Do International Business Students Who Are Studying in Australia Have Similar Academic Outcomes? A Comparison of Undergraduate and Postgraduate Students

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Abstract

The paper explores the characteristics of business students studying in Australia. A total of 1907 students (1033 undergraduate and 874 postgraduate students) are included in the study between 2012 and 2016. These students are either from a higher education (tertiary) private provider of undergraduate business courses or from one of the Australian universities studying at the postgraduate level. The paper attempts to examine if there are similarities in undergraduate and postgraduate business student outcomes that could be attributed to country of origin and gender. The paper argues that the human capital pursuit among international business students studying in Australia is similar due to the linkages between immigration, labor market and education policies. These linkages might have facilitated the perceived risk-return relationship of studying in Australia and as a result led to attracting similar (international) students studying at the undergraduate and postgraduate levels. Ordinary least squares (OLS) models' results suggest that gender and country of origin are important in predicting success. In particular, being female is positively related to academic success and certain student groups dominate the international students' landscape in Australia.

Keywords: human capital, international students, cultural diversity, student outcomes

1. Introduction

Diversity within universities has increased significantly over the past 150 years (Diamond & O'Brien-Malone, 2018). In Australia, over the last two decades, tertiary classrooms have

become increasingly more diverse where domestic students and international students are studying together (Moore & Hampton, 2015; Sweeney *et al*., 2008). Increasing global demand for education contributes to this diversity and as a result, entry requirements to undertake undergraduate and postgraduate studies in Australia had changed with the recognition of prior learning (RPL) in tertiary education (i.e., credit transfer or advance standing).

Andersson *et al*. (2013, p. 405) defined RPL as 'a phenomenon with a certain variation in practices as well as contexts, concepts, and conceptions'. The authors also mentioned three contexts where RPL is used: educational system, working life and the third sector which refers to non-government and not-for-profit organizations. The first context is important in this study (i.e., the last two contexts are not discussed in this paper) since international students' previous study and work experiences fall under RPL and assessed when applying to study in Australia. Hence, the paper emphasizes on the utilization of RPL within the educational system and is defined as the 'basis of admission as well as the acceptance of credits or granting of advance standing, particularly in secondary adult education and in tertiary education, including vocational education and trading' (Andersson *et al*., 2013, p. 405).

Postgraduate study in Australia starts from a graduate certificate and RPL is utilized especially if the students do not possess an undergraduate degree. For mature-aged undergraduate students, RPL is also considered when evaluating their applications. The present study argues that the human capital pursuit among international business students either studying undergraduate or postgraduate courses could be similar due to the linkages between immigration, labor market and education policies in Australia. In particular, the paper attempts to examine if there are similarities in undergraduate and postgraduate business student outcomes that could be attributed to country of origin and gender. The paper is organised as follows: Section II discusses recent literature relevant to this research. Section III presents the data and methodology used in the study. Section IV outlines the results and Section V discusses the main findings of the study.

2. Background

The federal government in Australia opened tertiary education to international students in 1986. Before 1974, most overseas students were sponsored under the Colombo Plan, other government schemes, by their own governments or paid the same fees as Australian students (Australian Bureau of Statistics [ABS], 1995). In 1994, there were 93,722 international students in Australia and by 2020 their numbers had increased to 882,482 (Department of Education, Skills and Employment [DESE], 2021). This suggests that international student numbers increased more than nine-fold in the last 25 years. As a result, 23.4 per cent of the total university population in Australia in 2019 is comprised of international students. In New South Wales, the University of Sydney has the highest proportion of international students at 42.2 per cent while the University of New England, a regional university, has the lowest proportion at 4.2 per cent (DESE, 2020).

Fox (2005) acknowledged the changing policy environment for Australian universities, however questioned the appropriateness of using RPL. The author argued that university

education is different from other tertiary sectors such as vocational education. Nevertheless, Australian universities and the tertiary sector have embraced RPL (Pitman, 2009). Pitman, Koshy and Phillimore (2015) examined whether education quality between 2009 and 2011 decreased, when supply increased significantly, as Australian universities removed limits to undergraduate domestic student places in 2012. The authors utilized three proxies of educational quality: (1) prior academic achievement of the student, (2) attrition and retention rates; and (3) progression rates, to establish whether educational quality declines when supply is significantly increased. The study suggested that widening access resulted in more students with lower levels of academic achievement entering higher education but did not necessarily equate to a lowering of educational quality.

