Industry training – profiling achievement and assessing value for money

Learners in tertiary education

This report forms part of a series called Learners in tertiary education.
Other topics covered by the series are access, pathways, support, participation, retention and qualification completions.

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www.educationcounts.govt.nz

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Key findings:

- This study categorises industry training participants to identify the factors associated with non-completion of programmes. 67 percent of trainees do not complete their programmes. The question is why? Evidence suggests employees changing or losing their jobs may only account for up to a third of these.

- This study identifies two primary types of non-completing trainees, the *Non-completion type A* and the *Non-completion type B* trainees.

- *Non-completion type A* trainees attain 50 percent or fewer credits required of their programme and hence, don't complete. They can be described as **very low credit trainees**. They are characterised by lower than intended durations and lower than average volume programmes, but they take programmes at higher than average NZQF levels. Many have low prior educational achievement. These factors suggest that a large subgroup of these trainees is struggling in programmes that are too challenging for them to cope with.

- Very low credit trainees represent 30 percent of all industry trainees. Their training consumes 36 percent of industry training funding.

- A further 24 percent of trainees do not complete their programme and attain no credits at all, but still consume reasonably high levels of funding. This group, the *Non-completion type B* group are called in this report the **no credit trainees.** They consume 19 percent of the total industry training fund.

- There may be a number of reasons why these groups do not complete. This analysis shows that 'casual' use of the industry training fund by employers is one significant factor in non-completion. Some employers may want employees to gain skills but they may be less interested in their staff getting whole qualifications that may make them likely to be recruited by a competitor or may not wish to pay for the parts they see as less relevant to their own firm.

- And some trainees may simply attend bits of training when asked to do so by their employer, without thinking about qualifications.

- The TEC operational funding changes, phased in from 2011, will concentrate government funding on those trainees who are completing credits and qualifications. These changes will have an effect on casual trainees' access to the industry training fund. These changes will occur outside the timeframe of this analysis. Agencies will be monitoring trends in the future to see if further changes are needed.

This analysis builds on previous studies on industry training and Modern Apprenticeships.[1] It uses administrative data to categorise industry trainees' participation profile, and to assess the return on the money spent by government on workplace-based training. It focuses on non-targeted industry training, and therefore excludes Modern Apprenticeships.

Industry training is administered by the Tertiary Education Commission (TEC), and is intended to lead to attainment of national qualifications. Industry training programmes are flexible in length, with some programmes consisting of only 40 credits per trainee.[2] They can be taken over varying time periods, depending on the requirements of each participant and their employer. Participants are already involved in employment before starting training.

Industry Training Organisations (ITOs) administer training funds on behalf of the TEC, disbursing payments for on-job and off-job training and assessment. They play standard-setting and assessment-arranging roles, as well as a general administration role, but do not themselves deliver training. Training occurs on-job, in the workplace, usually delivered by other employees of the firm. Training may also include an off-job component, where trainees spend time at an external training provider, typically a polytechnic or a private training establishment.

1.1 Assessing the quality of industry training

There are several methods of measuring success in industry training. Analyses of programme variables to date have used programme completion as an indicator of the outcome of training. Previous analyses explored the probability that trainees in industry training and Modern Apprenticeships would complete their programmes. Mahoney (2009a) found that the probability of a trainee completing their programme in industry training is 33 percent. An estimated 35 percent of trainees starting industry training for the first time in 2003 completed at least one programme within five years.[3]

A number of factors are associated with completion of programmes in industry training.[4] The ITO administering the training, a proxy for the industry, is the most important variable when other factors are controlled for. In other words, quality varies between industries - if all other things were equal, a trainee's probability of completing a programme would differ depending on the ITO they were under or the industry they worked in.

The level of training also matters, with programmes at lower levels of the New Zealand Qualifications Framework (NZQF) more likely to end with completion than programmes at higher levels. The older trainees are, and the higher the level of their previous qualification, the more likely they are to complete their programme (controlling for each factor separately). Trainees located in highly urbanised areas are in general less likely to complete their programme than those who work in less densely populated centres. Shorter programmes are more likely to result in completion than longer programmes, and Limited Credit Programmes are more associated with completion than those that lead directly to national qualifications.

Demographic factors such as ethnic group and gender also matter. European trainees are more likely to complete their programme than Māori or Pasifika trainees, while females complete at higher rates than males.

A comparison between a cohort of matched industry training and Modern Apprenticeships participants concluded that Modern Apprenticeships completion rates were probably higher than

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[1] Mahoney 2009a and 2009b.
[2] Limited credit programmes may only consist of 20 credits.
[3] Cohort achievement measures are available on Education Counts:
http://www.educationcounts.govt.nz/__data/assets/excel_doc/0007/16297/Achievement-in-workplace-based-learning-13082010.xls
[4] Mahoney 2009a.

for equivalent industry trainees because of a number of factors.[5] The more rigid structure of Modern Apprenticeships, such as greater stipulation for a training plan, transparency resulting from the MA coordinator who acts as a go-between, and the higher brand awareness of Modern Apprenticeships, all mean that it is unlikely a trainee and employer are unaware of the requirements of the apprenticeship. Hence the training is more likely to be applied in practice as it is intended by the scheme design. In addition, many apprentices work in fields where career progression is blocked unless the person has a qualification needed for registration.

But previous studies on programme non-completion have not revealed the whole story of completion in industry training. This study explores this question by presenting a profile of the largest groups of programme completers and non-completers. They are analysed to identify the factors associated with success and non-completion.

This analysis is intended to help policy makers to adjust industry training settings to improve outcomes for learners and ensure good value for the investment made by the government.

1.2   Characteristics of those who don't complete

This report sets out to divide trainees into categories based on their characteristics. We focus on those trainees who don't complete their programmes. In particular, our analysis looks at two large groups that together consume 55 percent of industry training funding:

A. Very low credit trainees (*Non-completion type A)* do not complete their programme. Their programmes tend to be at higher than average NZQF levels. These trainees have lower than intended durations but they are in programmes that have average volume (suggesting higher intensity of study than is normal). Many of the very low credit trainee group have low prior educational achievement. The higher study intensity coupled with the low prior achievement suggests that some of these trainees are struggling in programmes that are too difficult for them to cope with.

While many of the very low credit trainees have low prior achievement, there is a subgroup who enter industry training having already completed higher level qualifications. That subgroup is likely to be aiming to achieve only a few credits that relate to skills they need for the job; completing the full programme may be of lesser importance.

B. No credit trainees (*Non-completion type B)* attain no credits at all. Their consumption of funding is about average.

Our analysis looks at:

- how large these groups are

- how much funding they consume

- their demographic and training characteristics.

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[5] Mahoney 2010a.

2 ABOUT INDUSTRY TRAINING

2.1 Who pays for industry training?

The cost of training is shared between government and industry in a theoretical 70 percent / 30 percent split. The split reflects the expectation that each party gains from training. Society as a whole benefits from having a skilled labour force which is able to work productively and efficiently, and industry also benefits from increasing the pool of skilled labour, which in turn helps lower the direct cost to employers of employing skilled labour.

The government contribution is disbursed through the industry training fund. The TEC reimburses ITOs for training and assessment activity occurring in the workplace using a flat rate based on the volume and expected duration of the programme.[6] TEC pays for trainees who are active at the end date of each quarter, based on a flat rate multiplied by the volume of learning of each programme (measured by the STM rate). ITOs pass funds on to contracted providers, including training providers for arranging off-job training, workplace-based trainers and workplace-based and roving assessors.

Volume of training is measured as the total number of credits available in each programme, and duration is the expected duration of the programme for the average participant. A Standard Training Measure (STM) is equivalent to a training rate of 120 credits per year. TEC currently reimburses ITOs on a quarterly basis.

For example:

A 180 credit programme is delivered over four years. This will result in 180/4 = 45 credits per year. The derived STM rate of this programme is 45/120 = 0.375

If 300 trainees enrol in this programme, total government funding for the year is 300 x 0.375 x $2,844.44 = $319,999.50 (where $2,844 is the 2009 STM reimbursement rate, excluding GST).

$$\text{STMs delivered in 1 year} = \frac{300 \times 45}{120} = 112.5 \text{ STMs}$$

TEC has adjusted funding rules to limit volume of learning to a maximum of approximately half an equivalent full-time student load (0.7 STMs), and to require evidence of credit achievement as the basis of funding. Programmes intended to ensure workers meet statutory requirements, such as health and safety requirements will also no longer be funded. These changes take effect from January 2011.[7]

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[6] On the basis of the proportion of the volume of training per year in each programme to 120 credits per year (considered a full-time load).
[7] TEC, 2010.

The cost of training is shared between government and industry, with government paying approximately 70 percent of the cost of the training.[8] Table 1 shows the cash contribution of government and industry over the 2003 to 2009 period.

Table 1 – Industry training funding by source by year

Year	Government funding ($000s)	Industry cash contribution ($000s)	Total funding ($000s)	Government funding (% of total)	Industry funding (% of total)
2003	97,549	41,205	138,755	70	30
2004	124,823	46,419	171,243	73	27
2005	136,718	55,271	191,989	71	29
2006	166,784	61,061	227,846	73	27
2007	190,579	66,258	256,838	74	26
2008	198,099	70,603	268,702	74	26
2009	203,466	87,487	290,953	70	30

Source: Tertiary Education Commission
Notes:
1. Funds are GST inclusive.
2. Funding is government funding for industry training and Modern Apprenticeships.

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[8] Only Government's contribution is referred to where value for money determinations are made in this analysis.

3 THE PROFILES OF INDUSTRY TRAINEES

3.1 Methodology

This analysis 'profiles' participants along three dimensions to determine the wider characteristics of participants falling into the most-populated categories.

Participants were categorised by the following three dimensions:

- STM consumption
- credit attainment and
- success in a programme (or otherwise) measured by attainment of a programme completion.

The groups were labelled according to their position across the three dimensions. The two largest groups' characteristics were further analysed using statistical modelling to determine their validity and wider predictive factors.

3.2 Cohort selection

A cohort of trainees was selected from the industry training Performance Management System (PMS). The basis of cohort selection was as follows:

- The earliest start date in industry training (not Modern Apprenticeships) was set between 1 January 2005 and 31 December 2006.
- Trainees had exited their programme by 31 December 2009.
- Programmes were limited to those leading directly to national qualifications on completion. Selected trainees were excluded if they were enrolled in a Limited Credit Programme (LCP), Supplementary Credit Programme (SCP), Trade Certificate (TC) or unidentifiable programme type in industry training.
- Trainees were involved in one programme only throughout the training, and were active in one fund category only (in industry training with no Modern Apprenticeships activity).
- Prioritised ethnic group of trainee was limited to one of European, Māori, Pasifika or 'other'. Asian and 'not stated' trainees were excluded from cohort selection due to their a-typicality (because patchiness of distribution between sub-categories of other variables is undesirable in logistic regression analysis).

These selection criteria produced a cohort comprising 24,490 individual trainees.[9]

3.3 Profiling participants

We classified the cohort based on three primary dimensions:

- Standard training measure (STM) match – whether (or not) the trainee was funded for the number of standard training measures intended for each programme.
- Credit match – whether the trainee attained the number of credits set out for each programme.
- Exit indicator – whether the trainee completed their programme.

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[9] Appendix table 3 shows the split of cohort trainees by demographic and programme related variables.

Inclusion within these categories depended on the level of consumption of STMs and attainment of credit completion within the thresholds shown in tables 2 (STM match criteria) and table 3 (credit match criteria) below.

Table 2 – STM match criteria

Label	Condition
Highest	trainee activity attracted > 0.5 STM points above expected total
High	trainee activity attracted > 0.2 and <= 0.5 STM points above expected total
Match	trainee activity attracted between -0.2 and +0.2 STM points of expected total
Low	trainee activity attracted between -0.2 and -0.5 STM points below expected total
Lowest	Trainee activity attracted -0.5 or fewer STM points than expected total
Consumed none	No STMs consumed

Table 3 – Credit match criteria

Label	Condition
Higher	Credit attainment >150 % of programme stipulation
High	Credit attainment between 125% and 150% of stipulation
Match	Credit attainment between 76% and 125% of stipulation
Low	Credit attainment between 50% and 75% of stipulation
Lower	Credit attainment < 50 % of programme stipulation
Attained none	trainee attained no credits

The categorisation of participants across these three dimensions is shown in table 5 below (and in more detail in appendix tables 1 and 2).

