Second-Generation Greek-Australian and Italian-Australian Students at Victoria University

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This paper examines the academic performance of the second-generation Australians at Victoria University in 2007. The study utilises Australian Bureau of Statistics Census 2006 estimates of socio-economic status to investigate the roles of socio-economic background, and cultural and linguistic diversity (CALD). Attention is given to students of Greek and Italian ancestry. The study also accounts for selection bias, elite high school participation, gender, age, employment status, and study intensity. The evidence suggests that academic outcomes vary by sector, and languages-other-than-English (LOTE) are a key driver of the disadvantage observed in second-generation Australian students.

Introduction

Student outcomes are determined by many factors of which socio-economic status (SES) is an important driver (James, Anderson, Bexley, Devlin, Garnett, Marginson & Maxwell, 2008; Long, Ferrier & Heagney, 2006). Cultural background also plays a role, for it affects student aspirations and, thus, academic achievement (Marjoribanks, 2002). Marks (2007) and Dobson & Sharma (1993) also highlight non-English speaking background as a key driver of student performance.

 Khoo, McDonald, Giorgas & Birrell (2002) provide a comprehensive view of the second-generation in Australia.[1] They maintain that the second-generation integrates well in society and has high levels of educational attainment. They show that persons of Greek and Italian background have achieved higher participation rates at tertiary education than mainstream Australian students. This echoes earlier evidence by Marks, Fleming, Long & McMillan (2000). Yet, Messinis (2009) suggests that second-generation

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[1]   The first-generation consists of persons born overseas (i.e., outside Australia) while the second-generation are Australia-born persons who had at least one parent born overseas.

full-time workers are disadvantaged in the labour market when a language other than English (LOTE) is spoken at home.[2]

This study extends the Messinis, Sheehan & Miholcic (2009) study to examine academic student outcomes of second-generation Australians at Victoria University, in 2007. Special emphasis is given to students of Greek and Italian backgrounds. Victoria University (VU) is a new dual-sector university since it offers both Higher Education and Vocational Education and Training (VET) studies. The University draws heavily on the western region of Melbourne, and students from low socio-economic status (SES) and non-English speaking backgrounds (NESB) (Messinis, Sheehan & Miholcic, 2008).

The study utilises VU unit-record data on student records to shed light on the drivers of academic achievement for Australian students, in 2007. In contrast to previous studies that use aggregated measures of SES (Bradley, 2008), the VU data allow for more accurate estimates of student SES. Given the strong representation of students of low SES and NESB backgrounds (Messinis et al., 2008), the VU data also facilitate a first-time multivariate analysis of tertiary student performance of specific groups such as Greek, Italian and other backgrounds. The study employs conventional measures of progression to examine the drivers of student outcomes in higher education and VET sectors. Finally, the paper examines segments of the VU student population, as an attempt to account for selection problems that can contaminate results when certain groups of students are not representative of the whole distribution of socio-economic background.

The paper is organised as follows. The following section provides a short review of existing literature. An outline of the data and methodology adopted is followed by a discussion of the results and the final section concludes.

Recent literature on progression and attrition

There is an extensive literature on the determinants of student progression and attrition in tertiary education. Existing research points to several factors with emphasis on age, gender, socio-economic status and cultural and linguistic diversity (CALD). However, some empirical studies reach different conclusions with respect to the importance of these factors. This can be explained by differences in the target group, the period examined and the dimension of performance examined, for there are several ways to measure student performance (see next section).

First, younger students seem to have the highest completion rates which decline with age (Martin, Maclachlan & Karmel, 2001; Shah & Burke, 1999; Marks, 2007). Other studies also show that completion rates are highest amongst the young (DEST, 2004; Martin et al., 2001) but students aged 20–24 years old have the lowest attrition rates (Cao & Gabb, 2006). Similar results are presented by Long et al. (2006) and Long & Hayden

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[2] Note that speaking a LOTE at home does not necessarily imply that English is not spoken at home but it may indicate an English language deficit (Messinis, 2009).

