

Post-school choices – Māori students

This fact sheet looks at the transition of young Māori from school to tertiary education. It supplements a recent Ministry of Education report on the post-school choices¹ of school leavers. That report focused on answering the question of how well academic achievement at secondary school predicts the tertiary education choices of school leavers. This study builds on the statistical model used in *Post-school choices* but the focus narrows to look at Māori by providing additional information about the post-school choices of Māori school leavers.

The main findings of *Post-school choices* included:

- Higher achievement in the National Certificate of Educational Achievement (NCEA) is associated with higher participation in tertiary education.
- Higher achievement in NCEA is strongly associated with participation in bachelors-level study but less so with industry training.
- The ethnicity of school leavers was associated with their post-school choice, although the magnitude of this association was relatively small.

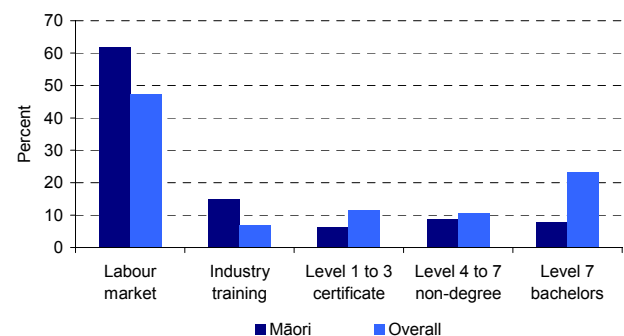
Given the last of these findings, it is likely that the set of factors associated with the post-school choice of Māori school leavers will differ from those of non-Māori school leavers.

Figure 1 shows that the post-school choices of Māori school leavers differed from the overall cohort of school leavers. The proportion of Māori undertaking bachelors-level study was only half the proportion of all school leavers. Māori transitioned into industry training at twice the rate of all school leavers, while a significantly higher proportion went directly into the labour market. Eight percent of Māori school leavers participated in bachelors-level study directly after leaving school in 2004, compared with 15 percent in industry training and 62 percent in the labour market.

As in *Post-school choices* a statistical model using generalised multinomial logistic regression was used to analyse the association between participation in various types of tertiary education and the study variables. The study was based on the Ministry of Education/NZQA schools to tertiary longitudinal unit-record level dataset. The underlying assumptions of this study and the description of variables are similar to those discussed in *Post-school choices*.

The analytical approach used in this study was slightly different to that used in *Post-school choices*. The variable for the ethnic group of a school leaver (ETHNIC) was removed from the model because that was the variable used to define the specific group analysed in this study. Consequently, the interaction variables including ETHNIC were also removed.

Figure 1: Post-school choices of 2004 school leavers



The model used in this study explained about 31 percent of the variability in the dependent variable – the post-school choice of Māori school leavers. This was considerably less than the explanatory power of the model used in *Post-school choices* for the full cohort of school leavers (48 percent). Factors outside of the scope of this analysis were therefore more strongly associated with the post-school choices of Māori school leavers than the overall cohort of school leavers. It is possible that family background² is more strongly associated with the

¹ Ussher, S. (2008) *Post-school choices: how well does academic achievement predict the tertiary education choices of school leavers?* Wellington: Ministry of Education.

² This could include factors such as family income, parent's education or number of siblings.

post-school choices of Māori school leavers than it is for non-Māori school leavers.

In contrast to the model of all school leavers presented in *Post-school choices*, the variables measuring whether a school leaver went to a state³ or private school and the regional unemployment rate were not significantly associated with the post-school choice of Māori school leavers.

In addition, two interaction variables in the model presented in *Post-school choices* were not statistically significant for Māori school leavers. The relationship between school decile and highest school qualification was not statistically significant for Māori school leavers. This means that highest school qualification was associated with the post-school choices of Māori school leavers equally across all school deciles. The relationship between peer influence and school decile was also not statistically significant for Māori school leavers. U.S. research⁴ has shown that the influence of peers in post-school choices is stronger for low socioeconomic status youth, so it interesting that this was not the case for Māori.