A large number of combinations across the three categories are possible, however, seven main profiles stood out on account of their size. The rest were grouped into 'all others'. These categories were assigned labels based on interpretation of the activity profile. This interpretation revealed the characteristics and intentions of the trainee and the employer. These are shown (in a simplified form) in table 4 below. All trainees were assigned to one of these eight categories. The categories are distinct – no trainee could be assigned to more than one category.

Table 4 – Trainee categorisation criteria

Label	Completes programme?	STM match	Credit match
Non-completion type A (very low credit trainees)	No	Match / Low	Lower
Non-completion type B (no credit trainees)	No	High / Match / Low	None attained
Non-completion type C	No	Match	Match / Low
Completion type A	Yes	Match	Match
Completion type B	Yes	Match	High / Higher
Completion type C	Yes	High	Match
Possible Recognition of Current Competency / Recognition of Prior Learning (RCC/RPL)	Yes	Low / Consumed none	Match

Table 5 shows the distribution of learners between the categories, with the categorisation disaggregated across the three dimensions.

Table 5 – Trainee categorisation criteria dimensions

Sum of count		Exit_indic		
STM consumed	Credits gained	Completed	Did not complete	Grand Total
Highest	Higher		2	2
	Low		2	2
	Lower		4	4
	None attained		2	2
Highest Total			10	10
High	Higher	10	20	30
	High	40	5	45
	MATCH	**386**	97	483
	Low	32	93	125
	Lower	19	**443**	462
	None attained	5	**441**	446
High Total		492	1,099	1,591
	MATCH	**211**	67	278
	High	**497**	110	607
	MATCH	**5,502**	879	6,381
	Low	**285**	1,047	1,332
	Lower	**198**	6,557	6,755
	None attained	120	5,140	5,260
MATCH Total		6,813	13,800	20,613
Low	Higher	23	5	28
	High	12	12	24
	MATCH	**357**	54	411
	Low	26	70	96
	Lower	8	**448**	456
	None attained	4	**283**	287
Low Total		430	872	1,302
Lowest	Higher	2		2
	High	3	1	4
	MATCH	32	7	39
	Low	3	8	11
	Lower	4	22	26
	None attained	17	13	30
Lowest Total		61	51	112
Consumed none	Higher	13		13
	High	16	1	17
	MATCH	**319**	4	323
	Low	9	1	10
	Lower	18	197	215
	None attained	11	273	284
Consumed none Total		386	476	862
Grand Total		8,182	16,308	24,490

Completion type C ← (MATCH, High row)
Completion type B ← MATCH Higher
Completion type B ← High
Completion type A ← MATCH
RCC/RPL ← Low
RCC/RPL ← Lower
RCC/RPL ← MATCH (Low)
RCC/RPL ← MATCH (Consumed none)

Non-completion type A (462, High Lower)
Non-completion type B (446, High None attained)
Non-completion type C (6,381, MATCH)
Non-completion type C (1,332, Low)
Non-completion type A (6,755, Lower)
Non-completion type B (5,260, None attained)
Non-completion type A (456, Low Lower)
Non-completion type B (287, Low None attained)

Table 6 shows summaries of each category across a number of measures, including a count of the number of trainees, the sum of STMs consumed, the funding paid for their training activity and the average cost in government funding for trainees in each category.

Table 6 – Trainee categorisation detail

Category of trainee	Number of trainees in cohort	% of total trainees	Total STMs consumed	Average STMs consumed	Total funding ($000s)	% of total cost	Average cost per trainee ($s)
Non-completion type A (very low credit trainees)	7,448	30	6,165	0.8	16,172	36	2,171
Non-completion type B (no credit trainees)	5,864	24	3,305	0.6	8,611	19	1,469
Completion type A	5,502	22	3,621	0.7	9,466	21	1,721
All others	2,294	9	1,785	0.8	4,721	10	2,058
Non-completion type C	1,926	8	1,625	0.8	4,286	9	2,225
Completion type B	708	3	389	0.6	1,017	2	1,436
Possible recognition of prior learning (RPL) / recognition of current competency (RCC)	708	3	349	0.5	935	2	1,321
Completion type C	40	<1	41	1.0	105	<1	2,637
Total	24,490	100	17,282	0.7	45,314	100	1,850

The following tables show the observed distribution of the trainees in the cohort by the three largest categories.

3.4 Observed category distribution by ITO

The three largest categories are *non-completion type A (very low credit trainees), non-completion type B (no credit trainees)* and *completion type A*. Together they represent 76 percent of the cohort. The observed proportions of trainees by each variable within the three largest categories are shown in appendix tables 3 to 6. The following figures show incidence of the three largest categories by value of each variable.

Figure 1 shows a wide variation by ITO. Some ITOs, such as local government, have very high proportions of trainees classed as *completion type A. Non-completion type A (very low credit trainees)* make up a high proportion of trainees with equine, fire and rescue, FITEC, seafood and Tranzqual, while *non-completion type B (no credit trainees)* make up a large proportion of trainees in social services, printing, opportunity, hospitality and flooring ITOs.

Figure 1 – Distribution of trainees by the three largest categories

Percent of trainees in ITO cohort

Categories (top to bottom): Tranzqual, Sports turf, Social services, SFRITO, Seafood, Retail meat, Retail, Public sector, Printing, Plumbers gasfitters drainlayers, Plastics and materials processing, Pharmacy, Opportunity, NZITO, Motor, Local government, Joinery, InfraTrain, Hospitality, Horticulture, Hairdressing, Flooring, FITEC, Fire and rescue, Extractive, ETITO, Equine, Electricity supply, Creative trades, Competenz, Community support services, Building service contractors, Building and construction, Boating, ATTO, Apparel and textile, Agriculture, Grand Total

Legend:
- Non-completion type A (very low credit trainees)
- Non-completion type B (no credit trainees)
- Completion type A

3.5 Observed category distribution by NZQF level

Figure 2 below shows the observed distribution of trainees by the three largest categories by NZQF level. There is a wide variation of trainees in each of these categories by level.

Non-completion type A (very low credit trainees) make up a high proportion of trainees in level 3 qualifications or higher while *non-completion type B (no credit trainees)* make up a large proportion of trainees in programmes at levels 1 and 2.

Completion type A are highest at levels 1 and 2, but do not make up the largest category at any level.

Figure 2 – Distribution of trainees by the three largest categories by NZQF level

■ Non-completion type A (very low credit trainees)
■ Completion type A
■ Non-completion type B (no credit trainees)

3.6 Observed category distribution by STM rate

The STM rate of each programme shows the volume of learning of the 'average learner' participating in it. The rate is a proportion of a full-time study load of 120 credits per year. Figure 3 below shows the observed distribution of trainees by the three largest categories by STM rate of the programme.

Non-completion type A make up a high proportion of trainees in programmes at 0.6 STM rate (under half a full-time study load) or lower, while *non-completion type B* make up a large proportion of trainees in programmes with high STM rates (0.9 or greater). *Completion type A* are the largest category between 0.7 and 0.9.

Figure 3 – Distribution of trainees by the three largest categories by STM rate

■ Non-completion type A (very low credit trainees)
■ Completion type A
■ Non-completion type B (no credit trainees)
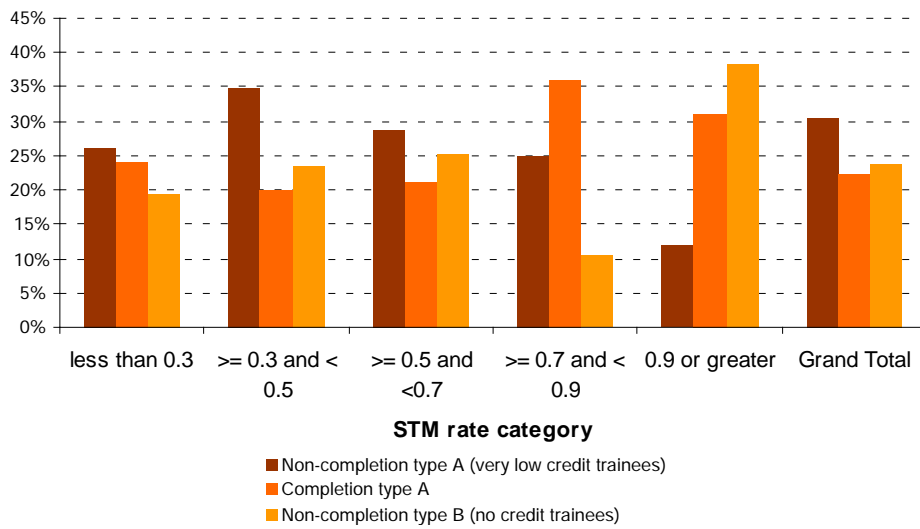
3.7 Observed category distribution by previous qualification

Figure 4 shows the observed distribution of trainees by the three largest categories, by the previous qualification of the trainee before entering industry training. There is a fairly even distribution across each qualification category except for *non-completion type A (very low credit trainees)* who make up a high proportion of trainees with no previous qualifications.

Figure 4 – Distribution of trainees by the three largest categories by previous qualification
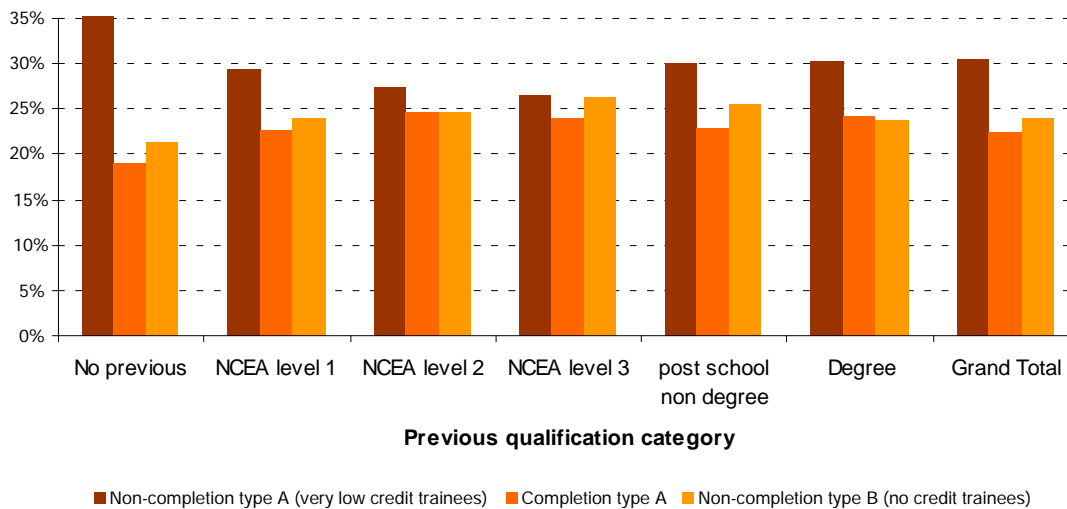
Figure 5 shows the proportion of trainees in each category by previous qualification. *Very low credit trainees (non-completion type A)* are more likely to have no, or lower prior qualifications than all trainees, or the other trainee categories shown.