(2001) who suggest that mature aged students are more likely to withdraw from their studies due to difficulties associated with socioeconomic disadvantage and illness.

Gender is also an important factor. Females have lower attrition rates than males (Cao & Gabb, 2006) and are more likely to complete an award than males (Martin et al., 2001; Shah & Burke, 1999). Yet, females may be more inclined to withdraw from their course because of family commitments (Vickers, Lamb & Hinley, 2003; Lamb, Robinson & Davies, 2001; Walstab, Golding, Teese, Charlton & Polesel, 2001). Amongst continuing students, on the other hand, females seem to perform better than males (Dobson & Sharma, 1995; 1993).

Student engagement with the labour market has also drawn attention but the results seem mixed. This is because it is critical to distinguish between full-time and part-time work. It seems that full-time employment leads to the highest attrition rates (Long et al., 2006) while part-time employment associates with lower attrition rates, when compared to those not-in-employment or in full-time work (Cao & Gabb, 2006; McMillan, 2005). Students with full-time jobs are more likely to withdraw because of a conflict between studies and work (Long et al., 2006). Bradley (2008) begs to differ and suggests that both students who do not work and students who work many hours, are both more likely than other students, to continue their studies.

Intuitively, study intensity (full-time or part-time) is an important dimension of academic outcomes. The literature consensus is that part-time students are more likely to withdraw from their university course than those with a full-time study load (Krause, Hartley, James & McInnis, 2005; Martin et al., 2001). Attrition rates are substantially higher for part-time students than those undertaking full-time studies. More precisely, Cao & Gabb (2006) show that part-time attrition rates range between 39%–45%; three times as high as those for full-time. Long et al. (2006) report comparable rates and Shah, Long & Burke (2004) find that students enrolled in full-time courses are more likely to persist with their studies.

The role socio-economic status plays in student outcomes has a long history in the education literature. Although James et al. (2008) maintain that students of low socio-economic status (SES) have retention rates that are comparable to those of other groups, Cao & Gab (2006) suggest that low SES associates with low attrition. This, however, is contradicted by Long et al. (2006) who show that students of lower SES backgrounds are more likely to withdraw from university.

Despite low access rates and possibly higher attrition rates associated with low SES, Martin et al. (2001) argue that low SES also impacts adversely on completion rates. This is, however, disputed by Marks (2007) who claims that low SES has little adverse effect on completion rates. Bradley (2008) also argues that the participation of students of low SES in higher education seems to have no impact on academic standards but this claim is qualified by a warning of the unreliability of standard measures of SES.

Culture and language are also considered to be significant factors for academic outcomes. McMillan (2005) use Longitudinal Surveys of Australian Youth (LSAY) data to show that students with a language other than English (LOTE) experience lower

attrition rates than students with an English-speaking background. This is consistent with evidence by Martin et al. (2001) who report that students from a non-English speaking background (NESB) are more likely to complete their studies than others. This finding is consistent with that of Long et al. (2006) who suggest that attrition is higher for students who speak only English at home. However, this is challenged by Cao & Gabb (2006) who show that the differences between NESB and English-speaking-only students or between students born in Australia and those born overseas are not statistically significant.

Of course, NESB may associate with both lower attrition rates as well as lower success rates (James, Baldwin, Coates, Krause & McInnis, 2004). This interpretation corroborates with evidence by Dobson and Sharma (1993) who observe that NESB students experience lower progression rates than those of English-speaking backgrounds. Cobbin & Barlow (1993) present similar results with the caveat that VET students avoid the NESB disadvantage. Dobson & Sharma (1993) also highlight the fact that international students are different and seem to perform better than others.

