

Establishing Baseline Data: Using Institutional Data to Learn More About Completion Factors at One New Zealand University

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Abstract

This paper discusses demographic and study-related factors that contribute to completion of degrees in one university in New Zealand. Although much can be learned from nationwide and cross-institutional studies, it is important that each institution comes to an understanding of its own particular student population and the factors that impact on retention and completion in its own context. Institutions have different student populations and different contextual factors that impact on completion rates. Understanding institutional data will enable strategies and interventions that are relevant to its particular context. In this initial project we sought to replicate, as closely as possible, a nationwide study with a similar focus. Using a similar statistical approach enabled us to compare the results. The main questions the authors sought to answer, therefore, were: (1) do completion rates within one institution differ between years; (2) what are the differences in completion rates and factors between the overall national data and the single institution data, and what can be learned from that for possible interventions? The results suggest that although there are similarities between the two studies, there were significant differences as well. These differences could be used to inform institutional interventions that would enhance completion rates.

Keywords: Completion, Retention, Institutional Data, Improvement

Retention, or completion of students, is one of the more studied areas related to university students. Reasons for this include ‘wastage’ (of human potential and financial cost), concerns about the reputation of an institution and of not meeting broader educational responsibilities. McInnis, Hartley et al. (2000) assert that a major impetus for retention studies is the changing tertiary environment, especially increased accountability and pressure on resources. In some countries, such as Australia, government funding is now more closely

linked to progression rates (Dancer & Fiebig, 2000). Similar incentives may also come into place in New Zealand (Cullen, 2006).

In considering specific factors that impact on completion or retention, there are vast arrays that come into play. In surveying the various reports on retention in Australia, McInnis, James and Hartley (2000) identified some key university-related factors (as opposed to personal factors) for non-completion; these included course content, workload, teaching methods, student discontent with courses and courses not meeting students' expectations. What is problematic, they say, is the relative influence of these factors. McInnis, Hartley et al. (2000) state that it is abundantly clear that the students' experience, particularly in the first year of study, determines whether they will drop out of their courses.

Within the body of work on academic retention, Vincente Tinto has long been considered the main theoretical developer of multivariate models. Braxton et al. (2000) mention that he is cited more than 400 times and that 170 dissertations pertain to Tinto's theory. His 1975 work articulated a model of student retention, or student drop out, which posited a complex interaction between various groups of factors. At the core of his model is the idea that a first-year student has to go through a transition, akin to the anthropological idea or concept of a 'rite of passage'. Tinto argues that the successful interplay of various personal and educational attributes, social background, and the manner of integration into a university's social and academic life determine whether a student persists or drops out (McInnis, 2000).

However, Tinto's model is not without critics. Tinto's model has been criticised for lacking conceptual clarity (Braxton, Milem, & Sullivan, 2000; Cooper, 2002; Draper, 2002) and other shortcomings in understanding the role of developmental factors (Witte, Forbes, & Witte, 2002), appreciation of cultural factors (Tanaka, 2002), and for too little attention to institutional factors (Cooper, 2002). McInnis, Hartley et al. (2000), however, point out that in later articles (1993 and 1997) Tinto has started to devote more attention to institutional factors, such as the classroom environment and educational process. Researching retention or attrition, then, is not entirely self-explanatory, nor without conceptual difficulties.

Calculating accurate attrition (or non-completion or drop-out figures) then is problematic, especially if it is not known whether students are taking a break, have transferred within the institution or to another institution (Hall, 2001; McInnis, 2000; Tresman, 2002). Different countries and institutions use different calculation methods. Hall (2001) asserts that the generally poor quality of data that is available is a recurrent problem in most studies on retention. Equally problematic is the relative importance of the multitude of factors. There has been an increasing recognition that in considering retention the systemic nature of the issues needs to be recognised (see e.g., Aitchison, 2000; Evans & Farley, 1998; Krause, Hartley, James, & McInnis, 2005; Lawrence, 2000, 2002; McInnis, James et al., 2000; McInnis, James, & McNaught, 1995; Percy & Skillen, 2000).