Figure 5 – Proportion of trainees in each category by previous qualifications
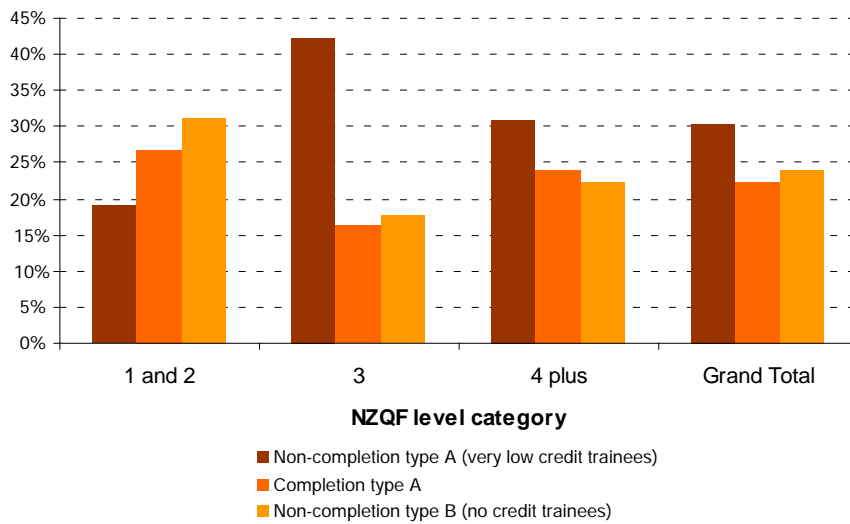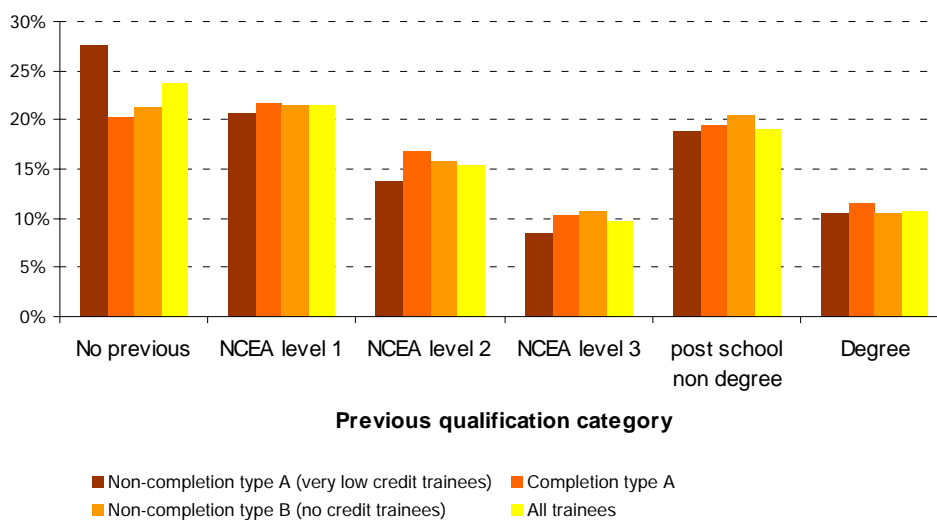
3.8 Observed category distribution by duration match

Figure 6 below shows the observed distribution of trainees by the three largest categories by their duration in training in the programme, compared to the nominal programme duration value. Table 7 explains the duration match categories. To simplify: trainees in the low and lower categories were active for significantly less time than expected for their programme, while trainees in the high or higher categories were active for a significantly longer time than intended.

Table 7 – Duration match criteria

Label	Condition
Highest	trainee active in programme > 150% of expected duration
High	trainee active >= 125% and <= 150% of expected duration
Match	trainee active between 75% and 125% of expected duration
Low	trainee active in programme >=50% and <75% expected duration
Lowest	trainee active in programme <50% expected duration
None	No duration

Non-completion type A (very low credit trainees) make up a high proportion of trainees in programmes at high or matched durations.

Non-completion type B (no credit trainees) make up a large proportion of trainees with lower than nominal durations, while *completion type A* incidence is highest at low durations.

Figure 6 – Distribution of trainees by the three largest categories by duration match
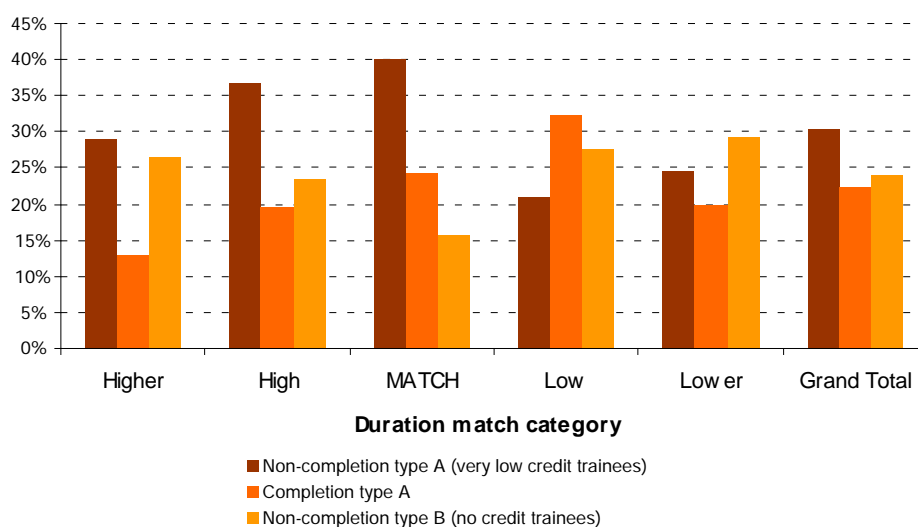
3.9 Observed category distribution by region

Figure 7 shows the observed distribution of trainees by the three largest categories by a classification of the geographic location of employment.

Non-completion type A (very low credit trainees) make up a high proportion of trainees in programmes in Auckland, Bay of Plenty, Canterbury, the East Coast, Nelson/Marlborough/West Coast, Waikato and Northland regions.

Non-completion type B (no credit trainees) make up a large proportion of trainees in the Wellington region, while *completion type A* have the highest incidence in the Southern region only.

Figure 7 – Distribution of trainees by the three largest categories by region

Non-completion type A (very low credit trainees)
Completion type A
Non-completion type B (low credit trainees)
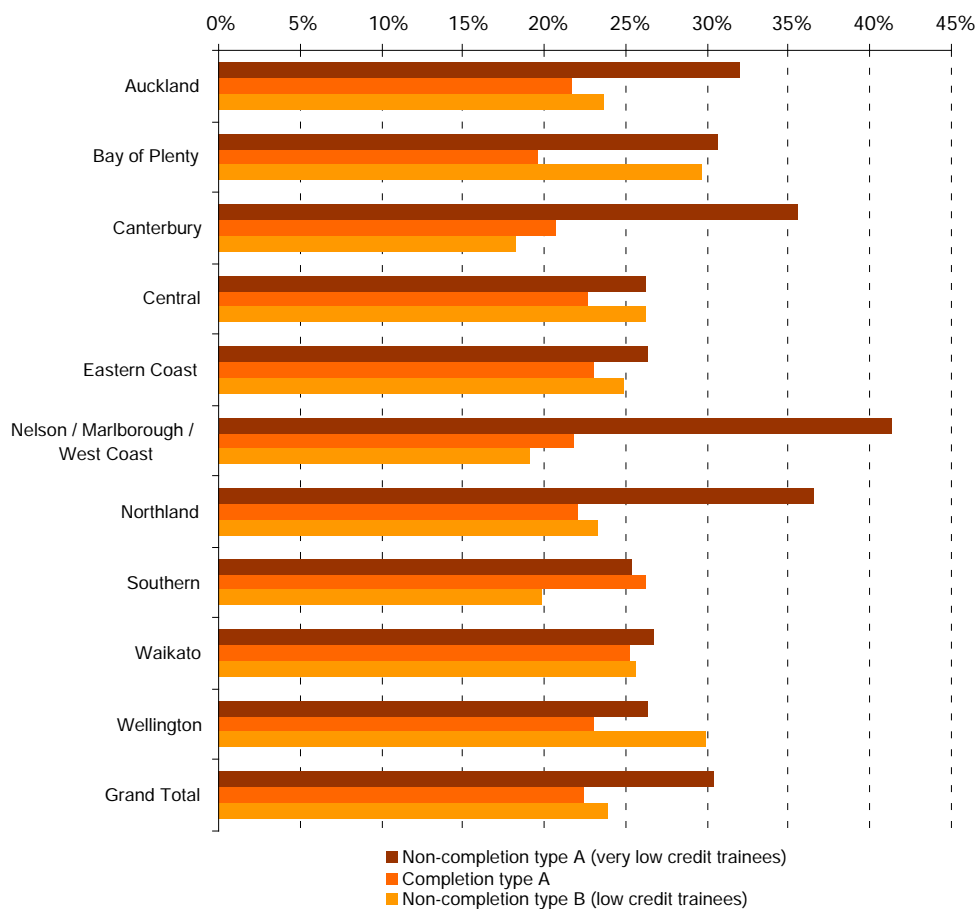
3.10   Observed category distribution by age at start

Figure 8 shows the observed distribution of trainees by the three largest categories by trainee age at first commencement of industry training.

Non-completion type A (very low credit trainees) make up a high proportion of trainees aged 20 or older at commencement.

Non-completion type B (no credit trainees) make up the largest group of trainees aged 15 to 19 years old at commencement, while *completion type A* incidence increases with the age of commencement, and is highest for trainees aged 50 years or older at commencement.

Figure 8 – Distribution of trainees by the three largest categories by age at start

3.11   Observed category distribution by ethnic group

Figure 9 shows the observed distribution of trainees by the three largest categories by reported ethnic group. *Non-completion type A (very low credit trainees)* make up a high proportion of European, Māori and Pasifika trainees. *Non-completion type B (no credit trainees)* make up the largest proportion of 'other' trainees.

Figure 9 – Distribution of trainees by the three largest categories by ethnic group

Industry training – profiling achievement and assessing value for money - Ministry of Education
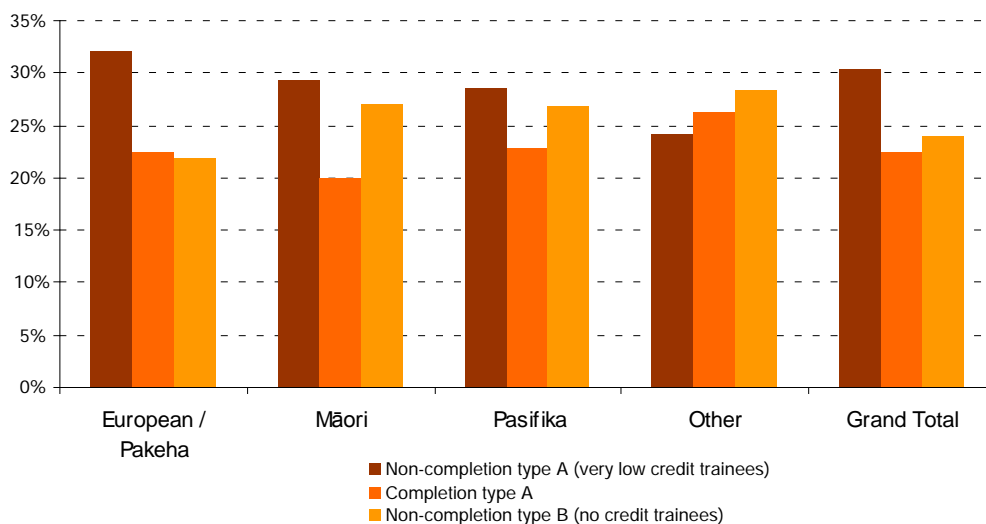
3.12   Observed category distribution by programme credit value

Figure 10 shows the observed distribution of trainees by the three largest categories by the total number of credits required to complete a programme. *Non-completion type A (very low credit trainees)* make up a high proportion trainees in programmes containing 80 or more credits.

Non-completion type B (no credit trainees) vary across the categories but are seen more frequently in lower credit programmes, as are *completion type A* trainees.

Figure 10 – Distribution of trainees by the three largest categories by programme credits

Programme credits category

■ Non-completion type A (very low credit trainees)
■ Completion type A
■ Non-completion type B (no credit trainees)
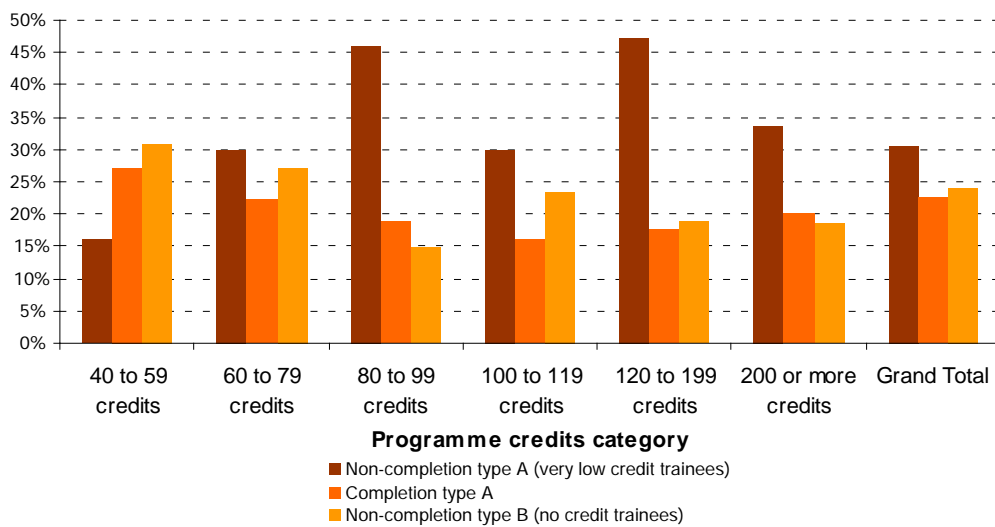
3.13 Observed category distribution by nominal programme duration

Figure 11 shows the observed distribution of trainees by the nominal duration of a programme (or the time a trainee is expected to be active in the programme).