Finally, existing literature on student performance has focused on the "typical" student and has ignored the potential for non-random representation of various student groups in tertiary education. This standard approach implicitly assumes that the student groups under investigation have similar ability. If that assumption is invalid, however, group differences in ability may give rise to selection bias. Birch & Miller (2006) account for this possibility by employing quartile regressions that examine student performance for five different quintiles of students at the University of Western Australia, grouped by the Tertiary Entrance Rank (TER) score. They find that, female student academic outcomes at secondary education, as measured by TER scores, and the state high school system, are all key drivers of academic success in tertiary education.

Data, measures and methodology

An outline of the data and methodology adopted in this paper is now presented. The empirical assessment of student outcomes has several dimensions. First, students may enrol but then withdraw (attrition). Second, continuing students may fail to complete their course satisfactorily. Third, those who manage to complete their studies may score different results. Although research interest may involve any of the above dimensions, the reality is that data availability and measurement errors can impose severe limitations on specific analyses. In the absence of longitudinal data, for instance, it is almost impossible to draw valid conclusions on attrition, if information on earlier years is lacking.

In the light of the above, this study seeks to evaluate completion or progression rates. As in Dobson & Sharma (1993), the study uses *progress rate* as a measure of tertiary, academic performance. In higher education, progress rate is calculated as the ratio of passed load to assessed load (both in Equivalent Full-Time Student Loads). In the VET sector, progress rate is defined in terms of the Modular Load Completion Rate

based on student contact hours (SCH). In particular, progress rate for VET students is calculated as the ratio of completed SCH to counted SCH. Thus, group analysis of progress rates is undertaken separately for higher education and VET students.

The 2007 student population of Victoria University (VU) is employed to examine progression rates in the higher education and VET sectors. The VU data records students' home addresses that enable the linking of student information to the Australian Bureau of Statistics Census 2006 estimates of relative index of economic advantage, SEIFA, at the Census Collectors Districts (CCDs) level. A typical Postal Area (POA) (postcode) is as large as 15 CCDs where the latter consists of approximately 220 households (Australian Bureau of Statistics, 2002). Thus, in contrast to existing literature that uses POA measures of SES,[3] the CCD measure of SEIFA used here is less susceptible to the criticism raised by James et al. (2008) that postcode estimates of SEIFA are very crude and perhaps highly inaccurate estimates of low SES groups in tertiary education. That is, the CCD SEIFA measures are more likely to summarise the SES background of individual students than the SEIFA indicators used in previous studies.

In 2007, the VU data had 34,674 consolidated records of Australian students (one record per student by sector), with 53.5% of these being enrolments in higher education. Since the progress rate was zero in 15.6% cases, one in 84.3% cases, with only 34 cases having an intermediate value, between 0 and 1, analysis below focuses on Prog100 (an indicator variable that takes the value of one if progress rate is one and the value of zero if progress rate is smaller than one). Hence, the explained variable is the probability of 100% in academic progress.

In order to reveal the probability of 100% academic success, multivariate regression analysis was conducted at the student level, employing a Generalised Least Squares (GLS) Logit Maximum Likelihood Estimator. The model allows the explained variable to have a non-normal distribution with standard errors being robust to variability in its spread and to extreme values.[4]

Note, however, that standard regressions can yield biased estimates of the relationship between the explained variable and the explaining variables when the student groups of interest are not random samples of the population and exhibit different characteristics to those of the population. Here, the research interest is in the academic outcomes of various groups of students from diverse linguistic and cultural backgrounds. For valid inferences, it is required that these groups are all representative of their overall student sub-population. It is feasible that some groups of students self-select or are selected to study at Victoria University more than others and the factor that drives this selection may not be observed. For example, if cognitive ability

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[3]   See, for example, Sinclair, Doughney & Palermo (2003).

