

# FACTBase

Bulletin 52, April 2017

## Sizing and Mapping Higher Education and Vocational Education and Training in Perth and Peel

Gemma Davis

In Perth and Peel, higher education and vocational education and training (VET) have the capacity to play a pivotal role in developing a more diverse and resilient economy and enabling the region to seize and create new economic opportunities. The international education sector is also a major generator of export revenue and is central to attracting young and talented people to the Perth and Peel region and building international connections.

Previous FACTBase Bulletins (14 – Australia's Smart Cities: A Preliminary Assessment; 25 – Perth's Human Capital Base; and 42 - Perth's Human Capital Base: An Essential Element for the Region's Continued Growth and Competitiveness) examined human capital in the Perth region and emphasised the positive benefits of a skilled population on economic development, wellbeing, growth and competitiveness.

This Bulletin has been prepared as part of the *Bigger and Better Beyond the Boom* project and aims to 'size' and spatially examine the sector in the Perth and Peel regions to quantify the contribution to the regional economy and identify opportunities for economic growth.

### The key findings of this Bulletin are:

- Human capital is critical to growth, creativity and productivity in modern economies, yet from 2001 to 2011 levels of human capital in Perth and Peel were in decline.
- WA's early 21st century resource sector 'boom' is likely to have contributed to declining domestic human capital due to a period in which non-university educated workers were engaged in higher income activities than university qualified workers.
- The education and training sector is important to the economy of the Perth and Peel region. The region accommodates most employment in education and training and an estimated 99% of international students studying onshore are enrolled in Perth and Peel.
- Nodes of employment in education and training in Perth and Peel, which reflect the location of higher education institutions, are more dispersed than in other major metropolitan capitals such as Melbourne and Sydney.
- International education is a major export industry and is important to the economy of WA and the Perth and Peel region, however WA attracts less than its population based 'share' of international students in the higher education and VET sector. While Australia's share of the international higher education student market has increased over the past 15 years, WA's share has been in decline.
- Fields of study in the higher education and VET sector in WA reflect the importance of the minerals and resources sector to the regional economy and data indicates that the proportion of students studying in fields such as Information Technology is disproportionately low. This is important because it is the third most popular field of study for international students in Australia.
- WA is particularly under-represented in the higher education onshore international student market but has a high proportion of offshore student enrolments. Offshore students are an important source of income to local universities but do not deliver the value-added benefits to the local economy that accompany onshore student enrolments.
- WA attracts international students from a diverse range of countries, but Chinese students are under-represented in WA when compared with the Australian average. Interestingly, geographic proximity to source countries does not always correlate with higher enrolments.
- The global international student market is expected to grow over the next 15-20 years, however competition between host countries and cities is also increasing. The Perth metropolitan region is rated below other major Australian capitals as a destination for international students.

## Benefits of Higher Education

As early as the 18<sup>th</sup> century and throughout the 19<sup>th</sup> and 20<sup>th</sup> centuries, scholars including Smith, Friedman, Schultz, Becker, Mincer, Marshall and Heckman examined the economic benefits of human capital described as knowledge or skills that enable people to produce work of economic value (Spring, 2016). This laid the foundation for thinking which promotes education as an economic activity that enables people to gain the skills and knowledge to maximise productivity and increase innovation in the workplace (Spring, 2016).

By the late 1900's, theories of knowledge creation; idea generation; and creativity in the economy and in urban areas were expanded by researchers and urban advocates such as Jacobs (1961) and Florida (2002). Today there is consensus in economic, urban policy, business and government fields that human capital is essential to build and sustain a modern, innovative economy. It is also widely recognised by the public and private sector that the benefits of a qualified, adaptable work force flow directly to graduates as well as to businesses, the wider economy and to urban environments because they deliver liveability benefits such as cultural capital and vibrancy (DAE, 2016).

Looking forward, it is predicted that education, including vocational and life-long education, will be critical to economies as industries and workforces change in response to technological advances (Ernst and Young, 2015). Demographic changes such as an ageing population will also change

the global spatial distribution of people of 'tertiary age' and may increase competition among institutions and cities to attract talented people (British Council, 2013). With a high proportion of the global 'tertiary age' population predicted to be in a small number of countries, including Indonesia and India, (British Council, 2013) Perth and Peel may be well placed geographically to attract international students in coming decades.