Non-completion type A (very low credit trainees) make up a high proportion of trainees in high duration (over 19 months intended duration) programmes.

Non-completion type B (no credits) trainees are distributed more frequently in lower duration programmes, as are *completion type A* trainees.

Figure 11 – Distribution of trainees by the three largest categories by nominal programme duration

Programme duration category

■ Non-completion type A (very low credit trainees)
■ Completion type A
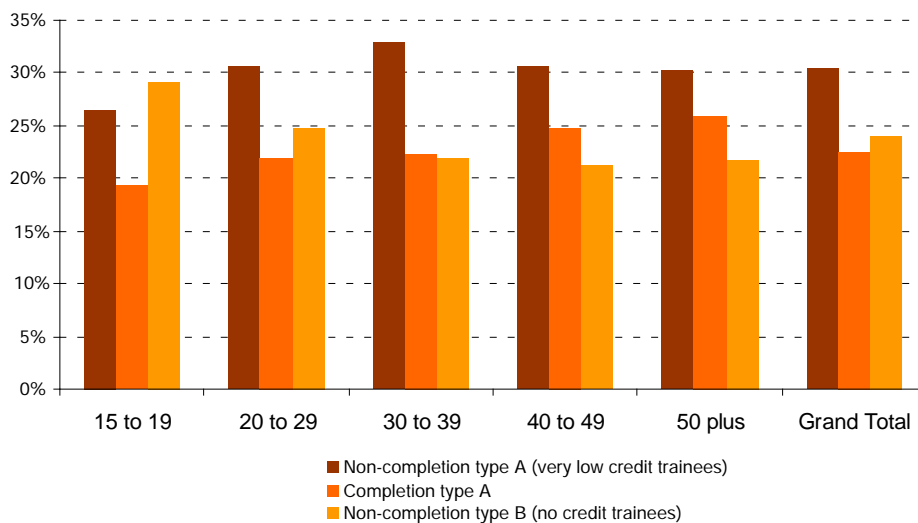■ Non-completion type B (no credit trainees)
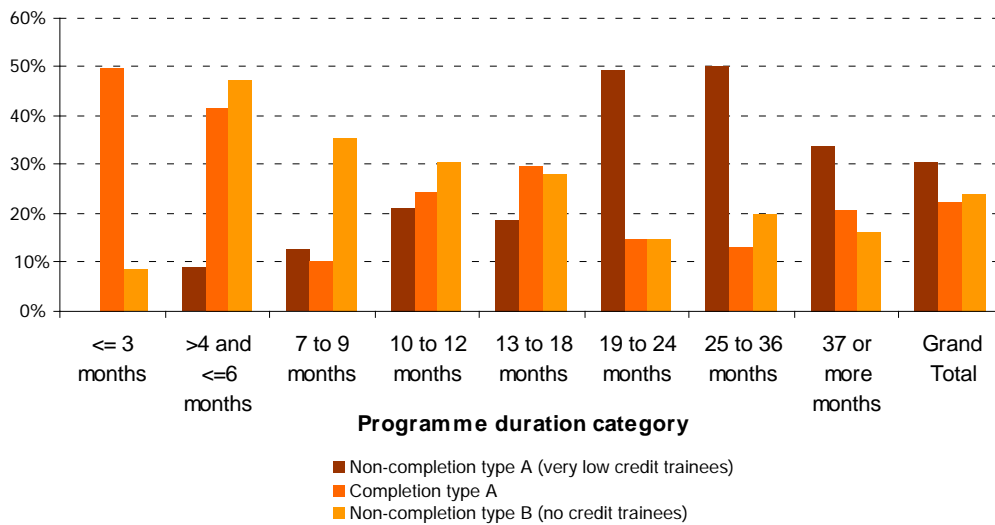
3.14   Observed category distribution by actual STMs consumed

Figure 12 shows the observed distribution of trainees by the three largest categories by the total number of STMs consumed in each programme. *Non-completion type A (very low credit trainees)* make up a high proportion trainees who have consumed high STMs.

Non-completion type B (no credit trainees) vary across the categories but are seen at higher proportions where lower numbers of STMs are consumed, while the distribution of *completion type A* trainees seems almost bi-modal.

Figure 12 – Distribution of trainees by the three largest categories by STMs consumed
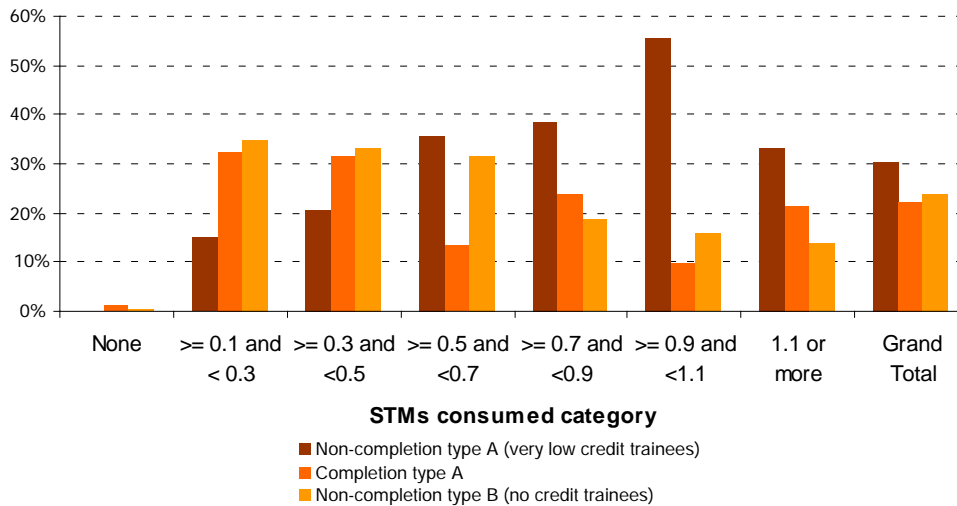
4 MODELLING NON-COMPLETION TYPE A (VERY LOW CREDIT TRAINEES)

4.1 Statistical modelling

We created two statistical models to explore the factors associated with membership in two of these categories, *non-completion type A* (very low credit trainees) and *non-completion type B (no credit trainees)*. Modelling enables us to identify the underlying characteristics associated with group membership, which observed statistics sometimes cannot identify.

These categories were chosen for further analysis because they may represent the lowest value use of the opportunities by industry training. An improvement in outcomes for these trainees could increase the effectiveness of both government and industry expenditure.

4.2 Non-completion type A category (very low credit trainees)

The largest single group in the cohort we labelled *non-completion type A* based on their participation profile.

As shown above, this group do not complete their programme (they are unsuccessful), they attain fewer credits (50 percent of or less than expected programme completers would) but consume either high, matched or low levels of STMs against expected programme values. Over 7,400 cohort participants were identified as *non-completion type A*, 30 percent of total and their activity consumed 36 percent of the total government expenditure for the cohort.

Observed statistics show that this group are more likely to have no previous qualifications than the whole cohort. [10] They are more likely to be male, be aged slightly older than all participants at commencement and to match their expected programme duration. They are also likely to be training at higher NZQF levels than the whole cohort, at lower STM rates, in longer-length programmes.

4.3 Model 1 specifications

The first model tested for wider factors associated with a trainee being classified as a *non-completion type A*, while controlling for each of the other variables. The variables entered into the model are limited, restricted by collinearity issues. For example, a cluster analysis identified that the following variables as a collinear group:

- duration match
- STMs consumed
- actual duration months

 and a second cluster:

- programme level
- programme duration
- programme credits.

Therefore only one variable of each of these was able to be entered into a model.

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[10] See appendix tables 3 and 4

The regression model produces estimates that enable comparison between each categorical independent variable with a reference category value of the variable. The reference category chosen for model 1 is specified below. The regression reference categories were chosen based on the typicality of trainees in industry training, and the requirements of the main research question, in this case, what variable values are associated with selection in the *non-completion type A* category.

A 'standard' model was created and various permutations were tested until a model with good fit and explanatory power was obtained. The standard model consisted of the following variables:

- TEC Region. Reference category = Wellington
- 19 dummy ITO variables (with values of 1 or 0) Reference = Motor Industry Training Organisation[11]
- Prioritised ethnic group. Reference group = 'European / Pākehā'
- Programme level. Reference group = levels 1 and 2
- Gender. Reference group = Male
- Age at start. Reference group = 20 to 29 years
- Duration match. Reference group = 'Match'
- Previous qualification. Reference group = No previous qualification
- Start year. Reference group = 2006
- STM rate. Reference group >= 0.3 and < 0.5

4.4 Model 1 results

The biggest contributor to variance was the ITO variable, however, lack of fit of the model meant that the best fitting model required three main interaction effects, between the ITOs and:

- Duration match * ITO
- STM rate * ITO
- Programme level * ITO

The model was able to explain 22 percent of the observed variance (max rescaled pseudo R Square statistic = 0.3053), so is a strong model.

Table 8 and figures 2 to 6 show that, controlling for the other variables in the model:

- Younger trainees are the more likely to fit the *non-completion type A* profile than older ones
- Trainees in some regions are more likely to fit the category than in others (i.e. Northland, Bay of Plenty, Auckland)
- Trainees with no previous qualifications (and conversely degree level qualifications) were the most likely to fit the *non-completion type A* profile
- Females are slightly less likely to be *non-completion type A* than males

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[11] The following ITOs were not entered into the model due to small numbers across variable categories: Boating, Building Service Contractors, Creative Trades, Equine, Fire and Rescue, Flooring, Local Government, Opportunity, Pharmacy Plastics and Materials Processing, Printing, and Sports Turf.

Table 8 – Model 1 results by variable

Variable	Degrees of Freedom	Chi-Square	Pr > ChiSq
Main effects – significant effects			
Age at start	4	85.55	<.0001
Region	9	82.39	<.0001
Previous qualifications	5	13.97	0.04
Gender	1	3.57	0.06
Interaction effect – largest sources			
Duration match *Tranzqual	4	507.12	<.0001
Duration match * NZITO	4	172.97	<.0001
STM rate * Retail	1	109.71	<.0001
Duration match * SFRITO	4	77.42	<.0001
STM rate * Tranzqual	1	52.57	<.0001
Duration match *Agriculture	4	58.32	<.0001

4.5   Age at start

The age of the trainee when they commenced their programme was the source of variance with the largest main effect. Figure 13 shows the predicted probability of a trainee being categorised as *Non-completion type A* by age at commencement of programme. Younger trainees are more likely to fit the *non-completion type A* profile than older ones.

Figure 13 – Predicted probability of *non-completion type A* outcome by Age at start
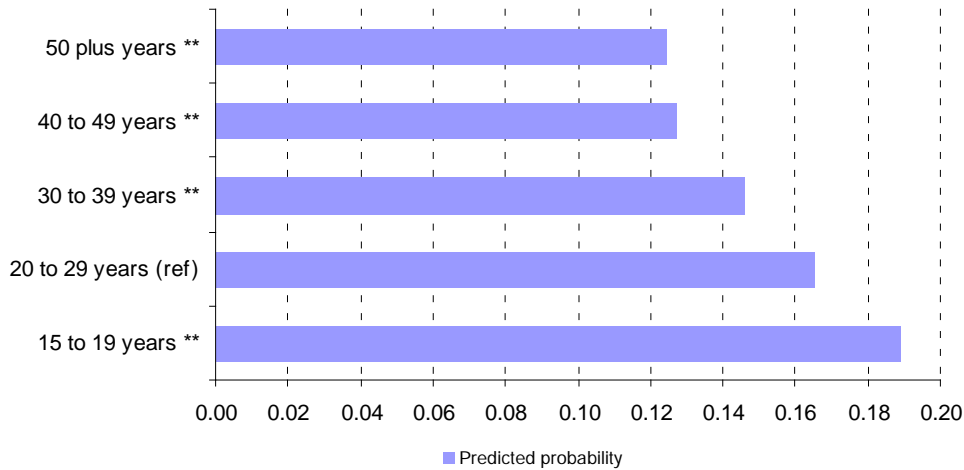
Note: ** shows statistical significance at the 5% level and * shows significance at the 10% level.