[4]   Victoria University offers three kinds of studies: higher education, vocational education and training, and further education. The first is a university degree or graduate diploma, the second relates to trade qualifications such as Certificate III–IV or technical diplomas, and the third involves no-award short-courses.

is that factor and the incidence of underrepresentation of more able students is much higher for students of, say, Greek or Italian background, the study may conclude that these specific groups underperform at Victoria University. However, this conclusion would be misleading or biased since the analysis does not control the unobserved selection factor of ability.[5]

Several techniques can be employed to account for selection bias but quantile regressions are increasingly used in the literature (Messinis, 2009). Intuitively, the approach involves the segmentation of the sample and the estimation of separate regressions for each segment. These sub-samples are constructed on the basis of a variable that correlates with the unobservable factor that drives the selection process, discussed above. The idea is that selection bias can be minimised if group comparisons are confined to a specific segment of the distribution. Birch & Miller (2006) employ this technique to examine student outcomes for five different quintiles of students grouped by the Tertiary Entrance Rank (TER) score.

In this study, there are major errors in the recording of TER scores in the VU database. Instead, the Australian Bureau of Statistics measure of socio-economic status (SES) from the 2006 Census is used as an alternative measure of cognitive ability. This indicator is an estimate of parental earnings that is often used in the labour economics literature as a proxy for ability (Messinis, 2009). Thus, this SES index is employed to construct five quintiles[6] of Victoria University students in each sector.[7]

The set of potential determinants of student progression consists of continuous and indicator variables.[8] The former includes age, age squared (the latter accounts for diminishing age effects) and socio-economic status (SES).[9] As indicator variables, the following are considered:

- gender that takes the value of one if male and zero if female, age and age squared (the latter accounts for diminishing age effects);

- full-time or part-time employment;

- full-time studies, and participation in elite high schools (mainly private schools plus two elite government schools);[10]

- first-generation Australians (1G) born in an English-speaking country (ESOB);

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5   For details and literature references, see Messinis (2009).

6   A quintile is a group of students that constitute 20% of the total population ranked according to the values of a variable, say SES. The 1st quintile is the bottom 20% in the SES distribution while the 5th quintile is the top 20%.

7   That is, higher education and VET students are segmented separately.

8   These take the value of one if the condition applies and zero if otherwise.

9   The Australian Bureau of Statistics SEIFA index of relative socio-economic advantage from the 2006 Census is employed in this study.

10   These consist of the top eleven independent schools plus two government schools: MacRobertson Girls High and Melbourne High.

- first-generation Australians born in a non-English-speaking country (NESOB);
- second-generation Australians (2G) from Greek background;[11]
- second-generation Australians (2G) from Italian background;
- second-generation Australians (2G) from other cultural backgrounds;
- first-generation Australians who speak a language other than English (LOTE) at home;
- second-generation Australians from Greek or Italian background with a LOTE;
- other second-generation Australians with a LOTE.

Note that the indicator variables capture the difference in progression rates between the group represented by the indicator variable and the rest of the students who are also called the reference group. To clarify things, suppose the focus is on the first-generation NESOB students and the regression coefficient is -0.05. This can be interpreted to mean that this particular group performs worse (negative sign) by 5% when compared to the reference group which is all other students, including the third-generation (3G), those born in Australia with both parents also born in Australia.

Empirical results

Students' characteristics

Table 1 summarises the profile of higher education and VET Australian students by educational and socio-economic indicators for 1G, 2G and 3G (i.e., students with both parents born in Australia). With respect to education, the table reports the percentage of students with 100% success rate, the share of students in full-time studies, in health/welfare studies, business studies, and the incidence of LOTE amongst all seven groups. Table 1 also reports the share of students from elite high schools, "low SES" defined here as those students with a SEIFA relative index score of less than 9.63 (the lowest 25% in the Greater Melbourne region), low parental education and occupational status (EOS), in full-time work and not-in-employment (unemployed or not-in-the-labour force).

Table 1 suggests that the average first-generation Greek student in higher education has a much lower progression rate than all other groups. Also, first-generation Greek or Italian students tend to enrol more in part-time studies than other university students. Of the second-generation, it is only students of Italian background that come close to the progression rates recorded by the third-generation. There are

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[11] This group includes students of Greek ancestry whose parents were born in Egypt and Cyprus but excludes the latter when the student reports to be a Muslim.

also differences in study preferences with students of NES background undertaking business studies rather than health and welfare studies. Further, about 73% of second-generation Greek students report a LOTE at home which is the highest incidence amongst the second-generation, and even higher than first-generation Italians, in both tertiary sectors.

