

A CHANGING POPULATION AND THE NEW ZEALAND TERTIARY EDUCATION SECTOR

The size of the tertiary student population is an indicator of both the accessibility of tertiary education and the perceived value of undertaking tertiary study. Forecasts of the size of the student population are important in determining the levels of human capital that will be available to the New Zealand labour force in the foreseeable future.

This case study uses Statistics New Zealand's population projections in order to consider some implications that demographic trends may have on both the profile of the tertiary student population and the network of public tertiary education provision. Information about future change in the student population can assist providers in planning for future changes in the provision of various types of education.

This study firstly discusses the results of a simulation which applied a number of characteristics of the tertiary student population of 2005 to national population projections. It then discusses some possible implications of sub-national population projections on student numbers at the local level. Refer to McClelland (2006) for details on methodology and data sources.

CASE STUDY SCENARIO

An important assumption of this study is that changes in the foreseeable future in the size of the student population will come about from population change rather than from other changes in the level of participation in tertiary education. This premise of no change in participation rates or in any of the factors that influence demand, such as those of an economic, social, cultural and political nature, may appear initially to be an oversimplification. This is particularly so because over recent years participation trends in tertiary education in New Zealand have been driven by increases in participation rather than by changes in the size of New Zealand's population. Between 2000 and 2005, 85 percent of all growth in student enrolments has resulted from increased participation in tertiary study rather than from population growth. For example, enrolments in sub-degree qualifications accounted for nearly 90 percent of all student growth in the sector over this period. These

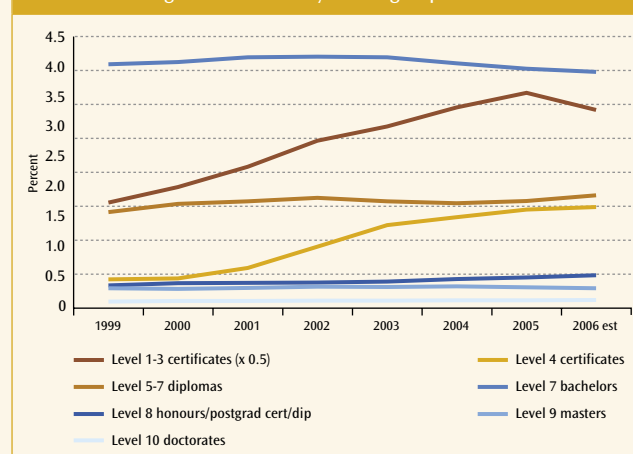
qualifications have been very successful at attracting first-time tertiary students who have low or no school qualifications.

Nevertheless, recent evidence and future policy changes provide good reasons for modelling the effect of demographic change on the tertiary student population in the medium term. Firstly, it is expected that controls put in place by the government over the last two years will, for the most part, result in the immediate stabilisation of the rates of participation in tertiary education in the high-growth areas. Figure 1 below shows the stabilisation of participation in sub-degree certificates.

Secondly, recent announcements made by the government on the next stage of the tertiary reforms signal that from 2008 the sector will operate in a more defined and managed way that may result in less volatility in tertiary education participation rates than that experienced in recent years. Thirdly, the funding levels set by government will, in fact, take into account demographic change.

Implementation of the above proposals will mean that, in the future, population change is likely to become the single most important driver of the size of the New Zealand tertiary student population.

Figure 1: Proportion of learners aged 15 years or over enrolled in level 1-4 sub-degree certificates by ethnic group



Notes:

1. For the purposes of presentation, the data for level 1-3 certificate has been decreased by 50 percent.
2. The data for 2006 is an estimate based on student growth over the period of 31 August 2005 to 31 August 2006.