4.6   Region

The geographic location in which the trainee works was also an important main effect source of variance. Trainees in Northland, followed by those in Bay of Plenty, Auckland and Nelson / Marlborough / West Coast regions are more likely to fit the category than others.

Figure 14 – Predicted probability of *non-completion type A* outcome by region
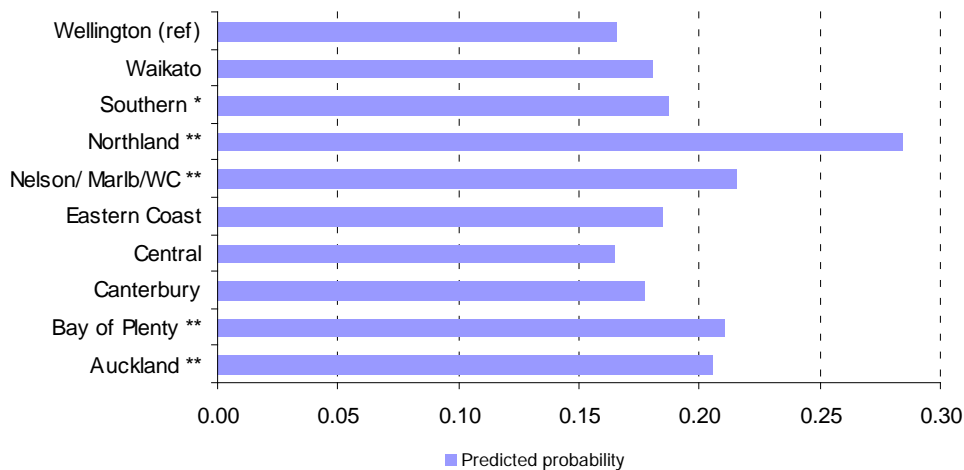
Note: ** shows statistical significance at the 5% level and * shows significance at the 10% level.

4.7 Previous qualifications

The trainee's previous qualification was also an important influence on the trainee category. Figure 15 shows the predicted probability of a trainee being categorised as *non-completion type A* by their highest qualification prior to entering industry training.

Trainees with no prior qualifications, or with post-school non-degree or degree-level qualifications are the most likely to fit into this category.[12]

Figure 15 – Predicted probability of *non-completion type A* outcome by previous qualification
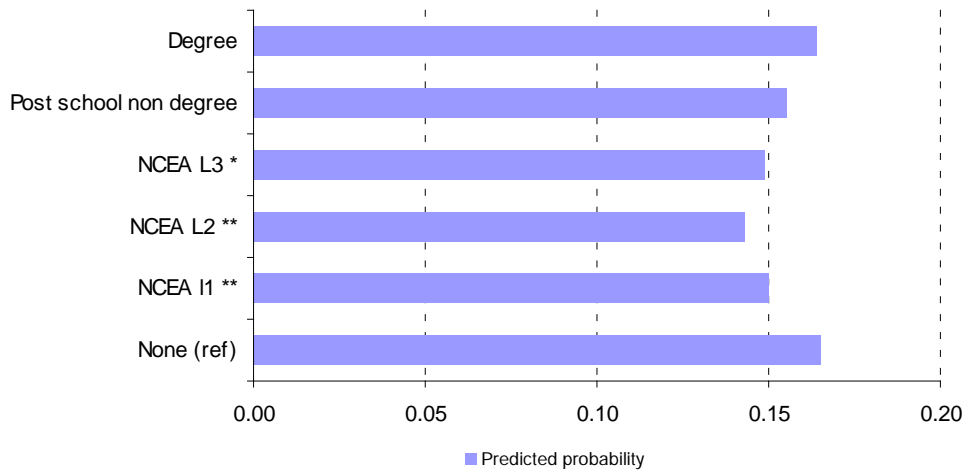
Note: ** shows statistical significance at the 5% level and * shows significance at the 10% level.

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[12] Trainees with degree-level qualifications prior to entering industry training accounted for just 11 percent of the cohort and non-completion type A category.

4.8   Duration match * ITO[13]

There was a strong interaction between the ITO and the actual duration a trainee spends in a programme compared to the nominal duration value of the programme.

Controlling for the other factors in the model, trainees in programmes administered by the horticulture ITO are the most likely to be very low credit trainees, followed by FITEC, seafood, tranzqual and NZITO.

Most ITOs peak in the low duration match category, suggesting that these trainees are in training for shorter periods of time than the nominal value for their programme.

There is little or no likelihood of being categorised a *non-completion type A* for trainees in the joinery, printing and retail meat ITOs.

Figure 16 – Predicted probability of *non-completion type A* outcome by duration match category and ITO interaction

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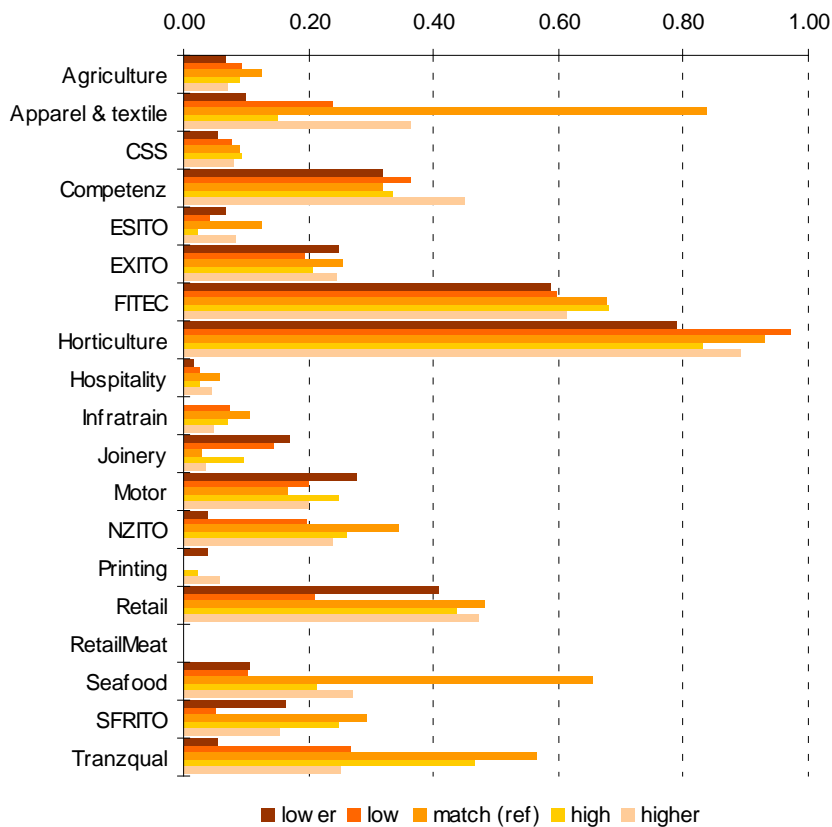
[13] The asterisk indicates that this section looks at the effect of the two variables in combination.

4.9   STM rate * ITO

There was a strong interaction between the ITO and the volume of learning. Nominal STM rates were aggregated into two possible categories for this interaction: less than 60 credits per year, or 60 or more credits per year.

As in the previous interaction, controlling for the other factors in the model, trainees in programmes administered by the Horticulture ITO are the most likely to be *non-completion type A*, followed by FITEC, Seafood, Tranzqual and NZITO.

There is a mixture of results: trainees in programmes administered by the Apparel and Textile, Horticulture, NZITO and Retail ITOs are most likely to be categorised as *non-completion type A* if their programme STM rate is fewer than 60 credits per year. For others, Agriculture, Competenz, ESITO, FITEC, Hospitality, Infratrain, Seafood, and Tranzqual ITOs, the likelihood of being a non-completion type A is greater in higher volume programmes.

Figure 17 – Predicted probability of *non-completion type A* outcome by STM rate category and ITO interaction
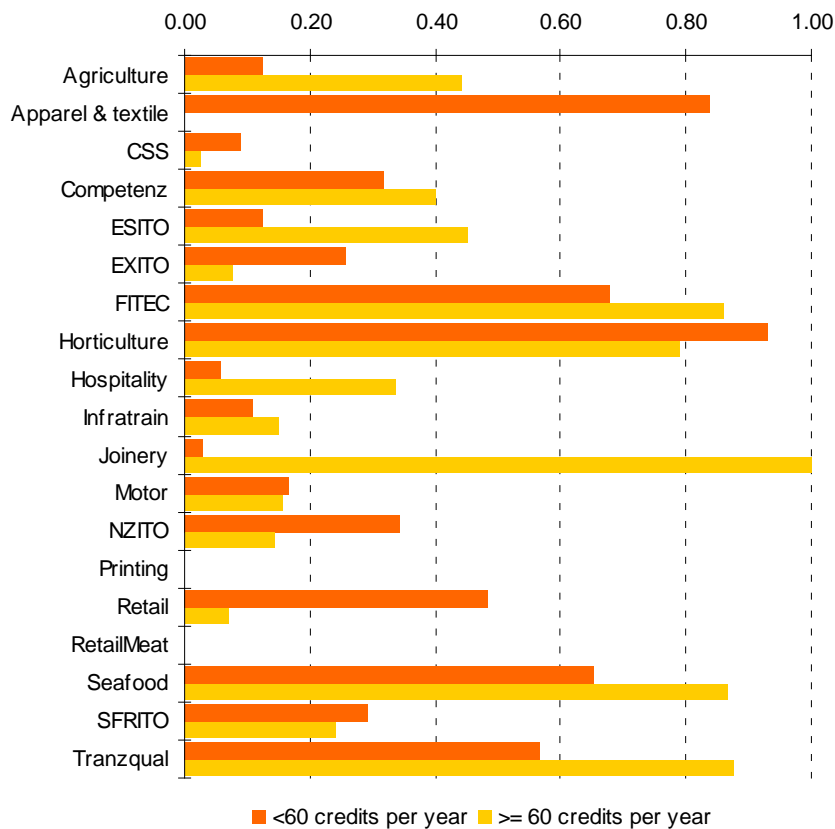
4.10   Programme level * ITO

There was a strong interaction between the ITO and the programme NZQF level. For this regression, NZQF level was aggregated into two groups: Levels 1 and 2, and Levels 3 or above.

Trainees in programmes administered by Agriculture, Competenz, FITEC, Horticulture, Hospitality, Infratrain, and Retail ITOs are most likely to be categorised as *non-completion type A* if their programme is at levels 1 and 2.

For those with Apparel and Textile, Community Support Services, EXITO, Motor, Seafood, SFRITO and Tranzqual, the likelihood of being an *non-completion type A* is greater at higher levels.

Figure 18 – Predicted probability of *non-completion type A* outcome by NZQF level category and ITO interaction
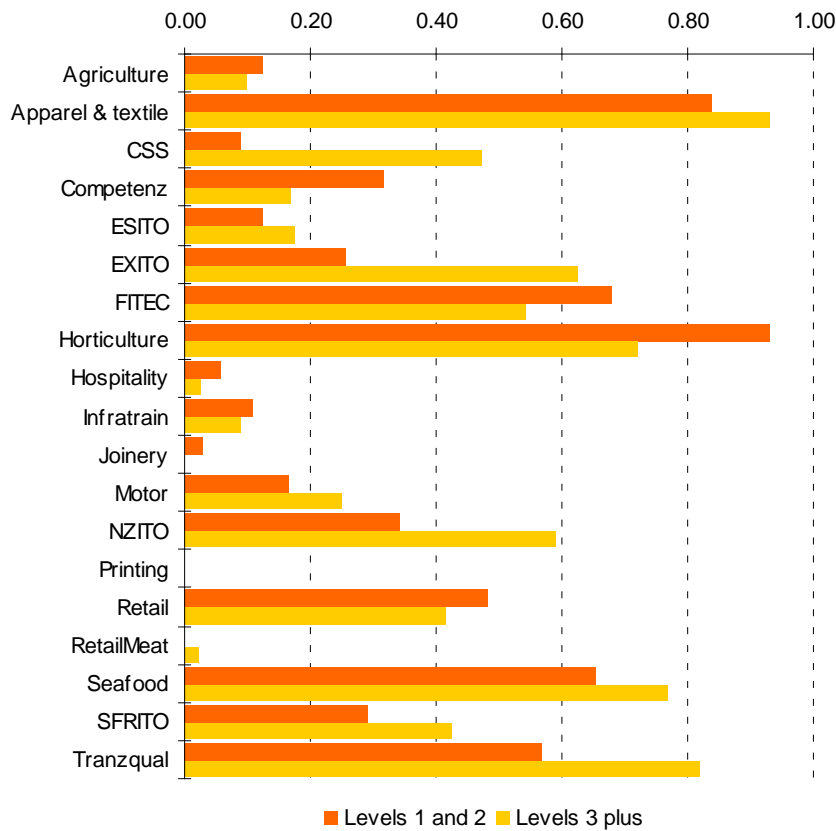
5 MODELLING NON-COMPLETION TYPE B (NO CREDIT TRAINEES)

5.1 Non-completion type B category (no credit trainees)

The second largest single group in the cohort we labelled *non-completion type B* based again on assumptions about them due to their participation profile.