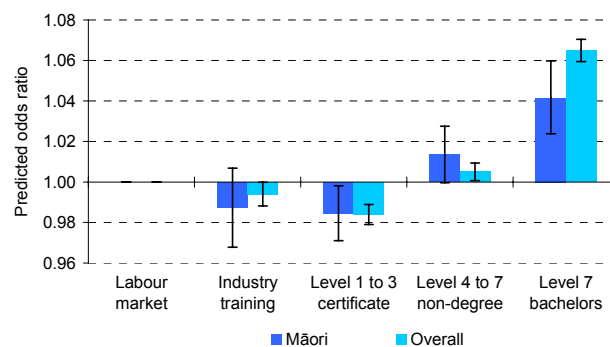
The association between highest school qualification and the post-school choice of Māori school leavers was very similar to that for all school leavers, presented in *Post-school choices*. That is to say that this association differed very little for Māori school leavers from all school leavers. The one difference for Māori school leavers was that attaining a level 2 NCEA qualification over a level 1 NCEA qualification had a greater positive association with participation in industry training as well as level 4 to 7 non-degree study at a tertiary education provider rather than the labour market. This could be interpreted to mean that attaining a level 2 NCEA qualification is more important for Māori school leavers with aspirations of participating in these types of tertiary education.

Figure 2 shows that attaining better results in NCEA level 1 standards – as measured by the expected percentile⁵ – was positively associated with Māori school leavers participating in bachelors-level study rather than the labour market. This is a similar result to that for all school leavers, presented in *Post-school choices*. However, this association is weaker for Māori school leavers, indicating that attaining better results in level 1 NCEA standards improved the likelihood of Māori school leavers participating in

bachelors-level study less than the overall cohort of school leavers.

Attaining better results in level 1 NCEA standards was not significantly associated with participation in level 4 to 7 non-degree study at a tertiary education provider rather than entry into the labour market for Māori school leavers. This was in contrast to the results presented in *Post-school choices*.

Figure 2: Predicted odds ratios⁶ of post-school choice by expected percentile



Notes:

1. The reference category for the dependent variable of post-school choice was the labour market.
2. Error bars represent the 95% confidence interval of the predicted odds ratios. If an error bar does not overlap with a point estimate we are 95% confident that there was a difference in the predicted odds ratios.
3. The predicted odds ratios represent the change in odds for each 1 percent increase in the expected percentile.

As was also the case in the model of the whole cohort of school leavers presented in *Post-school choices*, participation in industry training rather than the labour market was not strongly associated with attaining better results in level 1 NCEA standards. However, while *Post-school choices* found a significant association between the expected percentile and participation in industry training rather than level 1 to 3 certificate study at a tertiary education provider, this association was not significant for Māori school leavers.

Two interaction variables involving expected percentile were statistically significant in the model. The expected percentile was associated with post-school choices differently for Māori school leavers with different levels of NCEA qualifications. This result was very similar to that for all school leavers presented in *Post-school choices*.

The relationship between the expected percentile and gender was not significant in the *Post-school choice* model, but was significant for Māori school leavers. Figure 3 shows how the association between the expected percentile and participation in bachelors-level study rather than the labour market

³ State integrated schools were included in the 'state' category.

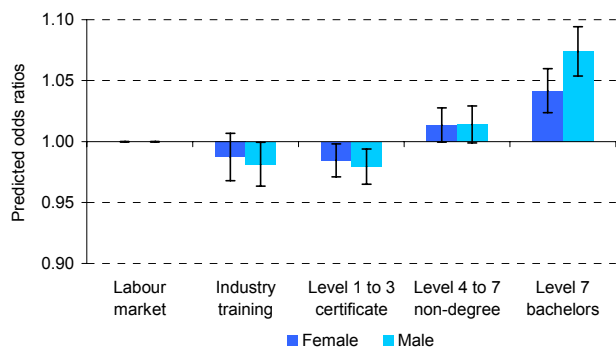
⁴ See for example Sokatch, A. (2006) Peer influences on the college-going decisions of low socioeconomic status urban youth, *Education and Urban Society*, Vol. 39, No. 1, pp. 128-146.