Currently, majority of the international students studying in Australia and New Zealand are considered belonging to a collectivist culture as opposed to an individualistic culture (Baker & Clark, 2010; Li & Campbell, 2008; Moore & Hampton, 2015; Popov *et al*., 2012). In July 2021, there were 545,541 international students in Australia, 29 per cent from China and 18 per cent from India (DESE, 2021). Since Australian universities could determine the number of student places they offer, both undergraduate and postgraduate student numbers have increased.

Three studies in the literature provided a chronological account of the linkages between the immigration, education, and labor sectors in Australia (Gregory, 2015; Tani, 2012; Teicher, et al. 2002). Firstly, Teicher, Shah and Griffin (2002) examined Australian immigration focusing on labor market and industrial relation issues in the late 20th century. Migration policy in Australia prior to 1998 was humanitarian where there was no systematic labor market targeting in place. The shift in migration policy after 1998 highlighted the intention to link immigration to skill-based selection. The authors suggested that despite the labor market links to immigration, immigrants from non-English speaking countries were still discriminated upon. The study also noted the increasing deregulation of the labor market sector during this period. Secondly, Tani (2012) analyzed the impact of the change in Australia's immigration policy in 1999 which was made stricter in terms of age, language ability, education, and work experience. The probability of over/undereducation under the new policy was analyzed as a function of individual and labor market characteristics for two cohorts of immigrants entering Australia in 1993-1995 and 1999-2000. The study concluded that the policy appeared to have reduced the education mismatch in Australia's labor market. Lastly, Gregory (2015) examined the Australian immigration program during the 1980s and 1990s and over the last two decades (1995-2015). The study utilized a two-step framework: (1) the first step was for skilled or potentially skilled migrants to obtain temporary immigrant status to work or study in Australia while (2) the second step was to use the first step to strengthen qualifications for permanent residence status via the skilled migrant stream which in 2015 accounted for 60 per cent of permanent migrant places (Gregory, 2015). The study concluded that this two-step approach which defined the period between 2000 and 2015 had an impact on the labor market only within immigrants from non-English speaking (NES) background (i.e., international students). As a result, the high unemployment rates amongst NES just after arrival, which were typical two and three decades ago, had been replaced by

rapidly increasing part-time employment over the first three or four years after arrival (Gregory, 2015). Moreover, the author noted that temporary visas (e.g., student visas) were uncapped while permanent visas were capped and therefore, could have had widespread ramifications.

Stenberg (2021) explored the link between immigration and education policies in Australia using expected utility theory among undergraduate international students. The return to education is perceived to be much higher than the risks and costs associated with studying in Australia. Hence, the linkages between Australian immigration, labor market and education policies might have facilitated the perceived risk-return relationship of studying in Australia by international students and could lead to attracting similar students studying at the undergraduate and postgraduate levels.

3. Data and Methodology

The present study uses business student data from two higher education institutions in Sydney, a university, and a private tertiary education provider. The paper compares the academic outcomes for business students studying undergraduate or postgraduate courses especially when there is a perceived link between securing a student visa and the path to permanent residency. The present study follows from the literature supporting expected utility and human capital theory in explaining overseas students' movement and the prevalence of private demand for higher education (Belzil & Hansen, 1999; Lauer, 2002a; Lauer, 2002b; van der Merwe, 2010).

The general model includes dummy variables to identify the different student groups based on country of origin and gender. Two separate regression models are utilized to examine if gender and country of origin could predict academic success among undergraduate and postgraduate international business students. The data sets are not combined since the country-of-origin classifications are slightly different between the private tertiary education provider and the university due to student composition. The two ordinary least-squares (OLS) models are as follows:

$$
\begin{aligned}
Academic\ success_{PG} = {} & \beta_0 + \beta_1(East\ Asia) + \beta_2(Oceania) + \\
& \beta_3(SEAsia) + \beta_4(ROW) + \beta_5(female) + \\
& \beta_6(WAM) + \varepsilon
\end{aligned}
\tag{1}
$$

$$
\begin{aligned}
Academic\ success_{UG} = {} & \beta_0 + \beta_1(East\ Asia) + \beta_2(Europe) + \\
& \beta_3(SEAsia) + \beta_4(SAmerica) + \beta_5(ROW) + \\
& \beta_6(female) + \beta_7(AS) + \varepsilon
\end{aligned}
\tag{2}
$$

    where: East Asia, Europe, SEAsia, SAmerica, ROW - country of origin

                                     dummy variables =1, 0 otherwise

    gender - female = 1, 0 otherwise

WAM – first-year postgraduate weighted average mark

AS – Advance Standing or number of credit transfer

For the university data set containing second-year postgraduate students in 2016, there are five student groups (i.e., Oceania, East Asia, Southeast Asia, South Asia, Rest of the World) while for the private tertiary education provider data set containing undergraduate students collected between 2012 and 2015, there are six student groups (i.e., Europe, East Asia, Southeast Asia, South Asia, South America, Rest of the World). To make the regression results comparable, male students coming from South Asia are set as the base group for both models.