### Human Capital in Western Australia

Human capital in the Perth and Peel region has been in decline. In 2001, metropolitan Perth recorded a Human Capital Index (HCI) score of 2.48, the highest of all major metropolitan regions in Australia, however by 2011 this had fallen to 0.74, with Melbourne and Brisbane moving into first and second place respectively (Huddleston, 2015).

Human capital in Perth and Peel in 2011 was also found to differ from other capitals with 27.4% of workers having Certificate III and IV vocational qualifications, Adelaide has the highest proportion at 28%. The region also has lower proportions of residents with a Bachelors' degree, 25.3% of residents in metropolitan Perth compared to more than 28% in greater Melbourne and Sydney (Huddleston, 2015).

Huddleston (2015) and Tonts (2010) attributed differences in the skills of the regional population in metropolitan Perth and Peel to the importance of the resources industries in the Western Australian economy. Huddleston (2015) also noted that, in 2011, workers in Perth and Peel with trades and other qualifications were engaged

in higher income activities than those with university qualifications.

Yet there is also evidence that over the past 15 years Perth and Peel has emerged as an increasingly important knowledge hub for the global minerals and energy resources sector, (Tonts et al., 2012) however this shift is yet to be reflected in the region's human capital base.

### Benefits of Higher Education to Graduates and the Workforce

In 2015, the ABS established that average personal weekly income in Australia increases with the number of non-school qualifications completed. Men working full-time, who held two or more non-school qualifications, earn on average \$813 per week more than their full-time working counterparts without a non-school qualification. Similarly, full-time employed females with multiple non-school qualifications earn on average \$504 per week more than those working full-time without a non-school qualification (ABS, 2015).

2016 research by Cadence Economics further quantified the flow-on benefits of university education to non-graduates and to the wider economy. This established that in Australia the entrance of 1,000 university graduates into the Australian workforce generates 120 new jobs for workers without a university degree. In total, this spill-over is estimated to have created 25,000 new jobs for Australians without a university degree nation-wide in 2014-15. The entrance of university educated workers into the workforce has also been found to boost wages for all workers equating to an increase of 1.12%

or \$655 per annum (Cadence Economics, 2016).

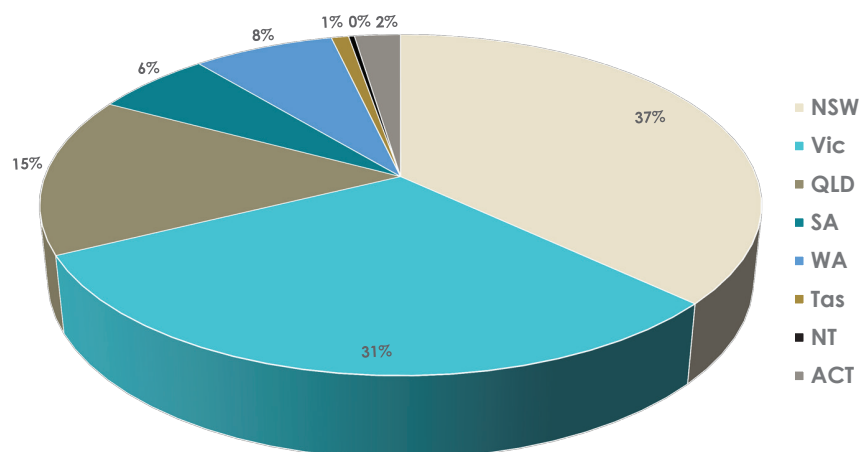
### Economic Benefits of International Education

Significant work has been done to quantify the economic benefits of international education to the Australian and Western Australian economies. In Australia, international education is one of nation's major export industries. In 2014–15, the Australian Bureau of Statistics valued national international education exports at \$18.8 billion, making education Australia's third largest export, while in 2016, research by Deloitte Access Economics on behalf of the Australian government valued the total direct and indirect contribution of international education at \$19.7 billion in 2014-15 (DAE, 2016).

In Western Australia, the international education and training sector is estimated to have contributed between \$1.39 billion and \$1.408 billion in total export revenue in 2015 (approximately 8% of the national total) (Duncan et al., 2016; DAE, 2016). While significant, international education delivers "a lower share of WA's service exports than all other states and territories other than the NT" (Duncan et al., 2016, pp. iii). Up to 99% of export revenue from the international education sector has been estimated to be generated in the Perth and Peel region (DAE, 2016; Ryan, 2013).