⁵ For a full explanation of the expected percentile refer to Appendix C of Ussher (2008).

⁶ For a full explanation of predicted odds ratios refer to Ussher (2008).

differs for female and male Māori school leavers. Attainment of better results in level 1 NCEA standards increased the likelihood of Māori males participating in bachelors-level study at a greater rate than it increased the likelihood of Māori females participating. This suggests that participation in bachelors-level study for Māori males was more sensitive to attaining good results in NCEA standards than it was for Māori females.

Figure 3: Predicted odds ratios of the post-school choice of Māori by expected percentile and gender



- Notes:
1. The reference category for the dependent variable of post-school choice was the labour market.
 2. Error bars represent the 95% confidence interval of the predicted odds ratios. If an error bar does not overlap with a point estimate we are 95% confident that there was a difference in the predicted odds ratios.
 3. The predicted odds ratios represent the change in odds for each 1 percent increase in the expected percentile.

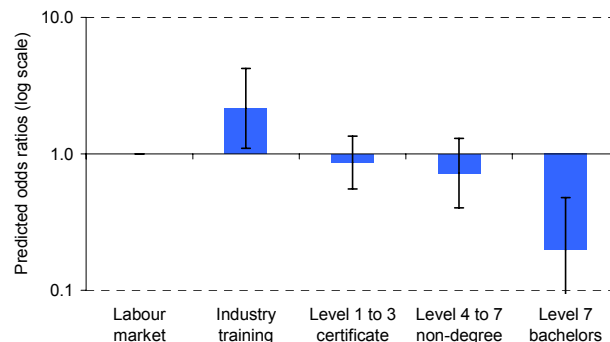
Post-school choices found that, for all school leavers, gender was strongly associated with participation in industry training rather than the labour market, but not with any other post-school choices. Therefore there was no significant difference in participation in bachelors-level study rather than the labour market for female and male school leavers. However, Figure 4 shows that Māori male school leavers were less likely than Māori female to participate in bachelors-level study rather than the labour market. Māori male school leavers were also more likely than Māori female to participate in industry training rather than enter the labour market.

The association between the decile of the school that a school leaver last attended and post-school choice differed for Māori school leavers from that for all school leavers presented in *Post-school choices*. In contrast to the results of *Post-school choices*, Figure 5 shows that Māori school leavers from low decile schools were no less likely than those from higher decile schools to participate in industry training rather than the labour market.

Post-school choices found that the likelihood of a school leaver participating in bachelors-level study

rather than the labour market was not significantly associated with the decile of the school they last attended. However this study found that Māori students from low decile schools were more likely than students from medium decile schools to participate in bachelors-level study rather than the labour market.

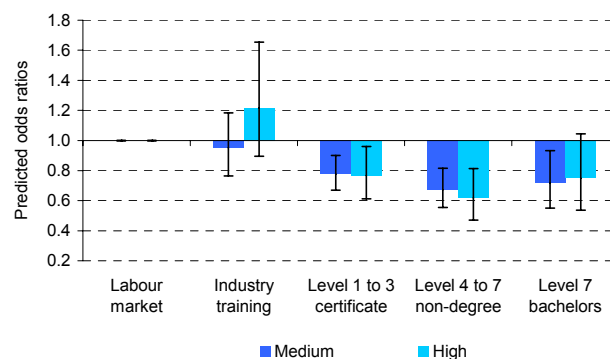
Figure 4: Predicted odds ratios of post-school choice for Māori male school leavers compared to Māori female school leavers



- Notes:
1. The reference category for the dependent variable of post-school choice was the labour market.
 2. The reference category for gender was female.
 3. Error bars represent the 95% confidence interval of the predicted odds ratios. If an error bar does not overlap with a point estimate we are 95% confident that there was a difference in the predicted odds ratios.

It is interesting that while Figure 5 shows that there was a significant difference in the likelihood of participating in tertiary education across school deciles, Māori students from low decile schools were more likely to participate in tertiary education than those from higher decile schools holding all other factors constant. There were no significant differences between Māori students from medium decile schools and those from high decile schools.