In 2004 the first comprehensive cohort-based study on retention, completion and progression was published by the New Zealand Ministry of Education (Scott, 2004, 2005). Scott defined retention as: 'the percentage of a cohort of students who are still enrolled or have successfully completed a qualification. Attrition: the percentage of a cohort of students who have left study without completing a qualification. Attrition plus Retention equals 100%' (Scott, 2004, p. 8). Completion was defined as 'the percentage of a cohort of students who have successfully completed a qualification' (Scott, 2004, p. 8). The data used came

from the Single Data Return survey of information collected from New Zealand tertiary education providers. In a follow-up study Scott and Smart (2005) specifically focused on factors that make a difference in obtaining a bachelor's degree at a New Zealand tertiary institution. In 2007, they undertook a review of the data matching methodology used to establish retention and completion figures for this and other studies (Scott, 2007). This led to an adjustment of some figures. As the completion factor study has not been repeated yet with the new database, references to completion figures in this research article will be to the 2005 study (Scott & Smart, 2005).

Comparison with overseas universities is problematic as definitions differ, and calculations are not performed in similar ways. Furthermore, New Zealand universities provide access to all students who have gained the National Certificate of Educational Achievement (NCEA) level 3 credits¹ or comparable high school qualifications, and to all domestic students over 20 years of age, irrespective of high school qualifications. This means that New Zealand universities have relatively more students who may not be as well prepared for tertiary studies. A nationwide study in Australia (Martin, Maclachlan, & Karmel, 2001) found that 60% of students who started a degree in 1992 completed their degree at the same university by 1997.

Although much can be learned from nationwide and cross-institutional studies, it is equally important that each institution comes to an understanding of its own particular student population and the factors that impact on retention and completion in its own context (McInnis & James, 2004), this includes the particular educational context in a country. Institutions have different student populations and different contextual factors that impact on completion rates. Understanding institutional data will enable strategies and interventions that are relevant to its particular context. However, for institutional data to be useful it is also important to know whether institutional completion factors differ from year to year, or whether similar patterns are repeated. Furthermore, it was considered it important to carry out a completion rates study in one single institution as there was no other study (apart from the one mentioned above) yet in New Zealand.

The main questions the authors sought to answer, therefore, were: (1) do completion rates within one institution differ between years; (2) what are the differences in completion rates and factors between the overall national data and the single institution data, and what can be learned from that for possible interventions?

Data and methods

The study reported in this article involved 9396 students, of which 2996 enrolled in year 2000, 3254 in year 2001 and 3146 in year 2002 respectively in one medium-size university in New Zealand with around 18,000 enrolled students. The data was extracted from historical student administration data; identifying student details were not included.

Six-year completion rates were modelled for students who started their bachelor degree in each of the three years and completed any of their (potentially multiple) degrees by the end of 2005, 2006 and 2007 respectively. The Ministry of Education project (Scott & Smart, 2005) equally used a six-year completion rate model.

¹ NCEA was introduced as a new 3-level high school qualification in 2002. In 2004 the first students graduated from high school with NCEA Level 3, which is required for entrance to university.

Completion rates for the national data and the single institution data was not calculated in an identical way. The national data took into account students moving across institutions. In other words, students may have left one institution and completed their degree in another. In the single institution study, students were considered as having not completed if they did not complete within six years in that particular institution. As this different calculation does not favour the institution in this study (i.e., the actual completion rate would have been lower if transfer information had been available), comparison was considered justifiable.

The analysis was carried out using binary logistic regression, which estimated the probability of a student completing the degree. Next, the Hosmer and Lemeshow goodness of fit test was applied to assess the adequacy of the models (i.e., how well the model fits the data). The dependent variable used was student completion with a binary value: either the students had completed their degree or not. The factors used in this analysis were treated as independent variables.

The factors used in this project sought to replicate, as much as possible, the factors in the Ministry of Education study (Scott & Smart, 2005) so that comparisons would be possible. Similar to the national study, the modelled factors were those of demographics and study-related characteristics. These factors include age, gender, ethnicity, nationality, disability, qualification, prior activity, study load (part-time, full-time), study subjects, accommodation and decile rating. The distribution of the different factors for the combined cohorts is shown in Appendix 1. Two factors that need to be further explained are those of accommodation and decile.