Table 1. Generations of Australian Students at Victoria University: 2007

	1G: NESOB			2G: NESB			3G
	Greek	Italian	Other NESB	Greek	Italian	Other NESB	ALL
HIGHER EDUCATION SECTOR							
Progression rate (%)	75.0	89.3	84.5	80	84.6	80.4	86.2
Full-time studies (%)	55.0	52.6	75.1	71.6	71.3	75.6	75.7
Health/Welfare studies (%)	37.5	44.7	18.5	42.1	46.9	45.1	62.2
Business studies (%)	35.0	44.7	60.1	45.7	41.1	41.1	27.8
LOTE Incidence (%)	95.0	71.1	90	73.1	44.8	62.4	1.5
Elite High School (%)	0.0	0	0.4	2.3	0.6	1.9	2.9
Low Parental SES: (%)	23.5	14.3	34.8	16.9	15.2	25.4	14.6
Low Parental EOS: (%)	14.7	3.6	22.7	9.9	5.7	14.2	7.9
Full-time employment (%)	20.0	31.6	8	18.5	18	14.6	18.4
Not-in-employment (%)	40.0	55.3	72.8	29.7	23.8	36.2	25.5
No. of observations	40	38	8,522	475	638	3,367	5,519
VET SECTOR							
Progression rate (%)	82	80	81.6	85.2	85.2	83.1	83.5
Full-time studies (%)	9	8.6	18.1	18.2	15.5	17.2	13.6
Health/Welfare studies (%)	44.8	31.4	44.5	33.7	41.1	30.3	39.7
Business studies (%)	9.0	14.3	10.1	11.3	10.2	14.2	10.7
LOTE Incidence (%)	83.6	68.6	91	69.3	36.2	49.3	2.1
Elite High School (%)	0	0	0.1	0.2	0.2	0.5	1
Low Parental SES: (%)	26.9	18.5	43.8	24.1	16.5	27.8	21.5
Low Parental EOS: (%)	19.4	10.8	29.7	15.4	8.2	15.4	12.5
Full-time employment (%)	28.4	34.3	12.6	34.4	43.1	32.3	40.9
Not-in-employment (%)	38.8	37.1	74.2	36.1	28.2	41.3	30.7
No. of observations	67	70	6,436	407	636	3,496	6,546

Note: 1G, 2G, 3G, ESOB NESOB, ESB, and NESB stand for first-generation, second-generation, third-generation, English speaking overseas born, non-English speaking overseas-born, English speaking background, and non-English speaking background respectively. The 2G groups are persons born in Australia with at least one parent born overseas. The 3G groups are persons who were born in Australia with both parents born in Australia. SES and EOS are the ABS Census 2006 SEIFA indices of relative Economic Resources and relative Education and Occupational Status respectively.

Source: Victoria University VISUS Database, 2007.

Multivariate analysis: Quintile regressions

Table 2 presents regression estimates for higher education students in 2007. There are separate regressions for five different quintiles[12] of SES by tertiary sector. The main purpose of this segmentation is to minimise selection bias that could arise as a result of diverse socio-economic backgrounds amongst different groups of students that may distort group comparisons. For example, if Greek students come to VU from a much lower SES than other students, a regression of all students could show that Greek students under perform. However, this could be just the result of a selection bias due to the fact that only a very selective (relatively to other students) group of Greek students is represented at VU. This selection bias can be minimised if only students of similar ability or similar socio-economic background are included in regressions (Messinis, 2009). Thus, we slice the student population at VU in five groups each representing 20% of the total according to the SES variable in ascending order.