The international education sector also directly and indirectly generates 128,385 full-time equivalent jobs in Australia, half of which are generated in New South Wales, and 9,854 (4%) are in Western Australia (Deloitte Access Economics, 2016).

**Figure 1:**  
International Education Export Revenue by State



Source: DAE, 2016

### Contribution of International Education – Higher Education and VET Sector

According to Deloitte Access Economics, the total \$19.7 billion in export revenue generated by the international education sector in Australia includes \$12.453 billion generated by the higher education sector and \$2.923 billion produced by the VET sector (DAE, 2016). These totals incorporate both direct and indirect economic contributions<sup>1</sup>.

The higher proportional contribution of the higher education sector, which makes up approximately 46% of total international student enrolment numbers, is thought to be driven by a combination of average higher fees and longer

lengths of stay by students. This is followed by the VET sector, which makes up 21% of student enrolments and 16% of total contributions (Deloitte Access Economics, 2016).

This finding is supported by Western Australian based analyses undertaken by Duncan et al. (2016) which determined that, higher education accounts for 37% of international enrolments in the state but delivers 67% of the value-added contribution (Duncan et al., 2016, pp. 46). This research also found that family and friends visiting international students based in WA in 2015 "contributed an estimated \$15.5 million in value-added to the WA economy" (Duncan et al., 2016, pp. 47).

<sup>1</sup> Direct contributions measured include expenditure on fees and other goods and services by international students while direct value added incorporates returns to labour in the form of wages and salaries and returns to capital in the form of Gross Operating Surplus (GOS). The direct impact of expenditure of international students on goods and services to employment in the economy was also considered. Indirect contributions include value added and the flow-on activity generated by the international education industry (Deloitte Access Economics, 2016).

**Table 1:**  
**Value Added Contribution of International Students by Sector (WA)**

Sector	Value Added (\$m)	Value Added (%)	Employment (FTE)	Employment (%)	Share of Enrolments (5)
Higher Education	520	67.37	4,890	60.59	36.89
VET	150	20.14	2,070	25.65	30.56
Schools	20	2.40	240	2.97	1.69
ELICOS	50	6.47	510	6.32	26.18
Non-award	30	3.61	360	4.46	4.68
Total	770	100	8,070	100	100

Source: Duncan et al., 2016, pp. 46

## Size and Spatial Distribution of Education and Training in Perth and Peel

The education and training sector makes a significant contribution to the Perth and Peel economy. As shown in Table 2, the locational quotient of the education and training industry was 1.03 in 2011, making it the fifth most important industry in the region (Huddleston, 2014).

**Table 2:**  
**Location Quotients, All Industry Sectors, Selected Australian Cities, 2011**

2011 Industry of Employment	Metro Perth and Peel Region	Greater Sydney	Greater Melbourne	Greater Brisbane	Greater Adelaide
Agriculture, forestry and fishing	0.26	0.15	0.21	0.31	0.40
Mining	2.39	0.12	0.12	0.66	0.41
Manufacturing	0.96	0.95	1.21	1.03	1.16
Electricity, gas, water & waste services	0.96	0.78	0.83	1.04	1.19
Construction	1.18	0.85	0.99	0.99	0.92
Wholesale trade	0.97	1.30	1.24	1.01	0.90
Retail trade	1.00	0.94	1.01	0.96	1.08
Accommodation and food services	0.90	0.96	0.91	0.93	0.95
Transport, postal and warehousing	0.94	1.11	1.01	1.20	0.86
Information media and telecommunications	0.68	1.69	1.27	0.81	0.93
Financial and insurance services	0.79	1.75	1.28	0.90	0.92
Rental, hiring & real estate services	1.15	1.11	0.94	1.11	0.86
Professional, scientific & technical services	1.15	1.32	1.22	1.15	0.87
Administrative and support services	1.01	1.09	1.09	1.03	1.10
Public administration and safety	0.94	0.82	0.75	1.09	1.12
Education and training	1.03	0.95	0.99	1.02	1.03
Health care and social assistance	0.95	0.94	0.95	1.07	1.23
Arts and recreation services	1.02	1.06	1.22	0.88	0.93

Source: Huddleston, 2014

## Spatial Distribution of Education and Training Industry

When mapped spatially, 76% of the total employment in the education and training industry in Western Australia is located within the Perth region. Statistical areas that have been identified as nodes of education and training within Perth and Peel include Bentley-Wilson-St James; Nedlands-Dalkeith; Perth City; Murdoch-Kardinya; Joondalup-Edgewater; Mt Lawley – Inglewood; and Fremantle.