Accommodation is not a factor in the national study. However, the university in this study has 13 halls of residence that provide accommodation, with some pastoral care and study support. For this study, therefore, students were divided into two groups according to whether they were staying at the hall of residence or not during their first year. The reference group was those who stayed in the hall. For the cohorts of this study, nearly 59% of students stayed at a hall of residence during their first year.

Decile rating in New Zealand relates to the relative socioeconomic characteristics of the area in which the school is located. This rating is often used as proxy indicator for the socioeconomic status of students' parents. Decile ratings were grouped in three bands: 1–3 were categorised as low decile, 4–7 as medium, and 8–10 as high. A fourth category was 'decile unknown'. This latter group included mainly overseas students. To obtain decile ratings, the institution's files were matched/merged with the Ministry of Education's school information files; decile ratings are not recorded in university records. In the dataset of the university used in this study one additional factor was included: accommodation details of students in their first year at university. The rationale for this will be explained below.

Results

Summary statistics

The summary statistics of these cohorts are provided in Appendix 1. When compared to the national study, the student population in the institution of this study resembled and differed in a number of respects. In both studies more women than men studied. The

institution in this study enrolled fewer Māori students (7.2% versus 11.8%), fewer students who studied fully extramurally (0.7% versus 9.8%), or part-time (41.5% versus 72.4%), but enrolled more students with university entrance qualifications (74% versus 43.9%), and more students who were registered as having a disability at some point during their studies (12.1% versus 3.3%).

Initially, the factors for each cohort were investigated separately. The results suggest that differences amongst the overall completion rates between the three years were minor. Although there were some differences between years for individual factors, in most cases these were not large. This was further confirmed by the regression using ‘year’ as factor. For the comparison with the national data it was considered appropriate, therefore, to model the three cohorts as one, rather than individually.

The following table (Table 1) shows the percentage of students who completed the degree, those who were still studying at the end of sixth year, and those who have left the institution without completing their bachelor degree. It also shows the attrition after the first year, and those who returned at some point.

Table 1
Completion Rates Three Cohorts

Cohort	2000 %	2001 %	2002 %	Combined results %
Completed within 6 years	69.3	69.5	69.2	69.3
Still studying after 6th years	3.2	3.2	3.9	3.4
Left without a degree	27.4	27.2	26.9	27.2
Left after first year	16.5	15.3	14.6	15.4
Started again	2.3	2.0	1.9	2.1
Completed or still enrolled in 6th year	1.2	1.5	1.1	1.3

Of those students in the combined cohorts who did not complete their degrees at the end of sixth year, 3.4% were still studying and 27.2% had left the university. The completion rate of the combined cohorts is 69.3%. This is about 24% higher than the six-year completion rate of 45% published by the Ministry of Education (Scott & Smart, 2005) using the 1998 cohort of New Zealand universities. For an overview of the actual completion rates see Appendix 2.

Regression results

A variety of logistic regression models were applied to the combined cohorts of three years. The results from the Hosmer and Lemeshow goodness of fit test indicated that the full model involving 13 dependent variables fitted the data best. In addition to the initial 12 dependent variables defined earlier, the cohort year was included in order to distinguish the three cohorts. This regression model has the following format:

$$\text{Logit}(p) = \beta_0 + \beta_1 \text{ Age} + \beta_2 \text{ Gender} + \beta_3 \text{ Ethnicity} + \beta_4 \text{ Nationality} + \beta_5 \text{ Disability} + \beta_6 \text{ Qualification} + \beta_7 \text{ Decile} + \beta_8 \text{ Load} + \beta_9 \text{ Mode} + \beta_{10} \text{ Division} + \beta_{11} \text{ Hall} + \beta_{12} \text{ Activity} + \beta_{13} \text{ Year}$$

where p denotes the probability of a student completing a bachelor degree.

The Wald statistics were used to identify the significant factors used in this model. It showed that gender had no significant influence on students completing the degree at this institution.

The cohort year factor was also not significant, which indicated that there were no major differences among the three cohorts.

The Age factor was significant, the odds between completion and non-completion here is $\exp(-0.022) = 0.978$. This means that the odds of completing the degree are decreased by $1 - 0.978 = 0.022$ with an increase of one year of age.