Figure 5: Predicted odds ratios of post-school choice for Māori school leavers from medium and high decile schools compared with Māori school leavers from low decile schools



- Notes:
1. The reference category for the dependent variable of post-school choice was the labour market.
 2. The reference category for decile was low decile schools.
 3. Error bars represent the 95% confidence interval of the predicted odds ratios. If an error bar does not overlap with a point estimate we are 95% confident that there was a difference in the predicted odds ratios.

The interaction variable between the influence of peers and the roll size of the secondary school a school leaver last attended was significant in the model. The influence of peers in the post-school choice of Māori students was stronger for students who came from schools with smaller rolls. This result makes sense as students in smaller schools are more likely to have closer contact with all their year level peers and therefore be influenced by them. This interaction variable was not significant for all school leavers in the model presented in *Post-school choices* and is therefore unique to Māori students.

Other results from this study were very similar to those found in *Post-school choices* for all school leavers. The influence of peers' post-school choices had a strong association with the post-school choices of Māori school leavers. As *Post-school choices* found, generally, the influence of peers was stronger for Māori school leavers participating in bachelors-level study than it was for other types of tertiary education.

Māori school leavers from areas remote from tertiary education provision were not disadvantaged when it came to participating in tertiary education.

Table 1: Generalised multinomial logistic regression results

Explanatory variables	Categories	Post-school choices (reference = labour market)			
		Odds ratios (likelihood of participating in indicated type of tertiary education over the labour market) ¹			
		Industry training	Level 1 to 3 certificate	Level 4 to 7 non-degree	Level 7 bachelors
EXP ²		0.987	0.985*	1.014	1.042**
HSQ ³	None	0.074**	0.200**	0.676	0.001**
	Level 1	0.180**	0.372*	0.373	0.759
	Level 2		REFERENCE CATEGORY		
	Level 3	1.907	0.432	12.287**	33.539**
GENDER	Female		REFERENCE CATEGORY		
	Male	2.153*	0.864	0.724	0.198**
DECILE ⁴	Low		REFERENCE CATEGORY		
	Medium	0.952	0.776**	0.672**	0.716*
	High	1.217	0.767*	0.618**	0.748**
ROLL ⁵		1.073*	1.096**	1.006	1.138*
PEER_INF ⁶		1.025**	1.036**	1.040**	1.087**
ACCESS ⁷		0.993**	1.000	1.000	1.001
PEER_DEV ⁸		1.009	1.016**	1.008	1.002
EXP x HSQ	EXP x None	1.032**	1.027**	0.994	0.975
	EXP x Level 1	1.031*	1.022*	1.015	0.982
	EXP x Level 3	0.995	0.998	0.965**	0.991
PEER_INF x HSQ	PEER_INF x None	1.023**	1.015*	0.996	1.106**
	PEER_INF x Level 1	1.008	1.003	0.999	0.990
	PEER_INF x Level 3	0.984	1.006	0.984	0.976**
PEER_INF x ROLL		0.999*	0.998**	1.000	0.998*
EXP x GENDER	EXP x Male	0.994	0.995	1.000	1.031**
Log Likelihood	15,832				
Pseudo R ²	0.313				
N	7,809				

Notes:

1. *, ** represents significant at the 5 percent and 1 percent levels of significance, respectively.
2. The expected percentile was represented in the model by the variable EXP.
3. The highest school qualification that a school leaver has attained was represented in the model by the variable HSQ
4. The decile of a school leaver's last secondary school was represented in the model by the variable DECILE.
5. The roll size of the secondary school a school leaver last attended was represented in the model by the variable ROLL.
6. The proportion of school leavers from a student's school and year level that participated in tertiary education was represented in the model by the variable PEER_INF.
7. The relative geographic access a school leaver had to tertiary education provision from the secondary school they last attended was represented in the model by the variable ACCESS.
8. The proportion of students from a school leaver's secondary school and year level that were either stood-down or suspended in 2004 was represented in the model by the variable PEER_DEV.