Table 2. Students Progression at Victoria University in Higher Education, 2007

Variables	1st Quintile	2nd Quintile	3rd Quintile	4th Quintile	5th Quintile
Constant	-0.131**	-0.136**	0.211	-0.139**	-0.115*
Male	-0.071**	-0.077**	-0.059**	-0.051**	-0.036**
Age	0.009**	0.016**	0.014**	0.028**	0.021**
Age2/100	-0.007	-0.023**	-0.018**	-0.035**	-0.027**
Socio-Economic Status	0.031**	0.024**	-0.017	0.122**	0.012
Full-time Employee	0.045**	0.028**	0.042**	-0.003	0.017
Part-time Employee	0.020**	0.002	-0.001	0.018*	0.010**
Full-time Studies	0.095**	0.075**	0.073**	0.062**	0.024**
Elite High Schools	-0.016**	-0.104**	0.039**	-0.014**	0.012**
1G: ESOB	-0.124**	0.110**	0.021**	-0.056	0.001
1G: NESOB	-0.105**	-0.056**	-0.007	-0.117**	-0.057**
2G: NESB, Greek	-0.027**	-0.033**	0.002	-0.042**	-0.048**
2G: NESB, Italian	-0.011	-0.004	0.021	0.044**	-0.013
2G: NESB, Other	-0.104**	0.001	-0.038**	-0.051**	0.022**
LOTE: 1G, NESOB	0.008	-0.004	-0.068**	0.021**	-0.019
LOTE: 2G, South Europe	0.059**	-0.045**	0.023	0.018**	-0.130**
LOTE: 2G, NES Other	0.004	-0.054**	-0.025**	0.033**	-0.091**
Observations	2,608	2,606	2,607	2,607	2,607

Note: standard-errors in parentheses. * and ** denote significance at 5% and 1% respectively. Quintiles are defined by Socio-Economic Status (SES). See Table 1 for variable definitions.

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[12] Quintiles are groups of students that constitute 20% of the total population each. See footnote 6 in the previous section for details.

Table 2 presents estimates of the marginal or partial effects of each variable assuming that other variables are constant. The coefficient shows by how much progression rate changes if the explanatory factor changes by one unit and it may be negative or positive depending on the impact of the specific factor on academic progress. A negative coefficient suggests that the variable in question has an adverse effect on student progress. A coefficient estimate can be statistically significant at 5% or 1% level (i.e., one or two asterisks respectively) where the latter signifies a much stronger result in statistical terms. Note also that in case of an indicator variable such as "Male", a negative coefficient suggests that males under perform compared to the reference group of females.

The results in Table 1 show that the following factors have a statistically significant impact on progress rates:

- *gender*: male students tend to have lower progress rates than female students;

- *age*: there is a significant positive but diminishing effect of age on progression;

- *socio-economic status*: there is a strong positive link between socio-economic status and progress rates, especially for the lower socio-economic groups;

- *engagement in employment*: employment impacts positive on progression with full-time employment having a stronger effect;

- study load: full-time studies associate with higher progress rates than part-time studies and students from lower SES benefit most from full-time studies;

- *high-school background*: with the exception of the top 20% SES group, students who participated in elite high schools seem to under perform, a result that is consistent with previous evidence (Birch & Miller, 2006);

- *cultural and linguistic diversity* (CALD): a lower than average success rate is observed in most 1st generation of NES background and second-generation Greek students but this is not the case amongst Italian students. Other second-generation students also seem to be disadvantaged. In addition, most university students of NES background seem to under perform when the negative effects of LOTE is also considered.