Table 1. Student Composition (University)

Regions	Student Numbers	Percentage of total	Percentage of males
Oceania	143	16.36	57.34
East Asia	478	54.69	45.2
Southeast Asia	58	6.64	41.4
South Asia	149	17.05	73.2
Rest of the World	46	5.26	52.2
Total	874		

Source: Author's calculations

Table 2. Student Composition (Private Tertiary Education Provider)

Regions	Student Numbers	Percentage of total	Percentage of males
East Asia	40	3.5	60
Southeast Asia	342	30	40
South Asia	674	59	90
Europe	35	3.0	42.9
South America	27	2.4	44
Rest of the World	20	1.8	70
Total	1138		

Source: Author's calculations

Using OLS regression analysis, the average final mark is chosen as the dependent variable to examine whether gender and country of origin could predict student academic performance given the link between immigration and education policies in Australia. Table 1 summarizes the university data set collected in 2016 Autumn and Spring semesters. It shows the five regional classifications used in the regression models and they are as follows: East Asia comprised of 478 students where 216 are male, Southeast Asia comprised of 58 students where 24 are male, South Asia comprised of 149 students where 109 are male, Oceania (i.e., domestic students) comprised of 143 students where 82 are male and students from the rest of the world (i.e., 46 students, 24 are male) mainly from the Americas, Europe, and Middle East. It should be noted that in three out of the five regions, there are more male students than female with South Asia having the highest proportion at 73.2 per cent.

Similarly, Table 2 summarizes the data from the private tertiary education provider collected between 2012 and 2015 where three out of the six regions are also predominately male. Tables 1 and 2 suggest business students studying in Australia either as an undergraduate or a postgraduate student are, on average, male and the majority comes from East Asia, South Asia and Southeast Asia. Interestingly, East Asian students dominate the university data set and South Asian students dominate the private tertiary higher education data. The composition of students in tertiary institutions is influenced by migration agents attached to these institutions.

4. Results

The paper attempts to examine if there are similarities in undergraduate and postgraduate business student outcomes that could be attributed to country of origin and gender regardless of higher education provider. All results are corrected for heteroskedasticity using Huber-White (H-W) standard errors.

Table 3. OLS Regression Results (University)

Variable	Revised model with WAM (H-W)	Revised model w/o WAM (H-W)
Intercept	1.09 (2.188)	61.15*** (1.216)
East Asia	3.53*** (0.814)	3.70*** (1.354)
Oceania	-1.18 (1.155)	2.40 (1.752)
Southeast Asia	2.41* (1.406)	9.13*** (2.260)
Rest of the World	3.83*** (1.455)	15.82*** (2.397)
Gender (1=Female)	-0.03 (0.587)	2.53*** (0.925)
WAM	0.99*** (0.033)	
	n=874 Adj R-squared = 0.63 F-Stat = 246.09	n=874 Adj R-squared = 0.07 F-Stat = 14.37

Notes: *** denotes statistical significance at 1%, ** statistical significance at 5% and * statistical significance at 10%

Table 3 shows the results for the Australian university second-year postgraduate business students using two models, one with first-year postgraduate weighted average mark (WAM) and the other without. The correlation coefficient between the average final mark, the dependent variable in the regression model, and WAM, one of the regressors, is 0.78. To evaluate which factors are important in determining academic success, the results of the two models are compared by dropping the independent variable, WAM. The intercept, gender and 'domestic' (i.e., Oceania) students have coefficients that are insignificant at 10% while WAM, East Asia and the Rest of the World have coefficients that are significant at 1%. In contrast, if the variable WAM is dropped, all coefficients including the intercept are significant at 1% except for Oceania. This could suggest that international students in their second year of postgraduate studies are performing better than domestic students. Hence, regardless of risk-reward perceptions, international students in their second year of study strive to achieve academic success since it is a major requirement to stay in Australia.