Most statistical areas identified as accommodating between 1% and 5% of total employment

in education and training in the state are home to a major university campus and/or VET campus. As illustrated in Map 1, Bentley-Wilson-St James (4.9%) and Nedlands-Dalkeith (4.7%) are the most significant education and training employment locations and are home to both major university and VET providers (ABS, 2011).

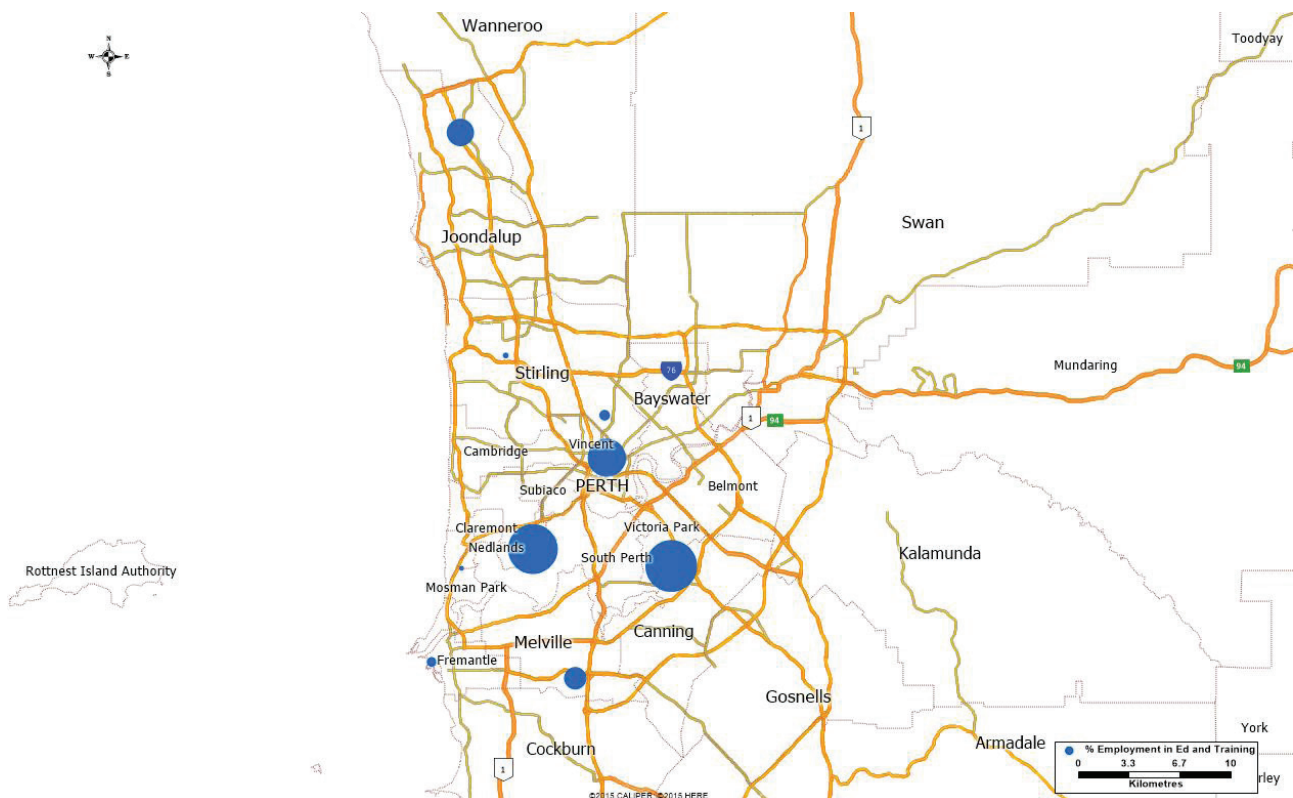
Western Australia's universities are the largest education providers in the state and all five have their main campuses in the Perth and Peel region. Table 3 provides an overview of each of the universities. It shows that

Curtin University is the largest university, while The University of Western Australia is the highest ranked university and the only Group of Eight (Go8) university in the state<sup>2</sup>.