Comparison with the Ministry of Education study (Scott & Smart, 2005) shows many similarities regarding what characteristics are predictive of successful completion. Actual completion rates also show similarities and a comparison of the actual and adjusted rates can be found in Appendix 2.

The actual completion rate for full-time students was 75.6% as opposed to 60.5% for part-time students. Students studying part-time were less likely to complete the degree in comparison to those studying full-time. The regression model showed that the study load was significant. After adjusting for other study-related factors, the six-year completion rate for full-time students was 1.04 times that of part-time students.

Students studying with mixed program of campus-based and distance learning had an actual higher completion rate of 27% compared to those studying entirely on campus. The odds ratio between the two groups of students was 447%.

High school qualification was found to be a significant factor influencing students' completion rate. Overall, using adjusted completion rates, the results reflect the national study, whereby students with any year 13 qualification² were 1.44 times more likely to complete than students who entered university without having completed a high school qualification. Students in the institution of this study with A-Bursary³ were 1.49 times more likely to complete their bachelor degree than someone with no school qualification at all. Similar outcomes applied for the University Entrance (UE) group,⁴ those students with an overseas qualification and the B-Bursary group by 1.17, 1.30 and 1.36 times respectively.

Both the single institution study and the national study showed that females were more likely to complete a bachelor's degree than males. However, this gap was not statistically significant at the single institution, where females were 1.06 times more likely than males to complete their degree in actual terms, and 1.01 times after adjusting for other study-related factors.

The age factor was significant, which indicated that an increase of one year would decrease the odds of completing the degree by 2.2%. In actual terms, the single-institution students aged under 20 had the highest completion rate of 77% within six years. The rate reduced to 41.9% for students aged between 20 and 30; it fell to 29.1% for students over 30 when first enrolled.

Ethnicity was divided into five groups. In actual terms Asian students had the highest completion rate of 75.7%, followed by European students at 70.4%. After adjusting for other

² Year 13 in New Zealand refers to the final class of high school. Before 2004 students qualified with University Entrance qualifications, after 2004 with NCEA level 3 qualifications (see note 1).

³ Students who performed particularly well in their final exams prior to 2004 were awarded a B-Bursary or A-Bursary (top students). Students who did not qualify for either A or B Bursary, could qualify for 'normal' University Entrance (UE) qualification.

⁴ See previous note

study factors, European students gained the highest completion rate of 87.5%, and Asian students followed closely with a completion rate of 86.1%. It is interesting to note that the gap between the highest group and the lowest group, after adjustment, decreased to 8.3% from 24.7% in actual terms.

In the university used for this study, international students had a completion rate of 75.8%, while the domestic students had 68.9% in actual terms. This rate increased to 94.4% for international students and 87.5% for domestic students after being adjusted. The corresponding completion rates for the national cohort were 57.3% versus 48.2% in actual terms, and 82.5% versus 65.2% in adjusted terms. In both actual and adjusted terms, the difference between international and domestic students' completion rates of the national cohort was greater than those from the single institution.

In the single institution, Health Sciences students had the highest completion rate of 79.7% among all four divisions, followed by Sciences students with a rate of 73.8%, Commerce of 70.40% and 59.7% in Humanities. After adjusting for other study factors, the ranking among the four divisions changed, even though the difference between the highest and smallest rate decreased to 4.2% only. For the national cohort the difference between Health Science and Humanities students is equally large.

Disability was a significant contributing factor in completion rate in the institution of this study for the combined cohorts. It was also significant for the 1998 national cohorts. The difference of completion rate between students without disability and those with disability was about 2% in actual terms and 2.1% in reversed order after being adjusted.

The regression model used showed that the decile of schools was not a significant factor in completing the degrees. At this institution, students from higher decile schools did a little better than those from the lower ones in completing their degrees in actual terms, but this was not statistically significant. The adjusted results showed almost no difference in the completion rate for students from various decile schools. In the national study, the adjusted rate was marginally significant.

Students who came directly from high school had higher completion rate (78.6%) than those who had been studying at other tertiary institutes (45.1%) or those who had been working or being staying at home (43.5%). After adjusting this for other factors, the difference among the three groups decreased — 87.5% for students directly from high schools, 81.0% with previous tertiary experience and 79.9% for the group with other previous experiences.