This group consume variable levels of STMs, attain no credits and do not complete their programme. These outcomes are counter to government's intention that industry trainees are achieving credits that lead to national qualifications and their high STM consumption means they are expensive.

Over 5,800 cohort participants were categorised as *non-completion type B*, 24 percent of total cohort trainees and they consumed 19 percent of the total government expenditure for the cohort.

5.2 Model 2 specifications

The second model tested for factors associated with a trainee being classified as an *non-completion type B*, while controlling for each of the other variables.

The regression model produces estimates that enable comparison between each categorical independent variable with a reference category value of the variable. The reference category chosen was the same for each variable as was chosen for model 1, above. The same ITOs were excluded from the model as for model 1.

5.3   Model 2 Results

The best fitting model did not require any interaction effects.

It was able to explain 16 percent of the observed variance (adjusted R square 0.1558, max rescaled R square = 0.2287). This is a good proportion for these types of analyses, signalling reasonable predictive power.

Table 9 shows a summary of the model and the following sections show results by variables of interest. We calculated and graphed a set of predicted probabilities of a cohort trainee being classified *non-completion type B*. That is, predicted probabilities are the observed probabilities adjusted for the effects of the other variables within the regression model.

These probabilities apply to the reference category of trainees, so may seem high (or low) for some values. Where this is the case, what's important is the relative positions between the different values that make up the variable.

Table 9 – Model 2 results by variable

Response profile	Condition	Frequency	Rate
Non-completion type B	0	13,202	75%
Non-completion type B	1	4,607	25%
Variable	Degrees of Freedom	Chi-Square	Pr > ChiSq
Industry Training Organisation	18	1411.1798	<.0001
STM rate (volume of learning)	4	162.932	<.0001
Region	9	109.4527	<.0001
Duration match	4	101.6972	<.0001
Start year	1	59.7643	<.0001
Previous qualification	5	22.1037	0.0005
Ethnic group	3	8.9106	0.0305
Age at start	4	3.27	0.5137
Gender	1	0.3921	0.5312
NZQF level	1	0.2866	0.5924
R-Square	0.1558	Max-rescaled R-2	0.2287
Hosmer and Lemeshow Goodness-of-Fit Test	Chi-Square	DF	Pr > ChiSq
	11.2261	8	0.1871

5.4   Industry training organisation

The largest source of variance derived from the ITO variable. This shows that the chances of a trainee being *a no credit trainee* depends quite heavily on the industry in which the trainee works and learns. Trainees in the hospitality and printing industries have over 50 percent probability of being a non-completion type B trainee, while those in horticulture, tranzqual and SFRITO have the lowest probability of being classed so.[14]

Figure 19 – Predicted probability of *Non-completion type B* by STM rate
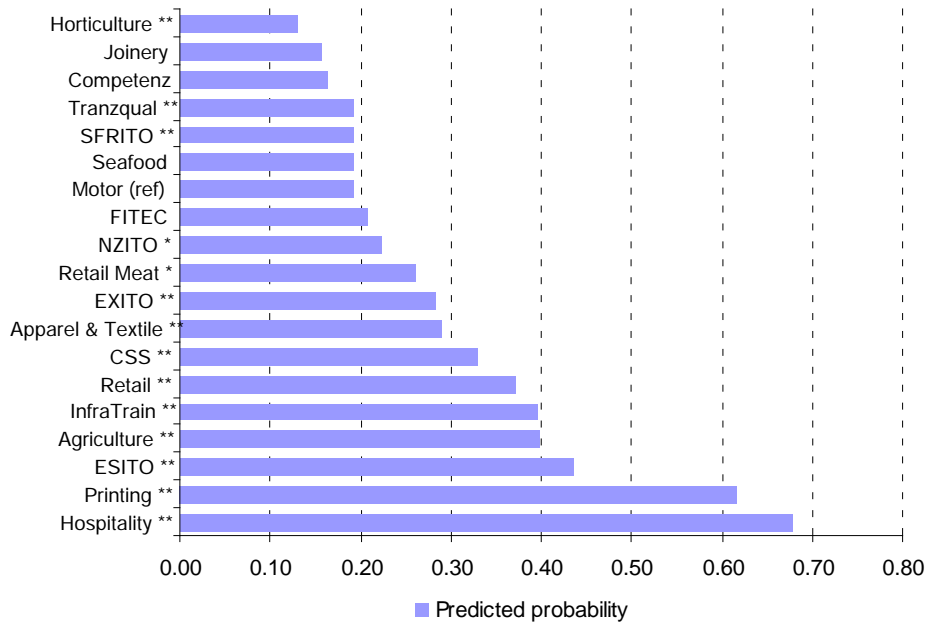
Note: ** shows statistical significance at the 5% level and * shows significance at the 10% level.

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[14] Predicted probability applies to the reference group values.

5.5 STM Rate

The STM rate of the programme was another large source of variance. Figure 20 shows the predicted probability of a trainee being categorised as *non-completion type B* by STM rate of programme.

Trainees in very high level STM rate programmes are most likely to be classified as *non-completion type B*, while those in 0.7 to 0.8 rate programmes are the least likely to be.

Figure 20 – Predicted probability of *Non-completion type B* by STM rate
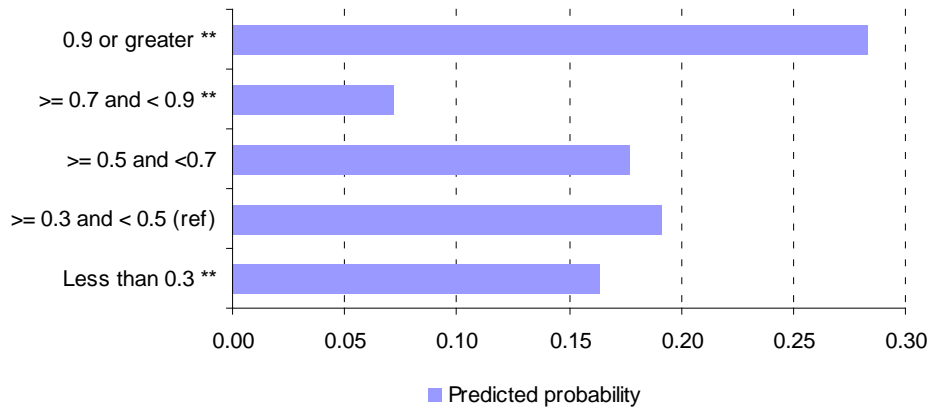
Note: ** shows statistical significance at the 5% level and * shows significance at the 10% level.

5.6 Region

The likelihood of being categorised *non-completion type B* differs by the location of employment of the trainee. Figure 21 shows the difference in predicted probability of a trainee being categorised as *non-completion type B* between territorial local authorities.

A trainee is most likely to fit the profile if they work and train in the wider Wellington and Bay of Plenty regions and is least likely to if working in the Southern, Northland, Auckland, Nelson / Marlborough / West Coast and Canterbury regions.

Figure 21 – Predicted probability of *non-completion type B* by Region
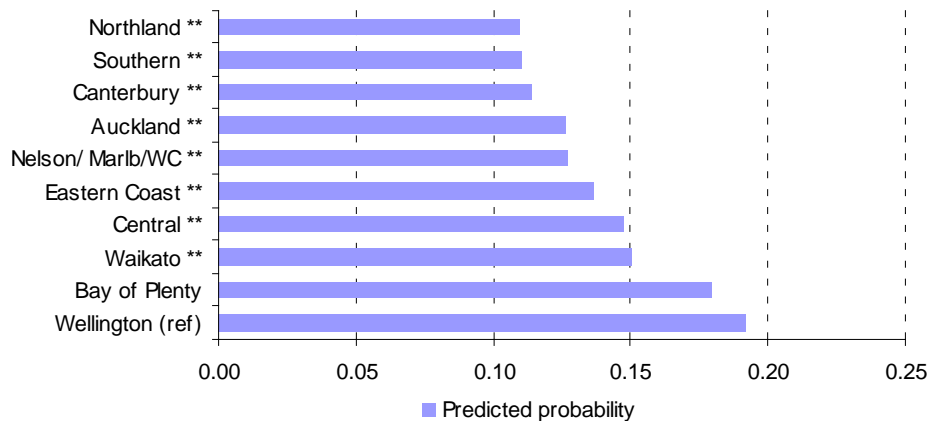
Note: ** shows statistical significance at the 5% level and * shows significance at the 10% level.

5.7 Duration match

The duration match variable indicates the difference between the actual duration on the programme and the nominal duration value for each programme (see table 7 for an explanation of the duration match categories).

Figure 22 shows the difference in predicted probability of a trainee being categorised as *non-completion type B* between duration match categories. A trainee is more likely to fit this profile if their total duration is 50 percent or less of the nominal programme duration, or in the 'high' category', and least likely to if they fall within the tolerance band of the duration match (plus or minus 20 percent of the nominal programme value).

Figure 22 – Predicted probability of *non-completion type B* by Duration Match category
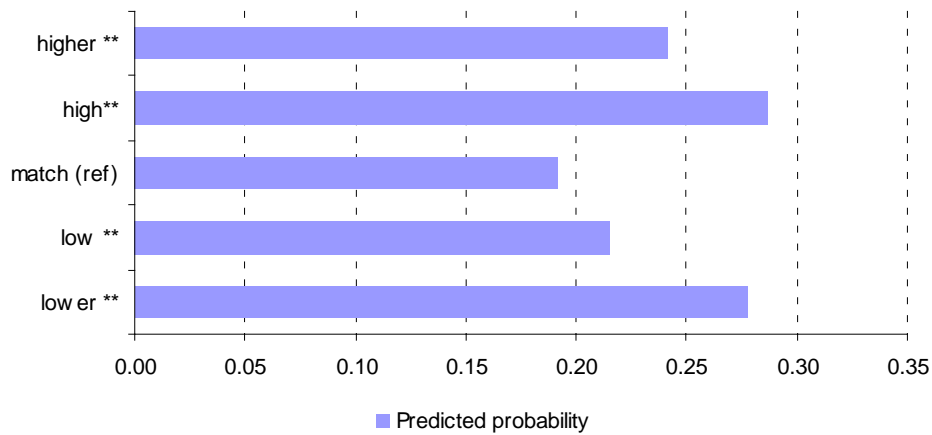
Note: ** shows statistical significance at the 5% level and * shows significance at the 10% level.

5.8 Start year

The likelihood of being categorised *non-completion type B* also differs by the start year of the trainee. A trainee who commenced training in 2006 is less likely to become a no-credit trainee than those who started in 2005.