Table 4. OLS Regression Results (Private Tertiary Education Provider)

Variables	Revised model with credit transfer (H-W)	Revised model w/o credit transfer (H-W)
Intercept	34.15*** (1.016)	34.78*** (0.819)
East Asia	-1.60 (4.089)	-1.61 (4.065)
Europe	13.49*** (3.641)	13.64*** (3.626)
SEAsia	9.61*** (1.555)	9.59*** (1.556)
SAmerica	9.34*** (3.566)	9.08** (3.546)
ROW	14.78*** (3.781)	14.84*** (3.759)
Gender (1=Female)	10.79*** (1.491)	10.89*** (1.494)
Credit Transfer	0.15 (0.013)	
	n=1033 Adj R-squared = 0.157 F-Stat = 28.42	n=1033 Adj R-squared = 0.157 F-Stat = 32.93

Notes: *** denotes statistical significance at 1% and ** statistical significance at 5%

Table 4 shows the results for the undergraduate business students enrolled in a private tertiary education provider. Instead of WAM, the number of advance standing (or credit transfer) is

included in the regression model. A total of 636 advance standings were granted between 2012 and 2015 and 71% (452 out of 636) where awarded to students coming from following countries: Pakistan (26%), Philippines (16%), Vietnam (12%), Bangladesh (11%) and India (7%). Remember, the composition of students in private tertiary institutions is determined by migration agents. As shown in Table 4, the results between the two models are similar where most of the coefficients are significant at 1% except for South America in the second model (without the credit transfer) which is, instead, significant at 5%, whereas the coefficients for East Asia in both models are insignificant (i.e., this might be due to its small proportion at 3.5 percent of the total sample). The number of advance standing (or credit transfer) is also insignificant in both models, which could suggest that academic success in Australia among undergraduate students could not be explained by RPL.

5. Discussion and Conclusion

The tertiary education sector in Australia has been undergoing structural changes over the last two decades from government funding reduction, increasing international student numbers, proliferation of private tertiary education providers and workforce casualization of teaching staff (May, *et al*., 2013; Tertiary Education Quality and Standards Agency [TEQSA], 2018; Wells Advisory [WA], 2018). International education is one of the top exports for Australia where its contribution is estimated at A\$24.1 billion in 2015-2016 (ABS, 2020). It has become Australia's third largest export after iron ore and coal at A\$30.8 billion in 2017 (Department of Education and Training [DET], 2018) which coincided with changes in government funding within Australian universities (Universities Australia [UA], 2019).

The present study highlights the similarities between undergraduate and postgraduate international business students in Australia whether they are from a university or a private tertiary institution. Since majority of the student groups in Australia comes from two countries, China and India, and Universities Australia (2020) claims that 50.4 per cent are male, it is imperative to examine if country of origin and gender are key factors in predicting academic success. On one hand, the regression results for the postgraduate business students at a university suggest that being a domestic student (i.e., belonging to student group Oceania) does not guarantee academic success. However, being female could predict academic success after removing WAM, the grade point average achieved during first-year study in Australia. More importantly, the base group, students coming from South Asia and male, on average, could successfully pass their studies. On the other hand, the regression results for the undergraduate students at a private tertiary education provider suggest that the number of advance standing (or credit transfer) is not a significant predictor of academic success. Moreover, the base group, again students from South Asia and male, on average, cannot successfully attain a passing mark as well as students from East Asia (albeit the coefficient is insignificant). In contrast to students coming from other groups (not South or East Asia), being female on average, could enhance academic success.

Abstracting from entry requirements and assuming international business students either undergraduate or postgraduate meet those requirements, the proliferation of international students in Australia could be explained by expected utility theory. In other words, the reward

(expected utility) of gaining permanent residency in Australia is perceived to be greater than the risks (as well as costs) of studying in Australia (Stenberg, 2021). Both data sets used have filtered out students who would have failed in their first-year of study and hence, suggest that regardless of the international students' motivations in pursuing education in Australia, tertiary educators have to be aware of the different student groups in their classrooms and should continue to improve their teaching pedagogy.

The regression models used in the present study does not explicitly model risk and return variables but utilized the assumption that international students are aware of the risks associated with studying in Australia (i.e., obtaining and maintaining a student visa) and the return could be substantial (i.e., obtaining permanent residency and eventually citizenship) so long as they could show successful completion of approved courses while on student visas. Given that this could be the case, international students coming to Australia might share similar characteristics and the results of the regression models comparing undergraduate and postgraduate business students seem to support this claim regardless of whether the students are from the university or the private tertiary education sector.

Acknowledgments

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