Accommodation played a very significant role for students' completion rates in the single institution. Students who stayed in a hall of residence during the first year of their study had a completion rate 27.6% higher than those who did not in actual terms, and 6.3% after adjusting.

Discussion

The overall results suggest that the completion rates at the particular institution in this study did not differ significantly between different year cohorts. Apart from the student intake of the three years in this study having a reasonably similar demographic make-up, it

could possibly suggest that institutional factors that might play a role in students' retention and/or completion did not change significantly over the years between 2000 and 2007.

Secondly, the completion rates in the single institution were significantly higher than those in the nationwide study. The six-year completion rates for the 1998 nationwide cohort was 48.7% (Scott & Smart, 2005), the average at the institution in this study was 69.3%. The overall national completion rate for the 1998 cohort was revised upwards in 2007 to nearly 53% through a review of the data matching method (Scott, 2007). However, as the factor completion exercise has not been repeated and/or published, no further breakdown can be provided. The significant difference between the national average and the single institution in this study, however, remains. This could suggest differences in the make-up of the student population of this institution or a different institutional context that impacts on student completion, or both.

Higher completion rates for the university in this study could be interpreted, to some extent, by considering the characteristics of the student population included in the two studies. Compared to the national data, the institution in this study had relatively more students with year 13 level qualifications, and fewer students who were enrolled in distance learning programs only. Although no first-year accommodation data was recorded for the national data source, living in a hall of residence was a statistically significant factor (both in actual and adjusted terms) in the completion rates of the institution of this study; nearly 60% of first-year students in the single institutional data lived in halls of residence. These three factors impact on completion rates and two of these factors are more favourably distributed in the single institution study compared to the national study.

The greater proportion of students with year 13 qualifications — 74% compared to 43.9% — however, in itself does not explain the difference in overall completion rate. Comparison of the completion rate of students with year 13 qualifications in both studies shows that the actual completion rates for this group also differ. The nationwide average is 56.3% compared to 77.5% for the single institution — a difference of more than 20%. Further comparison shows that fewer than 1% of students with year 13 qualifications in the single institution did not come directly from a New Zealand high school; in the nationwide study nearly 10% did not come straight from high school. However, this still suggests that students in the single institution study with year 13 qualification who came directly from high school had a 10% higher completion rate than students nationwide. What cannot be established, however, is the relative make-up of the level of attainment within year 13 qualifications in the national study. In the single institution study, a considerable number of year 13 qualifications consist of A bursary awards (highest attainment), close to 37%.

The figures for students who came into university with lower or no qualifications show an opposite trend. Of the 36.8% New Zealand students who did not have Year 13 qualifications in the nationwide study, 43.9% completed their bachelor qualification. In the single institution study of the 19.8% students in that group 38.4% completed their degree. The largest differences were noted in the completion rates of students with year 11 qualifications where the completion rates in nationwide study was close to 10% higher than that of the single institution.

It could be concluded that academic preparedness, as measured by a proxy indicator of entry qualification, plays out differently in the two studies. After adjusting qualification completion rates for other factors there is still a significant difference between those students

with a year 13 qualification and those who lack this qualification. The results could suggest that students who are academically more prepared have a more successful outcome in the single institution in this study than universities nationwide. For those who are less academically prepared on entrance, the opposite is the case. This could be an area where interventions could be considered. Interventions could take the form of, for example, study support strategies for academically less-prepared students or provision of alternative pathways into university studies.

Comparison of the completion rates for different ethnic groups showed a different picture to that of academic preparedness. Whereas it could be cautiously suggested that the single institution might not seem to cater for a diversity of academic preparedness levels, this institution did seem to cater well for ethnic diversity. After adjusting completion rates for other factors, the differences between ethnic groups were significantly less, more so than in the national data. After adjusting for other factors, the differences between European, Maori and Pasifika⁵ students shrunk considerably from 15.4% and 18.5%, to 4.7% and 8.3% respectively. This pattern was not evident in the national data. Although there were still actual differences in completion rates, these completion rates were still more favourable.