Curtin University has the largest number of regional and offshore campuses. In 2015, 86% of Curtin students were enrolled at the university's Bentley campus (Curtin University, 2016).

<sup>2</sup> The Group of Eight (go8) markets itself as the group of 'Australia's Leading Universities'. They support this claim by referring to statistics relating to variables such as research outputs, industry links, graduate outcomes, and the standing of their academic staff.

**Map 1:**  
Education and Training Nodes in Metropolitan Perth and Peel



Data Source: ABS, 2011



**Table 3:**  
**Characteristics of Western Australian Universities**

University	Student Enrolments/Campus Locations
Curtin University (Curtin)	<p>Student enrolments: 50,648 (2015)                      Ranking: 16<sup>th</sup> in Australia; 306<sup>th</sup> in the world (QS, 2016)                      Campuses:</p> <ul style="list-style-type: none"> <li>• Bentley (main campus)</li> <li>• Perth City (Curtin Graduate School of Business)</li> <li>• Kalgoorlie (Curtin WA School of Mines)</li> <li>• Margaret River Education Centre</li> <li>• Sydney</li> <li>• Curtin Sarawak, Malaysia</li> <li>• Curtin Singapore</li> </ul> <p>Research Income: \$87,467,993 (2015)                      Research Excellence Ranking: 26<sup>th</sup> in Australia (ERA)</p>
Edith Cowan University (ECU)	<p>Student enrolments: 26,937 (2015)                      Ranking: 31<sup>st</sup> in Australia; 701+ in the world (QS, 2016)                      Campuses:</p> <ul style="list-style-type: none"> <li>• Mt Lawley (main campus)</li> <li>• Joondalup</li> <li>• South-West (Bunbury)</li> </ul> <p>Research Income: \$15,052,315 (2015)                      Research Excellence Ranking: 29<sup>th</sup> in Australia (ERA, 2012)</p>
The University of Western Australia (UWA)	<p>Student enrolments: 25,133 (2015)                      Ranking: 7<sup>th</sup> in Australia; 102<sup>nd</sup> in the world (QS 2016)                      Campuses:</p> <ul style="list-style-type: none"> <li>• Crawley</li> <li>• Claremont</li> <li>• Albany</li> </ul> <p>Research Income: \$195,081,287                      Research Excellence Ranking: 6<sup>th</sup> in Australia (ERA, 2012)</p>
Murdoch University (Murdoch)	<p>Student enrolments: 23,241 (2015)                      Ranking: 24<sup>th</sup> in Australia; 501-550 in the world (QS, 2016)                      Campuses:</p> <ul style="list-style-type: none"> <li>• South Street Murdoch</li> <li>• Peel (Mandurah)</li> <li>• Rockingham</li> <li>• Singapore</li> <li>• Dubai</li> </ul> <p>Research Income: \$20,940,996 (2015)                      Research Excellence Ranking: 23<sup>rd</sup> in Australia (ERA, 2012)</p>
University of Notre Dame Australia (UNDA)	<p>Student enrolments: 11,766 (2015)                      Ranking: Not included on QS rankings                      Campuses:</p> <ul style="list-style-type: none"> <li>• Fremantle</li> <li>• Broome</li> </ul> <p>Research Income: \$1,508,646                      Research Excellence Ranking: 29<sup>th</sup> in Australia (ERA, 2012)</p>

