with greater satisfaction with promotion opportunities. In this model the coefficient on traineeship participation remains insignificant, suggesting there are benefits from completing a traineeship for this outcome measure, but only for those who complete. Again, this may be due either to completion *per se* or unobserved characteristics associated with the likelihood of completing.

Table 11: Probit models of satisfaction ratings: 'how satisfied are you with the kind of work you do?'; employed persons - 2000, 2001 and 2002

	2000		2001		2002	
	$\widehat{\beta}$	Prob >t-stat	$\widehat{\beta}$	Prob >t-stat	$\widehat{\beta}$	Prob >t-stat
Intercept	-0.4372	0.004	-0.2969	0.066	-0.5205	0.011
Completed Year 12	-0.0319	0.641	-0.0130	0.860	0.1001	0.281
Participated in a traineeship	0.1521	0.018	0.1373	0.046	0.0151	0.861
Participated in a short course	0.0246	0.944	0.1978	0.578	-0.5006	0.253
Male	0.0622	0.319	-0.0768	0.257	0.0715	0.412
English not 1st language at home (1995)					-0.3003	0.161
Father lived at home & worked (1997)	0.1463	0.046	0.0020	0.113		
Mother lived at home & worked (1997)					0.1124	0.200
Reading achievement score (1995) [0-20]	-0.0152	0.123	-0.0139	0.195	-0.0042	0.759
Maths achievement score (1995) [0-20]	0.0103	0.337	0.0050	0.666	-0.0035	0.806
Factors – attitudes towards school (1995)						
— Enjoys school					0.0813	0.086
Factors – things I like to do (1996)						
— People-person					-0.1138	0.012
Factors – view of self (1997)						
— Extrovert	0.0900	0.006			0.0771	0.078
— Easy-going	0.0939	0.003	0.1169	0.001	0.0835	0.047
Inter.2	1.7533		1.8512		1.9577	
Inter.3	2.4811		2.5207		2.6418	
Observations	1423		1241		820	
Log Likelihood	-1327.1		-1116.9		-720.4	

Note: Factors scores are calculated to have a mean of zero and standard deviation of one for the sample overall. Other variables are either dummy (binary) variables or else their range is given in square brackets.

Table 12: Probit models of satisfaction ratings: 'how satisfied are you with the pay you get?'; employed persons - 2000, 2001 and 2002

	2000		2001		2002	
	$\widehat{\beta}$	Prob >t-stat	$\widehat{\beta}$	Prob >t-stat	$\widehat{\beta}$	Prob >t-stat
Intercept	-0.9277	0.000	-0.5330	0.002	-0.7751	0.000
Completed Year 12	0.0514	0.430	0.1605	0.042	0.3087	0.000
Participated in a traineeship	-0.0069	0.910	-0.0208	0.779	0.0165	0.819
Participated in a short course	-0.3432	0.310	-0.7046	0.071	-0.2479	0.488
Male	-0.0835	0.162	-0.1426	0.052	-0.1072	0.130
English not 1st language at home (1995)			-0.2915	0.111		
Mother lived at home & worked (1997)					-0.1177	0.113
Reading achievement score (1995) [0-20]	0.0200	0.035	-0.0071	0.539	0.0181	0.110
Maths achievement score (1995) [0-20]	0.0020	0.843	-0.0075	0.549	-0.0218	0.074
Factors - attitudes towards school (1995)						
— Finds school a happy and safe place			0.0811	0.035		
Factors – view of self (1997)						
— Extrovert					0.0730	0.044
Inter.2	1.7574		1.8277		1.8187	
Inter.3	2.4896		2.5074		2.6024	
Observations	1491		1022		1081	
Log Likelihood	-1484.4		-999.0		-1052.8	

Note: Factors scores are calculated to have a mean of zero and standard deviation of one for the sample overall. Other variables are either dummy (binary) variables or else their range is given in square brackets.

Table 13: Probit models of satisfaction ratings: 'how satisfied are you with your opportunities for training?'; employed persons - 2000, 2001 and 2002

	2000		2001		2002	
	$\widehat{\beta}$	Prob >t-stat	$\widehat{\beta}$	Prob >t-stat	$\widehat{\beta}$	Prob >t-stat
Intercept	-0.2856	0.089	-0.3019	0.135	-0.1308	0.445
Completed Year 12	-0.0758	0.291	-0.0565	0.531	0.0727	0.356
Participated in a traineeship	0.2477	0.000	0.2442	0.004	0.0525	0.471
Participated in a short course	-0.0516	0.888	-0.2523	0.603	-0.6284	0.130
Male	-0.1253	0.052	-0.2644	0.004	-0.1595	0.026
Had a disability (1995)	-0.2435	0.361				
English not 1st language at home (1995)					-0.2828	0.115
Father's occ manager/prof/para-prof	0.1006	0.145				
Father's education – degree or diploma			0.2390	0.033		
Father lived at home & worked (1997)	0.2141	0.012				
Mother lived at home & worked (1997)	-0.1318	0.058				
Reading achievement score (1995) [0-20]	-0.0170	0.104	-0.0150	0.249	0.0007	0.950
Maths achievement score (1995) [0-20]	0.0019	0.867	0.0052	0.714	-0.0257	0.037
Factors – things I like to do (1996)						
— Businessperson			0.0801	0.085		
— Artist			0.0705	0.115	0.0985	0.011
Factors – view of self (1997)						
— Easy-going			0.1214	0.002	0.0593	0.098
Inter.2	1.3107		1.3248		1.2127	
Inter.3	2.0947		2.2562		2.1254	
Observations	1230		778		986	
Log Likelihood	-1384.1		-876.9		-1157.9	

Note: Factors scores are calculated to have a mean of zero and standard deviation of one for the sample overall. Other variables are either dummy (binary) variables or else their range is given in square brackets.