Figure 23 – Predicted probability of *Non-completion type B* by Previous Qualification
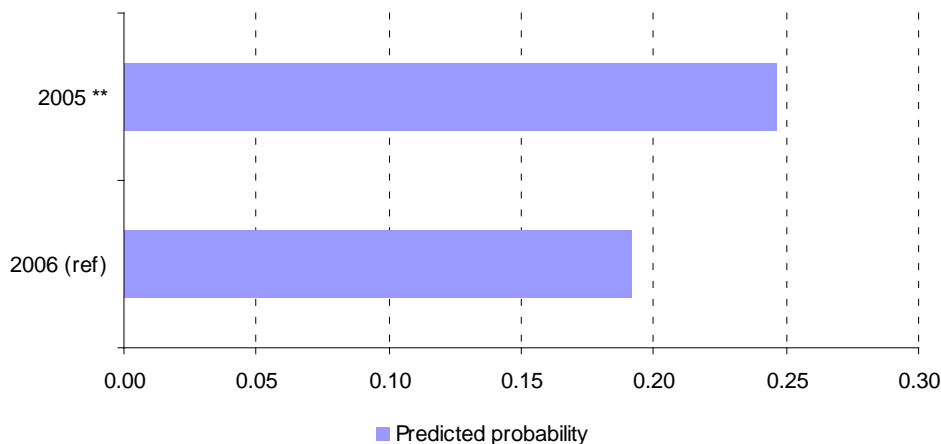
Note: ** shows statistical significance at the 5% level and * shows significance at the 10% level.

5.9 Previous qualification

The likelihood of being categorised *non-completion type B* also differs by the previous highest qualifications of the trainee. Figure 24 shows the difference in predicted probability of a trainee being categorised as *non-completion type B* between previous qualification categories.

Trainees with degree-level qualifications prior to entry are most likely to fit the profile, presumably because credit accumulation and certification is not the primary rationale for participating in industry training, which is more likely to be skills accumulation. Aside from these, a trainee with no previous qualifications is the most likely to fit the profile while those with higher level qualifications, such as NCEA level 3 are the least likely to.

Figure 24 – Predicted probability of *Non-completion type B* by Previous Qualification
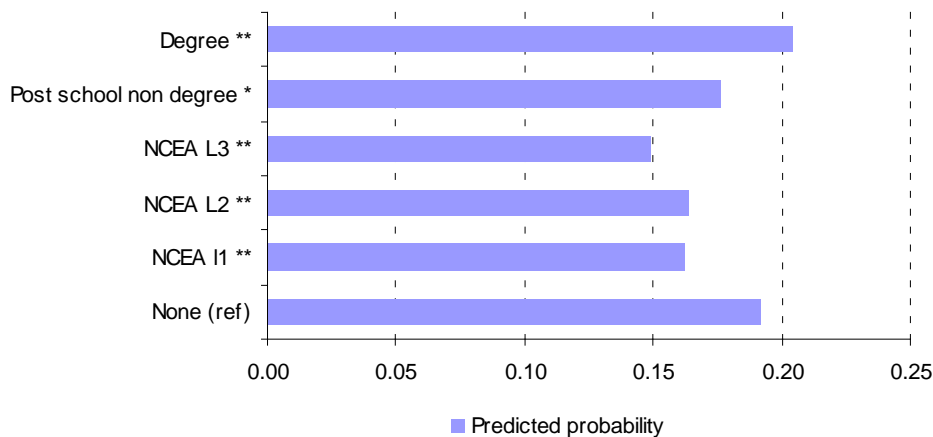
Note: ** shows statistical significance at the 5% level and * shows significance at the 10% level.

5.10 Ethnic group

The likelihood of being categorised *non-completion type B* also differs by the ethnic group of the trainee. Figure 25 shows the difference in predicted probability of a trainee being categorised as *non-completion type B* between ethnic group categories. Māori trainees are the most likely to fit the profile.

Figure 25 – Predicted probability of *Non-completion type B* by Ethnic Group
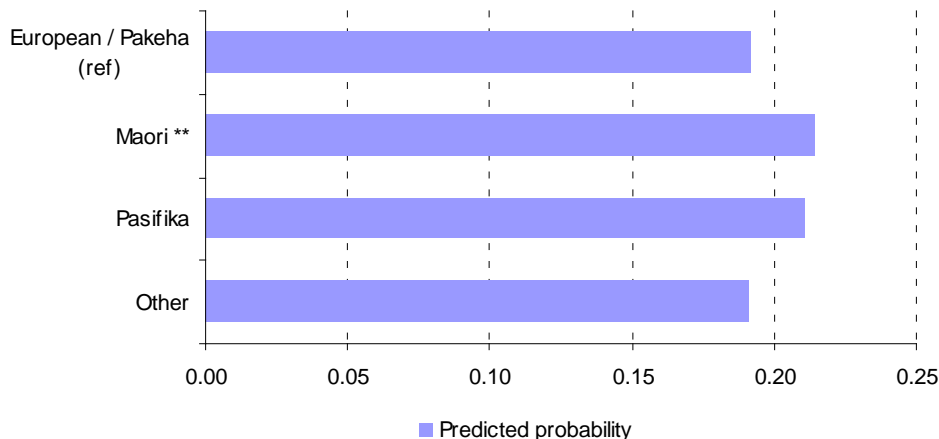
Note: ** shows statistical significance at the 5% level and * shows significance at the 10% level.

6 DISCUSSION

Non-completion is a problem in industry training. However, it is not clear what the main causes of the problem are. This study categorises industry training participants to identify the factors associated with non-completion of programmes. It identifies two primary types of non-completing trainees, the *non-completion type A (very low credit trainees)* and the *non-completion type B (no credit trainees).*

Industry training programmes are intended to lead to national qualifications. However, currently the programme completion rate is 36 percent, while the qualification attainment rate is lower at 31 percent.[15] Government contributes 70 percent of the cost of training in the expectation the society at large will benefit from training that leads to a skilled labour force and because some of the benefit of the training is enjoyed by the employer and the trainee, the remaining 30 percent is met by an employer contribution. Qualifications enable the labour market to operate efficiently, signalling the skills and abilities workers possess, which employers may then choose to purchase through employing them.

The very low credit trainee group

This study identifies that while 67 percent of cohort trainees do not formally complete their courses, 30 percent of participants, the *non-completion type A* attain some credits but less than half the credits they aim for. Many will have gained many of the skills they are formally shown as seeking but do not complete. The question is why? Is there a single discernible reason, or many?

The statistics[16] show that *non-completion type A,* the very low credit trainees, are more likely to be:

- European than the cohort as a whole (67 percent vs 63 percent for all industry trainees)
- male (67 percent vs 58 percent)
- studying at NZQF level 3 (45 percent vs 33 percent)
- in programmes with an STM rate of 0.4 or less (66 percent vs 58 percent)
- matched to programme duration (38 percent vs 29 percent)
- in programmes with 80 or more credits (65 percent vs. 47 percent).

Using statistical modelling to control for other factors, this study identifies that *Non-completion type A (very low credit trainees)*:

- are more prevalent among younger rather than older trainees
- are more prevalent for trainees located in certain geographic regions i.e. Northland, Auckland, Bay of Plenty, Nelson/Marlborough/West Coast
- occur more for trainees with no prior qualifications, or conversely (and paradoxically) a degree
- occur more for males than females
- represent high proportions of trainees with certain ITOs, most notably apparel and textile, horticulture, FITEC, Tranzqual and seafood
- occur most if total STMs consumed are high (0.5 or more)
- occur after shorter periods of training than intended overall, but this depends on the industry

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[15] This is a 7 year rate calculated for a cohort of trainees commencing for the first time in 2003. See Ministry of Education. 2009. *Achievement in Workplace Learning tables.*
[16] See appendix tables 3 and 4

- occur amongst trainees in mid-volume programmes (although this varies by industry)
- study in higher level (levels 3 or above programmes), again varying by industry.

Something is preventing this category of trainees from finishing their qualifications.

Some trainees may change or lose their jobs before completing their training. However, research conducted by the Department of Labour suggests that non-completion due to jobs ending or changing account for only a third of all non-completions.[17]

We know that many very low credit trainees have low or no previous educational qualifications. So in many cases, the failure to complete might be due to a lack of ability. But among those who already have degree level qualifications (at 11 percent, a small proportion), it could be because the trainee is aiming to acquire skills and doesn't aspire to gain a qualification.

This suggests there may be two distinct subgroups within the very low credit trainee group: those who find it difficult to get through their training because they lack learning skills or because they have low motivation or both; and those who are using the training to add to their skills but who don't intend to complete the qualification they are notionally pursuing.

Non-completion type A (very low credit trainees) do not take extra time to complete programmes, as their actual duration is often lower than the nominal programme duration, and they are often enrolled in longer programmes than the cohort as a whole. The lower than intended duration coupled with the mid-volume and higher than average level of the programme and the often lower prior achievement suggests that many of these trainees are struggling in programmes that are too difficult for them to cope with given their other commitments – leading them to abandon training.

The no credit trainee group

Perhaps of greater concern is that a further 26 percent of trainees attain no credits at all, do not complete their programme, and (in some cases) consume high levels of STMs. This group, labelled the *non-completion type B (no credit trainees)* group, consume 24 percent of the government funding for the cohort.

Statistics show that this group are more likely to be:

- non-European than the cohort (42 percent vs 37 percent for all trainees)
- female (47 percent vs 42 percent)
- studying at NZQF levels 1 or 2 (45 percent vs 35 percent)
- in programmes with an STM rate >1 (13 percent vs 6 percent)
- not matched to programme duration (81 percent vs 71 percent) and
- in programmes with the lowest number of credits i.e. 40 to 59 credits (44 percent vs 38 percent).

Using statistical modelling to control for other factors, this study identifies that *non-completion type B* category is likely to:

- occur in higher proportions in certain ITOs i.e. agriculture, electricity supply, extractive, hospitality, Infratrain, printing, retail meat
- be more prevalent in certain geographic regions more than others i.e. Wellington and Bay of Plenty

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[17] Crichton, 2009. pg. 19.

- have high incidence among trainees with no prior qualifications, but, paradoxically, also those with post school and degree level qualifications
- have higher incidence among Māori trainees
- occur at any duration of training: lower, low, high, higher, but not matched (plus or minus 20 percent of) the intended programme duration, but most likely in the lower category
- occur most often for trainees in very high volume programmes
- occur for trainees who study in lower level (levels 1 or 2) programmes.

No credit trainees are localised to certain industries and geographic locations, but are randomly distributed among age and duration match categories. They tend to be working at lower NZQF levels, and consume slightly lower STMs than they should. These factors suggest that trainees are engaging in learning but are not gaining credits either as a result of their own actions or by circumstances in their industry.

There may be a number of explanations.[18] For example, employees may wish to gain skills but are not necessarily interested in gaining qualifications or credits.[19] Contrary to this is some evidence that many trainees' prime motivation for engaging in industry training is to gain a qualification.[20]

The TEC has identified administrative problems in some industry training organisations such as some ITOs not adequately monitoring training agreements.[21] The international literature on vocational education and training shows that employers may wish employees to gain skills but are not necessarily interested in them gaining a formal qualification, or credits towards one.[22] Employers are happy to recruit for low-skilled occupations, but for medium to high skill occupations, employers see the value of training investment for firm-specific skills, and are not interested in industry or region specific skill requirements, nor the generic components required of industry–specific over enterprise–specific skills acquisition.[23] They may also not want the employee they have spent money training becoming qualified and then leaving to work for a competitor or being 'poached'.[24]

Evidence from overseas and New Zealand[25] shows that employers aim to use training to build skills needed for their firms, rather than taking an industry or a longer-term view of training. This is due to a number of barriers faced by employers, some of which are particularly acute for small to medium sized enterprises (SMEs): [26]

- a preoccupation with short-term survival issues takes priority over training which is long-term in planning requirements and benefit realisation
- skill deficiencies tend to be solved by the labour market employing previously trained staff
- training is oriented to large enterprises and their needs, yet small to medium-sized enterprises are not scaled-down versions of large ones, in terms of characteristics, organisation and daily operation
- financial costs are disproportionately higher for SMEs than for large enterprises
- perceived lack of relevance of the off-job training components of qualifications
- opportunity costs preclude release of staff for training

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[18] Aside from the administrative issues identified through the audits such as funds being claimed for learners not attending training which are likely to be relatively minor.
[19] Industry Training Federation, 2007. pg., citing a UK learner satisfaction survey that found that employees see study for qualifications as preparation for employment and qualifications are not a motivation for workplace learning. Pg. 10.
[20] i.e. See Industry Training Federation, 2007, which cites a UK Learning and Skills Council national satisfaction survey of work-based learners found that the most common factors influencing choice of programme / course included gaining qualifications, advancing skill / knowledge and job relevance. Pg. 9.
[21] TEC, 2010.
[22] See Dalziel, 2010.
[23] Ibid, pg. 29, and Billet, S. & Smith, A. 2005.
[24] Dalziel, 2010, pg. 30.
[25] See Field S., Hoeckel, K., Kis, V. and Kuczera, M. 2009. and Dalziel, 2010a.
[26] list sourced from Vaughan, 2002

- customisation of training packages, which would make training more convenient and relevant for SMEs, is expensive.