Learners in tertiary education

A TERTIARY STUDENT POPULATION FORECAST

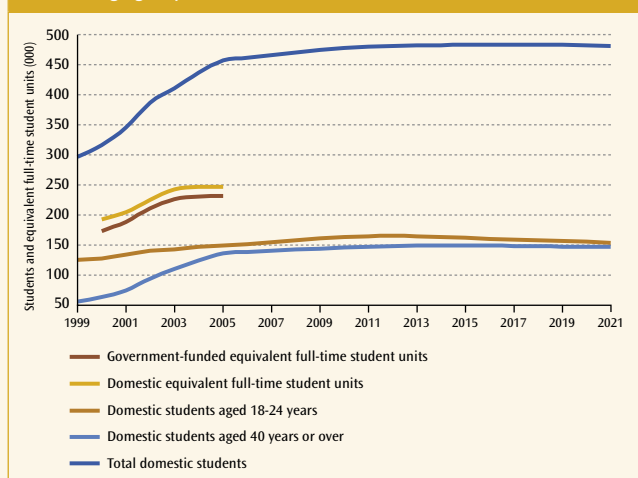
Based on the assumption of demographic change alone, and without allowing for any possible change in participation rates, it can be shown that over the period 2005 to 2021:

- the total number of domestic students is expected to peak in 2016 at 483,000 students – 26,000 (6 percent) more students than in 2005
- the number of domestic students in the traditional core student age group of 18 to 24 years is estimated to peak in 2012 at 165,000 students – 17,000 (11 percent) more students than in 2005. From 2013 onwards the number of students in this age group will then decline by 11,000 students (7 percent) to 153,000 students in 2021
- the number of students aged 40 years or over is expected to contribute 52 percent of all growth in students between 2005 and 2014
- demand for tertiary education at the sub-degree levels is projected to continue to dominate growth in student numbers, with 72 percent of all growth occurring at this level. The numbers of students in sub-degree qualifications is expected to peak in 2019 at 333,000 students – 17,000 (5 percent) more students than in 2005. Nearly all growth (93 percent) in students aged over 40 years is expected to occur in sub-degree qualifications
- the number of students studying at bachelors-degree level is estimated to peak in 2012 at an historic high of 137,000 students – 9,000 (7 percent) more students than in 2005. Based on this growth, the numbers of postgraduate students would peak in 2018 at an historic high of 33,000 students – 2,100 (7 percent) more students than in 2005
- the number of students of European ethnicity would decrease by 19,000 (6 percent) from 2005 to 2021, while the numbers of the other main ethnic groups would all increase over this period – Asian by 23,000 (41 percent), Māori by 20,000 (22 percent) and Pasifika by 14,000 (48 percent)
- the share of the student population of European ethnicity would decrease from 65 percent in 2005 to 57 percent in 2021, while the student shares of the other main ethnic groups would all increase over this period – Māori (from 20 to 23 percent), Asian (from 12 to 16 percent) and Pasifika (from 6 to 9 percent)

- growth in demand for tertiary education by Māori and Pasifika peoples would continue to be mostly at the sub-degree level – 85 percent and 75 percent of their respective growth in student numbers from 2005 to 2021
- the numbers of Māori students studying at bachelors-degree level and postgraduate level would increase by 3,300 (22 percent) and 640 (24 percent), respectively from 2005 to 2021, and
- for Pasifika peoples, the numbers studying at bachelors-degree level and postgraduate level would increase by 3,500 (51 percent) and 400 (45 percent), respectively over this period.

Figure 2 shows that the forecast of total student numbers reflects the recent slowdown in participation in tertiary education in terms of equivalent full-time student units. Figure 3 shows that the tertiary student population would become more ethnically diverse in the medium term.

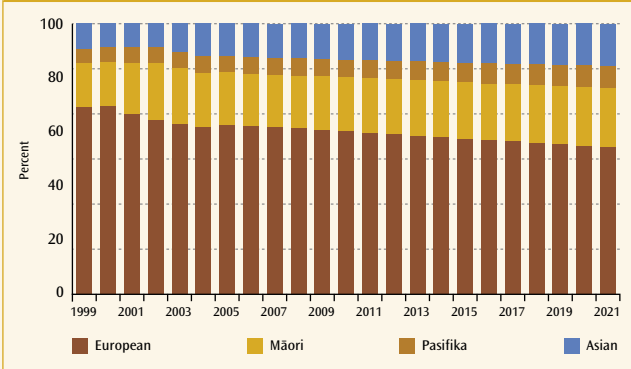
Figure 2: Projections of domestic tertiary student numbers by selected age group



Notes:

1. Student numbers from 1999 to 2005 are actuals.
2. For comparative purposes, the equivalent full-time student units exclude non-formal students such as those in adult and community education.