For VET students, many of the results for higher education students remain, but there are some differences, see Table 3. For VET students, progression rates do not increase with age and are even positively related to the male gender for the top SES groups. Socio-economic status is again related to student outcomes but a much stronger result is the positive effect of employment on progression. Furthermore, although to a less extent than in the higher education sector, study intensity also assists progression. In contrast to university students, VET students from elite high schools seem to perform much better than others. This may be due to the fact that VET students have a much lower SES background than higher education students while elite high school students

Table 3. Students Progression at Victoria University in VET, 2007

Variables	1st Quintile	2nd Quintile	3rd Quintile	4th Quintile	5th Quintile
Constant	-0.083	-0.197**	-0.157**	0.053	0.609**
Male	-0.015**	0.015	-0.001	0.017**	0.018**
Age	0.004	0.001	-0.000	0.000	0.002
Age2/100	-0.003	-0.001	0.001**	0.002	0.001
Socio-Economic Status	0.024**	0.134**	0.049	0.011	-0.021**
Full-time Employee	0.045**	0.066**	0.091**	0.053**	0.075**
Part-time Employee	0.070**	0.017**	0.030*	0.034**	0.025**
Full-time Studies	0.056**	0.078**	0.050**	0.036*	0.046**
Elite High Schools	-0.061	0.103**	0.080**	0.009	0.036**
1G: ESOB	0.070**	0.000	-0.012**	0.036**	0.015*
1G: NESOB	-0.022**	-0.027	0.022	-0.051**	0.027**
2G: NESB, Greek	0.146**	0.083**	0.093**	-0.068**	0.006
2G: NESB, Italian	0.128**	0.092**	-0.013	0.046**	-0.019
2G: NESB, Other	0.015	0.006**	0.019**	-0.020*	-0.021**
LOTE: 1G, NESOB	-0.002	-0.051**	-0.049	0.008	-0.078**
LOTE: 2G, South Europe	-0.146**	-0.155**	-0.094**	-0.034	-0.007
LOTE: 2G, NES Other	-0.020	-0.019*	-0.023**	0.006	-0.011
Observations	2,934	2,948	2,940	2,940	2,939

Note: standard-errors in parentheses. * and ** denote significance at 5% and 1% respectively. Quintiles are defined by Socio-Economic Status (SES). See Table 1 for variable definitions.

tend to associate with a higher SES. An English-speaking background amongst the first-generation seems to boost academic progression at VET. Interestingly, most second-generation students of NES background tend to perform better than others, especially those from relatively low SES. However, this advantage disappears when 2G students report to have a LOTE at home. Thus, we again find that students with a LOTE seem to under perform in both higher education and the VET sector.

Conclusion

This paper utilises unit record student data to examine the key drivers of student academic outcomes at Victoria University in 2007. The study focuses on the relative performance of second-generation Greek-Australians and Italian-Australians, at both the university and VET level. The study employs Australian Bureau of Statistics Census 2006 data at the Census Collectors Districts (CCDs) level, to arrive at student specific estimates of socio-economic background. It also controls for factors that have been previously identified in the literature and compares students of similar socio-economic background in order to account for selection bias.

This study has documented several key determinants of student progression. In higher education, females, mature students, students in employment or in full-time studies or from higher socio-economic status (SES) exhibit higher success rates than others. On the other hand, the following groups of students seem to under-perform: first-generation students from NES background and second-generation Australians, with those having a LOTE being especially vulnerable.

In the VET sector, there is little evidence of age or gender being important factors for academic performance but labour market engagement, full-time studies, elite high school background and English-speaking amongst the first-generation of Australians unambiguously enhance student progression. Although non-English speaking (NES) at home still associates with relatively weak performance, NES ancestry per se seems to be an advantage.

Finally, the study has important policy implications. The Bradley (2008) report strongly emphasised the disadvantage students of socio-economic background face in tertiary education but had neglected to consider cultural diversity and the role LOTE may play in shaping student outcomes. Previous work has also highlighted the high educational attainment of second-generation students but has ignored selection bias due to diversity in participation rates at tertiary level or in socio-economic background. When selection bias is taken into account, it becomes clear that second-generation students at Victoria University are at a disadvantage. Yet the results here should be interpreted with caution, for quantile regressions are not a full-proof solution to selection biases or the sorting of student groups into different specialisations. Finally, it remains to be seen whether these results hold for other tertiary institutions.

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