While international research suggests that employers are reluctant to invest in generic skills, because it makes their staff more attractive to competitors and creates a risk of poaching, New Zealand research found this consideration is only partly relevant.[27] According to Dalziel (2010b) employers will pay for generic training *provided those skills are relevant to their enterprise*. Rather than contrasting between generic and industry-specific skills, employers think in terms of skills that are relevant to the firm and those which aren't.

This means that some employers may only wish to purchase certain units of training from industry training qualifications, and may not wish to pay for the parts they see as less relevant to their own enterprise so they may be less interested in whole qualifications.[28]

The TEC has introduced a new set of funding rules to address some issues identified through a programme of ITO audits conducted in 2010 and 2011. These identify some of the *non-completion type B* (those for whom funding is claimed, but who attain no credits) learners as contrary to the intentions for which government provides funding. They have made the following changes:[29]

- evidence of credit achievement – funding rules are being introduced that would make trainees eligible for funding only where they have some evidence of credit achievement
- 70 credit maximum – the total funding able to be claimed for any industry trainee will be limited to 70 credits per year, operating as a 0.5833 STM rate cap for each programme
- Actual versus nominal programme durations – TEC will adjust programme durations at the end of each year where differences between average actual durations in programmes and nominal durations exist.
- TEC will publish completion rate information for each ITO annually.
- Performance-linked funding –from 2012, 5 percent of each ITO's funding will be dependent on meeting quality measures, consisting of programme completion and credit completion measures.

These changes will provide ITOs with incentives to monitor trainees more closely, and may go along way towards eliminating some of the *non-completion type B* category where there is no intention to complete a qualification.

But the effect of the new rules on casual access to the industry training fund is less direct. So in the short term, some employers may continue to claim just for the training they want for their enterprise and ignore the generic components of qualifications. If casual access to the industry training fund continues, then programme completion rates will not rise to high levels.

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[27] Dalziel, 2010b.
[28] See Green, Huntingdon and Summers, 2007.
[29] TEC, 2010.

APPENDIX

Appendix Table 1 – classification count of each trainee in cohort

Category	STM match	Credit match	Completed a programme	Did not complete a programme	Total count of trainees
	Highest	Higher		2	2
		Low		2	2
		Lower		4	4
		None attained		2	2
	High	Higher	10	20	30
		High	40	5	45
Completion type C		MATCH	386	97	483
		Low	32	93	125
Non-completion type B		Lower	19	443	462
Non-completion type B		None attained	5	441	446
Completion type B	MATCH	Higher	211	67	278
Completion type B		High	497	110	607
Completion type A / Non-completion type C		MATCH	5502	879	6381
RCC/RPL / Non-completion type C		Low	285	1047	1332
RCC/RPL / Non-completion type A		Lower	198	6557	6755
Non-completion type B		None attained	120	5140	5260
	Low	Higher	23	5	28
		High	12	12	24
RCC/RPL		MATCH	357	54	411
		Low	26	70	96
Non-completion type A		Lower	8	448	456
Non-completion type B		None attained	4	283	287
	Lowest	Higher	2		2
		High	3	1	4
		MATCH	32	7	39
		Low	3	8	11
		Lower	4	22	26
		None attained	17	13	30
	Consumed	Higher	13		13
		High	16	1	17
RCC/RPL		MATCH	319	4	323
		Low	9	1	10
		Lower	18	197	215
		None attained	11	273	284
Grand Total			8182	16308	24490

Appendix Table 2 – classification count of each trainee in cohort – percent of total trainees in cohort

Category	STM match	Credit match	Completed a programme	Did not complete a programme	Total count of trainees
	Highest	Higher	0%	0%	0%
		Low	0%	0%	0%
		Lower	0%	0%	0%
		None attained	0%	0%	0%
	High	Higher	0%	0%	0%
		High	0%	0%	0%
Completion type C		MATCH	2%	0%	2%
		Low	0%	0%	1%
Non-completion type B		Lower	0%	2%	2%
Non-completion type B		None attained	0%	2%	2%
Completion type B	MATCH	Higher	1%	0%	1%
Completion type B		High	2%	0%	2%
Completion type A / Non-completion type C		MATCH	22%	4%	26%
RCC/RPL / Non-completion type C		Low	1%	4%	5%
RCC/RPL / Non-completion type A		Lower	1%	27%	28%
Non-completion type B		None attained	0%	21%	21%
	Low	Higher	0%	0%	0%
		High	0%	0%	0%
RCC/RPL		MATCH	1%	0%	2%
		Low	0%	0%	0%
Non-completion type A		Lower	0%	2%	2%
Non-completion type B		None attained	0%	1%	1%
	Lowest	Higher	0%	0%	0%
		High	0%	0%	0%
		MATCH	0%	0%	0%
		Low	0%	0%	0%
		Lower	0%	0%	0%
		None attained	0%	0%	0%
	Consumed	Higher	0%	0%	0%
		High	0%	0%	0%
RCC/RPL		MATCH	1%	0%	1%
		Low	0%	0%	0%
		Lower	0%	1%	1%
		None attained	0%	1%	1%
Grand Total			33%	67%	100%

Appendix Table 3 – All cohorts by key variables

Variable	Value	Percent of total sub group
Ethnic group	European / Pākehā	63%
	Māori	17%
	Pasifika	7%
	Other	12%
Gender	Females	42%
	Males	58%
Age at start	15 to 19 years	18%
	20 to 29 years	31%
	30 to 39 years	23%
	40 to 49 years	18%
	50 plus years	10%
Region	Auckland	30%
	Bay of Plenty	6%
	Canterbury	13%
	Central	9%
	Eastern Coast	5%
	Nelson / Marlborough / West Coast	4%
	Northland	3%
	South Taranaki District	1%
	Southern	9%
	Waikato	9%
	Wellington	10%
Previous qualification	No previous	24%
	NCEA level 1	21%
	NCEA level 2	15%
	NCEA level 3	10%
	post school non degree	19%
	Degree	11%
Programme level	1 and 2	35%
	3	33%
	4 plus	33%
Programme credits	40 to 59 credits	38%
	60 to 79 credits	16%
	80 to 99 credits	20%
	100 to 119 credits	2%
	120 to 199 credits	12%
	200 or more credits	12%

Continued over

STM rate	0.1 to 0.2	4%
	0.3 to 0.4	54%
	0.5 to 0.6	26%
	0.7 to 0.8	7%
	0.9 to 1	1%
	Greater than 1	6%
Duration Match	Higher	17%
	High	10%
	MATCH	29%
	Low	20%
	Lower	24%
Start year	2005	48%
	2006	52%
ITO	Agriculture	5%
	Apparel and textile	>1%
	ATTO	3%
	Boating	>1%
	Building and construction	2%
	Building service contractors	>1%
	Community support services	7%
	Competenz	8%
	Creative trades	>1%
	Electricity supply	2%
	Equine	>1%
	ETITO	8%
	Extractive	1%
	FITEC	3%
	Hairdressing	>1%
	Horticulture	3%
	Hospitality	1%
	InfraTrain	8%
	Joinery	2%
	NZITO	>1%
	Opportunity	>1%
	Pharmacy	6%
	Plastics and materials processing	>1%
	Plumbers gasfitters drainlayers	>1%
	Printing	>1%
	Public sector	1%

Retail	>1%
Retail meat	7%
Seafood	7%
SFRITO	1%
Social services	1%
Sports turf	4%
Tranzqual	1%
Motor	>1%
Fire and rescue	13%

Appendix Table 4 - 'Non-completion type A' by key variables

Variable	Value	Percent of total sub group
Ethnic group	European / Pākehā	67%
	Māori	16%
	Pasifika	7%
	Other	10%
Gender	Females	33%
	Males	67%
Age at start	15 to 19 years	15%
	20 to 29 years	31%
	30 to 39 years	25%
	40 to 49 years	18%
	50 plus years	10%
Region	Auckland	32%
	Bay of Plenty	6%
	Canterbury	15%
	Central	8%
	Eastern Coast	4%
	Nelson / Marlborough / West Coast	6%
	Northland	3%
	South Taranaki District	0%
	Southern	7%
	Waikato	8%
	Wellington	9%
Previous qualification	No previous	28%
	NCEA level 1	21%
	NCEA level 2	14%
	NCEA level 3	9%
	post school non degree	19%
	Degree	11%
Programme level	1 and 2	22%
	3	45%
	4 plus	33%
Programme credits	40 to 59 credits	20%
	60 to 79 credits	16%
	80 to 99 credits	31%
	100 to 119 credits	2%
	120 to 199 credits	19%
	200 or more credits	13%

STM rate	0.1 to 0.2	4%
	0.3 to 0.4	62%
	0.5 to 0.6	25%
	0.7 to 0.8	6%
	0.9 or greater	3%
Duration Match	Higher	16%
	High	12%
	MATCH	38%
	Low	14%
	Lower	20%
Start year	2005	50%
	2006	50%
ITO	Agriculture	5%
	Apparel and textile	>1%
	ATTO	2%
	Boating	>1%
	Building and construction	3%
	Building service contractors	>1%
	Community support services	6%
	Competenz	9%
	Creative trades	>1%
	Electricity supply	2%
	Equine	>1%
	ETITO	12%
	Extractive	2%
	FITEC	5%
	Hairdressing	4%
	Horticulture	1%
	Hospitality	1%
	InfraTrain	>1%
	Joinery	>1%
	NZITO	4%
	Opportunity	>1%
	Pharmacy	>1%
	Plastics and materials processing	>1%
	Plumbers gasfitters drainlayers	1%
	Printing	>1%
	Public sector	2%

Continued over

	Retail	2%
	Retail meat	>1%
	Seafood	1%
	SFRITO	3%
	Social services	1%
	Sports turf	>1%
	Tranzqual	28%
	Motor	3%
	Fire and rescue	>1%

Appendix Table 5 – 'Non-completion type B' by key variables

Variable	Value	Percent of total sub group
Ethnic group	European / Pākehā	58%
	Māori	19%
	Pasifika	8%
	Other	15%
Gender	Females	47%
	Males	53%
Age at start	15 to 19 years	21%
	20 to 29 years	32%
	30 to 39 years	21%
	40 to 49 years	16%
	50 plus years	10%
Region	Auckland	30%
	Bay of Plenty	8%
	Canterbury	10%
	Central	9%
	Eastern Coast	5%
	Nelson / Marlborough / West Coast	4%
	Northland	3%
	South Taranaki District	1%
	Southern	7%
	Waikato	10%
	Wellington	13%
Previous qualification	No previous	21%
	NCEA level 1	21%
	NCEA level 2	16%
	NCEA level 3	11%
	post school non degree	20%
	Degree	11%
Programme level	1 and 2	45%
	3	24%
	4 plus	31%
Programme credits	40 to 59 credits	48%
	60 to 79 credits	18%
	80 to 99 credits	13%
	100 to 119 credits	2%
	120 to 199 credits	9%
	200 or more credits	9%

Continued over

STM rate	0.1 to 0.2	3%
	0.3 to 0.4	53%
	0.5 to 0.6	28%
	0.7 to 0.8	3%
	0.9 or greater	12%
Duration Match	Higher	19%
	High	10%
	MATCH	19%
	Low	23%
	Lower	29%
Start year	2005	48%
	2006	52%
ITO	Agriculture	7%
	Apparel and textile	>1%
	ATTO	2%
	Boating	>1%
	Building and construction	3%
	Building service contractors	>1%
	Community support services	9%
	Competenz	5%
	Creative trades	>1%
	Electricity supply	3%
	Equine	>1%
	ETITO	4%
	Extractive	2%
	FITEC	2%
	Hairdressing	>1%
	Horticulture	1%
	Hospitality	1%
	InfraTrain	19%
	Joinery	2%
	NZITO	>1%
	Opportunity	>1%
	Pharmacy	6%
	Plastics and materials processing	>1%
	Plumbers gasfitters drainlayers	>1%
	Printing	>1%
	Public sector	8%

Continued over

	Retail	10%
	Retail meat	1%
	Seafood	>1%
	SFRITO	6%
	Social services	2%
	Sports turf	>1%
	Tranzqual	3%
	Motor	2%
	Fire and rescue	>1%

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