Figure 3: Projected distributions of domestic tertiary students by selected ethnic group

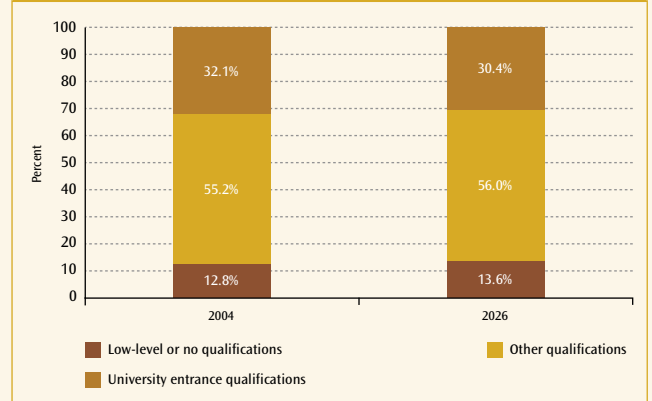


Note: Student numbers from 1999 to 2005 are actuals.

The skewed participation patterns in tertiary education for Māori and Pasifika peoples indicate among other factors that, on average, the highest level of qualification attained by Māori and Pasifika learners in secondary school education is lower than that of other groups. In 2004, 12 percent of Māori and Pasifika peoples attained a university entrance qualification (compared with 39 percent for all other ethnic groups) and 23 percent of them left with no qualifications (compared with 9 percent for all other ethnic groups).

Again, if these school leaver attainment levels persist, and all other factors remain constant, then the projected population change alone is expected to result in no improvement in the levels of leaving qualifications but rather a slight decline in school leavers with a university entrance qualification and a slight increase in those with no qualifications (refer Figure 4). This could see a diminishing proportion of school leavers able to enter directly into bachelors-degree level study over the longer term.

Figure 4: Projected school leaver attainment for 2026 by highest qualification



Note: School leaver attainment figures for 2004 are actual.

REGIONAL POPULATION CHANGE AND THE TERTIARY SECTOR

Population change could have implications for the number of students at the campuses of some tertiary education institutions in the future. It is expected that just over half of New Zealand's 74 territorial authorities will have fewer residents in 2026 than in 2006. It is expected that in 20 years' time only 16 territorial authorities will have experienced population growth in the 15 to 39 years age group, while 29 territorial authorities will have experienced population growth in the 40 to 64 years age group and nearly all territorial authorities will have experienced population growth in the 65 years or over age group.

Many tertiary education institutions have multiple campuses. In 2005, leaving aside extramural provision, the network of public tertiary education provision comprised 33 tertiary education institutions (made up of eight universities, 20 institutes of technology and polytechnics, two colleges of education and three wānanga) delivering tertiary education via a network comprising 117 campuses with at least 50 equivalent full-time students. This network is spread throughout 45 territorial authorities.

Of these 117 campuses, 19 belong to universities, 56 to polytechnics, seven to colleges of education and 35 to wānanga. The main centres have the most tertiary education institutions, particularly Auckland City and Christchurch City, where eight different tertiary education institutions are present in each. Over



Learners in tertiary education

half of the polytechnics have three or more campuses. Waiariki Institute of Technology alone has seven campuses and Northland Polytechnic has five. Most of the universities have one or two campuses while, of the two remaining colleges, Christchurch College of Education has five campuses. Te Wānanga o Aotearoa has the largest number of campuses with 25, followed by Te Whare Wānanga o Awanuiarangi with nine. Along with Te Wānanga o Raukawa (one campus) the growth in the network of wānanga provision in recent years has been a key driver in lifting the participation rate of Māori in tertiary education to the highest level of all ethnic groups.