Table 14: Probit models of satisfaction ratings: 'how satisfied are you with your opportunities for promotion?'; employed persons - 2000, 2001 and 2002

	2000		2001		2002	
	$\widehat{\beta}$	Prob >t-stat	$\widehat{\beta}$	Prob >t-stat	$\widehat{\beta}$	Prob >t-stat
Intercept	-0.4270	0.026	-0.4235	0.006	-0.4142	0.016
Completed Year 12	-0.0147	0.869	0.0208	0.777	0.1331	0.095
Participated in a traineeship	-0.0339	0.676	0.0098	0.886	-0.1009	0.170
Participated in a short course	0.0908	0.843	-0.2997	0.353	0.4003	0.286
Male	-0.1100	0.194	-0.1388	0.039	-0.0548	0.504
Had a disability (1995)	-0.4031	0.240			-0.5362	0.026
Father's occ manager/prof/para-prof	0.2286	0.011				
Father's education – degree or diploma	-0.2429	0.035				
Reading achievement score (1995) [0-20]	-0.0147	0.249	-0.0203	0.055	-0.0147	0.208
Maths achievement score (1995) [0-20]	0.0012	0.932	0.0017	0.887	-0.0151	0.226
Factors – things I like to do (1996)						
— Businessperson					-0.0917	0.027
— Artist					0.0598	0.134
— Handy-person	0.0672	0.089				
Factors – view of self (1997)						
— Extrovert	0.0775	0.058			0.0887	0.020
— Easy-going			0.1043	0.002	0.0819	0.027
Inter.2	1.3480		1.3461		1.3945	
Inter.3	2.2159		2.2655		2.2392	
Observations	811		1107		955	
Log Likelihood	-948.5		-1307.8		-1126.6	

Note: Factors scores are calculated to have a mean of zero and standard deviation of one for the sample overall. Other variables are either dummy (binary) variables or else their range is given in square brackets.

Career prospects

The final labour market outcome indicator investigated is individuals' responses to a question on how happy they are with their career prospects. Responses are given on a 4-point scale ranging from very happy, fairly happy, fairly unhappy and very unhappy. Thus the ordered probit model as set out above is used, with the same initial set of explanatory variables tested. Note that this question is asked of all persons in the survey, and thus the sample is no longer restricted to persons who are employed. However, people may have not answered or chosen the 'unsure/can't say' category if they felt it did not apply to them. Table 15 presents the regression results.

Table 15: Probit models of rated level of happiness with career prospects; 2000, 2001 and 2002

	2000		2001		2002	
	$\widehat{\beta}$	Prob >t-stat	$\widehat{\beta}$	Prob >t-stat	$\widehat{\beta}$	Prob >t-stat
Intercept	-0.9742	0.000	-0.7650	0.000	-0.4548	0.009
Completed Year 12	0.2095	0.001	0.1150	0.140	0.0661	0.408
Participated in a traineeship	0.1299	0.032	0.1934	0.008	0.0000	1.000
Participated in a short course	-0.2313	0.435	0.4082	0.287	0.0560	0.880
Male	0.0700	0.284	0.0412	0.563	0.0581	0.433
Had a disability (1995)	-0.2726	0.177				
English not 1st language at home (1995)					-0.3118	0.084
Father's occ manager/prof/para-prof			0.1645	0.033		
Wealth Index (weighted) (1996)	0.0023	0.042			0.0040	0.006
Lived in sole-parent home (1997)	0.2379	0.020				
Father lived at home & worked (1997)	0.2249	0.010				
Reading achievement score (1995) [0-20]	-0.0044	0.627	-0.0006	0.959	-0.0132	0.259
Maths achievement score (1995) [0-20]	0.0191	0.053	0.0184	0.130	0.0095	0.450
Factors - attitudes towards school (1995)						
— finds school a happy and safe place			0.1091	0.004	0.0780	0.045
Factors – things I like to do (1996)						
— Businessperson	-0.0630	0.055				
— Handy-person					0.0706	0.056
Factors – view of self (1997)						
— Extrovert	0.0977	0.001			0.0914	0.016
— Easy-going	0.1115	0.000	0.0795	0.025	0.1166	0.002
Inter.2	1.7175		1.6998		1.5877	
Inter.3	2.6078		2.6051		2.7854	
Observations	1660		1098		1017	
Log Likelihood	-1537.1		-1028.3		-971.2	

Note: Factors scores are calculated to have a mean of zero and standard deviation of one for the sample overall. Other variables are either dummy (binary) variables or else their range is given in square brackets.