In considering interventions to improve completion rates, an institution would want to know whether completion rates are a function of the particular cohorts who enter in a particular year, or whether there are considerable inter-cohort differences. Therefore the three cohorts were also considered separately. The results suggest that overall trends and characteristics of completion rates between three different cohorts were very similar within this one institution. This suggests that interventions could be planned based on similar patterns over a number of years. For example, planning better transition pathways for students who are less well prepared academically would be sensible as it is clear that this group consistently under-performed in all the three different cohorts of the study. This was not just a one-off occurrence in one particular year.

Furthermore, in considering when interventions might be most likely to have the greatest effect, it is clear that the highest drop-out rate occurs in the first year — a factor also reported in many overseas studies (Asmar, 2001; Krause et al., 2005; Upcraft, Gardner, & Barefoot, 2005). The higher relative completion rate of students who returned in the second year indicates that retaining students after their first year of study is one of the most important factors of completing the degree.

In conclusion, establishing baseline completion data for individual institutions is important when considering interventions to improve completion rates. Some possible foci for the single institution have been suggested. This study is only a first step in exploring how institutional data can be used to identify possible areas of interventions. Some broad similarities and differences between national data and the data for a single university have been described. Further studies are planned to investigate more fully the ethnicity factor in retention and completion. Further exploration of the relationship between levels of achievement in the first year (as measured by Grade Point Average) and degree completion has also been planned.

⁵ Students who identified their ethnicity as Samoan, Tongan, Tokelauan, Nueian, Cook Island Maori, Fijian or 'other' Pacific Island.

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Appendix 1*Characteristic of combined cohorts compared with the national cohort*

	Number	Inst. %	NZ %
Total cohort	9396	100.0	100
Completed status			
Yes	6515	69.3	48.7
No (including those still studying)	2881	30.7	51.3
Gender			
Female	5271	56.1	39.4
Male	4125	43.9	60.6
Age in year 1			
Mean (Standard deviation)		20.0 (5.18)	25.7 (9.7)
Mode		18.2	
Minimum (Maximum)		15.1 (70.1)	13 (92)
Age < 20	7534	80.2	
20 ≤ Age ≤ 30	1370	14.6	
30 < Age	492	5.2	
Ethnic group			
European	7012	74.6	64.3
Maori	674	7.2	11.8
Pasifika	216	2.3	3.6
Asian	1240	13.2	11.3
Other	254	2.7	3.3
Unknown NZ			5.7
Disability			
Does not have a disability	8262	87.9	96.7
Has a disability (in any year)	1134	12.1	3.3
Domestic or International			
Domestic	8854	94.2	95.8
International	542	5.8	4.2
Highest school qualification			
No school qualification	390	4.2	3.6
Year 11 qualification (School Certificate)	314	3.3	7.8
Year 12 qualification (Sixth Form Certificate)	1155	12.3	25.4
Year 13 qualification (A Bursary)	2583	27.5	
Year 13 qualification (B Bursary)	2761	29.4	
Year 13 qualification (Entrance)	1606	17.1	
Year 13 qualification NZ			43.9
Overseas qualification	587	6.2	5.5
Unknown NZ			13.8
Decile of last school attended			
Deciles 1–3 (low)	439	4.7	15.4
Deciles 4–7 (medium)	3606	38.4	32.6
Deciles 8–10 (high)	4771	50.8	29.9
Decile unknown	580	6.2	22.1
Prior activity			
Secondary school student	6897	73.4	34.2
Tertiary student	534	5.7	11.4
Work/Other	1965	20.9	54.4
Internal or External			
Fully internal	8841	94.1	83.1
Fully external	65	0.7	9.8
Mixed (both internal and external)	490	5.2	7.1
Division of Study			
Commerce	2165	23.0	
Health Sciences	1456	15.5	
Humanities	3051	32.5	
Sciences	2724	29.0	

Appendix 1 (continued)

	Number	Inst. %	NZ %
Full-time (in all years until completion)	5494	58.5	27.6
Part-time (in any year)	3902	41.5	72.4
Hall of Residence or not			
Hall of Residence in the first year	5526	58.8	