Regional population change would have the greatest implications for providers with a strong regional focus. The institutes of technology and polytechnics, in particular, are increasingly expected to have a focus on the skill and education needs of their region. Of the 56 polytechnic campuses, 37 are in areas¹ where population decline is expected over the next 20 years for people aged 15 to 39 years, and 26 are in areas where population decline is expected for people aged 40 to 64 years over the same period.²

Perhaps as a response to declining populations, five of the 18 polytechnics based outside of the greater Auckland region have campuses in Auckland City, which is expected to have the largest population of people aged 15 to 64 years in 20 years' time.

The implications of population decline on student numbers may be further compounded in areas where there are multiple tertiary education providers present. For example, the area comprising

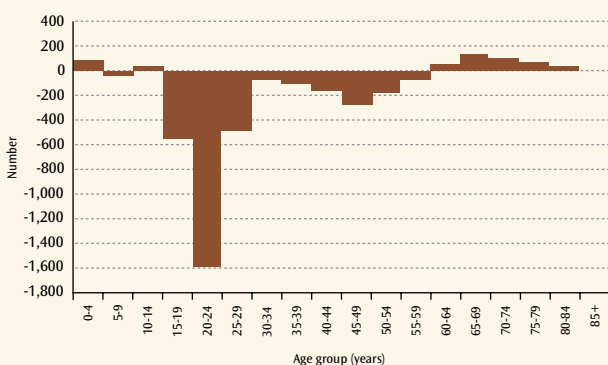
New Plymouth District and its adjacent territorial authorities of Waitomo District, Stratford District, South Taranaki District and Ruapehu District contains six institutions providing tertiary education from seven campuses. This area is expected to experience a 19 percent decline in population aged 15 to 64 years by 2026. Currently in this area there is one tertiary education institution campus for every 11,600 people in this age group but by 2026 this ratio is expected to become one campus for every 9,400 students. Similar scenarios are predicted for the multiple tertiary education institutions located in other areas that include Gisborne District, Masterton District and Invercargill City.

Population decline may be less likely to impact on student numbers at campuses with the greatest student to campus ratios. While overall there is one tertiary education institution campus per 23,400 New Zealanders aged 15 to 64 years, the campus to student ratio varies from 1:10,700 for Rotorua District to 1:46,300 for North Shore City.

Change in regional populations is less likely to impact on university student populations. Statistics New Zealand internal migration data shows a relationship between population decline in areas that do not contain a university and population increase in areas that do contain a university. Such non-university areas generally experience net outflows in the age groups of 15 to 19 years and 20 to 24 years, while university cities are expected to experience net migration inflows in these age groups. Figure 5 shows the net migration flows from 1997 to 2001 for a territorial authority with a university, and one without a university.

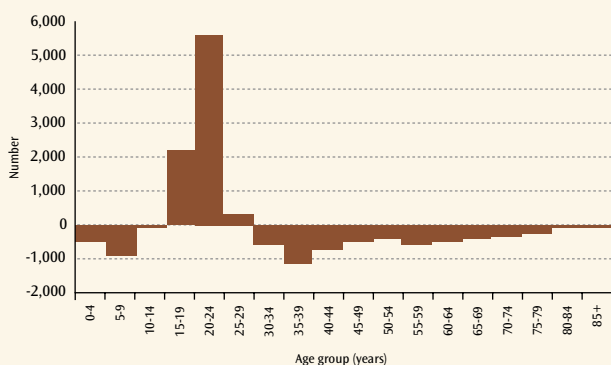
Figure 5: New Plymouth District and Wellington City net migration flows (1997 to 2001) by age group

New Plymouth District



Source: Statistics New Zealand.

Wellington City



1 Here an 'area' is defined as the combination of the areas of the territorial authority in which a campus is located and all of its adjacent territorial authorities and is used as a proxy for a local catchment area of students.

2 Derived from Statistics New Zealand sub-national resident population projections (medium series, 2001 base) and Ministry of Education campus data.

While not considered in the above analysis, it is likely that future population change will also impact upon the network of approximately 800 registered private training establishments spread throughout the country offering niche tertiary education.

Reference

- McClelland, J. (2006), *A changing population and the New Zealand tertiary education sector*, Ministry of Education, Wellington.