Appendix 2*Actual and adjusted six-year completion rates*

Factor	NZ	Single institution	Single institution	Single institution	NZ	Single institution
	Actual completion rate %	Actual completion rate 2000 %	Actual completion rate 2001 %	Actual completion rate 2002 %	Adjusted completion rate %	Adjusted completion rate 3 cohorts %
All Students	48.7	69.30	69.50	69.20	65.2	87.5
Gender						
Female	51.8	71.30	71.80	69.90	65.2	87.5
Male	43.7	66.80	66.70	68.20	57.3	87.1
Ethnic group						
European	50.2	70.10	70.60	70.50	65.2	87.5
Māori	40.7	58.50	54.60	52.30	51.1	82.8
Pasifika	35.2	51.60	51.10	53.30	48.9	79.2
Asian	52.3	76.30	77.30	73.80	66.8	86.1
Other	45.0	54.20	61.30	65.70	61.9	83.3
Disability						
Does not have a disability	48.8	69.40	69.40	69.60	65.2	87.5
Has a disability	43.2	68.80	70.50	65.40	62.3	89.6
Domestic or international						
Domestic	48.2	68.90	69.20	68.70	65.2	87.5
International	57.3	78.90	74.60	75.00	82.5	94.4
Highest school qualification						
No school qualification	33.6	34.70	39.20	31.50	45.3	58.6
Year 11 qualification	36.8	28.80	26.20	27.30	50.0	56.5
Year 12 qualification	47.6	43.20	41.20	42.90	61.5	63.1
Year 13 qualification	56.3				65.2	
Year 13 qualification (A Bursary)		86.30	87.00	86.30		87.5
Year 13 qualification (B Bursary)		76.40	78.70	79.60		79.8
Year 13 qualification (Entrance)		61.70	63.00	60.70		68.5
Overseas qualification	45.1	70.50	71.20	69.20	55.1	76.6
Decile of last school						
Deciles 1–3 (low)	46.4	60.00	67.60	64.10	64.3	87.0
Deciles 4–7 (medium)	49.8	67.50	67.10	66.90	65.2	87.5
Deciles 8–10 (high)	52.3	71.00	72.50	72.00	65.8	87.3
Decile unknown	n/a	71.90	62.20	46.30	n/a	88.9
Prior activity						
Secondary school student	61.5	77.70	79.40	78.60	65.2	87.5
Tertiary student	47.4	50.00	41.10	44.60	58.1	81.0
Employed	31.1				43.3	
Non-employed or beneficiary	38.3				59.3	
House person or retired	35.0				54.2	
Other		42.40	43.50	44.50		79.9
Overseas	54.7				66.8	
Intramural or extramural						
Fully intramural	53.2	69.40	68.80	68.40	65.2	87.5
Both intra- and extramural	47.3	81.80	89.00	88.80	68.3	96.6
Fully extramural	10.9	0	10.00	4.50	47.3	37.4

Appendix 2 (continued)

Factor	NZ	Single institution	Single institution	Single institution	NZ	Single institution
	Actual completion rate %	Actual completion rate 2000 %	Actual completion rate 2001 %	Actual completion rate 2002 %	Adjusted completion rate %	Adjusted completion rate 3 cohorts %
Field of study						
Natural and physical sciences	39.2				56.0	
Information technology	36.5				60.0	
Engineering and related technologies	63.6				74.0	
Architecture and building	61.4				74.4	
Agriculture, environmental and related studies	52.1				66.4	
Sciences		73.00	74.20	74.00		90.6
Health sciences	67.7	80.00	80.20	78.80	88.7	88.6
Management and commerce	43.0	71.80	68.80	70.60	66.5	91.7
Education	70.5				86.1	
Society and culture	43.8				65.2	
Creative arts	62.7				75.5	
Humanities, arts and education		59.10	60.70	59.20		87.5
Mixed field programs	63.0				77.5	
First-year accommodation						
Residential college	n/a	81.10	80.10	81.00		87.5
Other	n/a	52.80	54.20	52.20		81.2
Study load						
Full-time	n/a	76.10	74.80	76.10		87.5
Part-time	n/a	58.90	62.40	59.80		84.1
Age in first year						
Age < 20	n/a	76.70	77.40	76.70		
20 ≤ Age ≤ 30	n/a	43.30	39.20	43.30		
30 < Age	n/a	26.10	30.80	30.10		
18	n/a				65.2	87.5