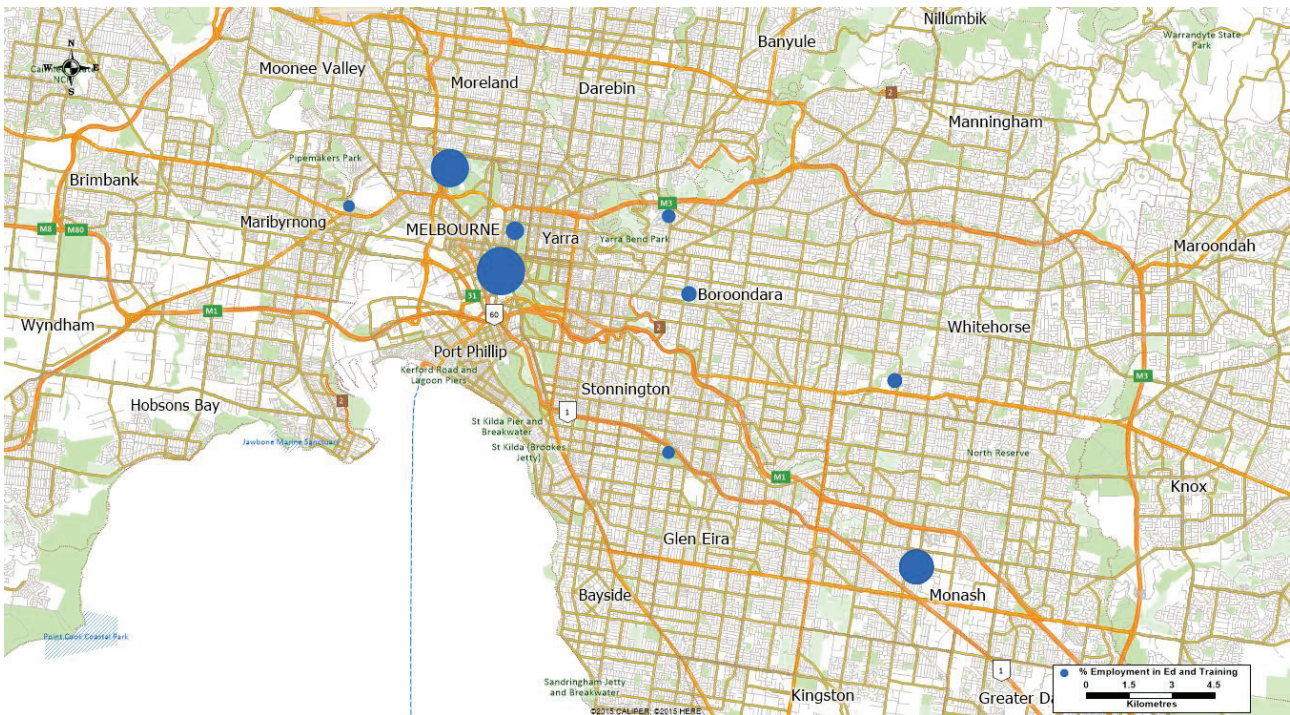
When education and training nodes in the Perth and Peel region are compared with those in metropolitan Melbourne and Sydney, key nodes in the Perth and Peel region have been found to accommodate a higher proportion of total state employment in education and training, reflecting the concentration of the sector in the Perth region.

It is also apparent that education and training nodes in the Perth and Peel region are more dispersed than other metropolitan regions, with the largest two nodes being outside

the Perth central business district (CBD), whereas in Melbourne and Sydney the CBD is the primary education and training industry node. The dispersal of employment in education and training in the Melbourne region is shown in Map 2.

Map 2 depicts 10 major education and training employment nodes with all nodes located within approximately 20km of the Melbourne CBD, and the three primary nodes accommodating between 2.8% and 3.9% of total employment in education and training.

**Map 2:**  
**Education and Training Nodes in Metropolitan Melbourne**



Data Source: ABS, 2011

## Sizing Higher Education and Vocational Education and Training in Western Australia

This section aims to 'size' and identify the unique characteristics of the higher education and VET sector in Western Australia by examining research income; the Full-Time Equivalent Student Load; student numbers; broad disciplines of study; proportions of onshore and offshore students; and levels of human capital in the region.

It relies on three key sources of data:

1. Australian Government Department of Education and Training, Selected Higher Education Statistics 2002-2015. This includes university and non-university higher education providers.
2. Australian Government Department of Education and Training, Research Income and Higher Degree Research Completions Data 2014-2015.
3. National Centre for Vocational Education Research (NCVER), total VET students and courses 2015. It is noted that year on year comparisons have not been made using this data due to changes to training providers classified.

### Higher Education Research Income

Research is a primary role of the higher education or university sector. The research activities of universities are known to lead to knowledge discovery and adoption and provide crucial support for the nation's innovation system. Research is also known to contribute to technological progress in a region through innovation and entrepreneurship and generating considerable contributions in

the form of knowledge spillovers, spin-off technologies and companies.

As outlined above, Western Australia is home to five universities. The University of Western Australia is the most prominent research institution in Western Australia and generated 61% of total university research income in the state in 2015 (DET, 2015a).

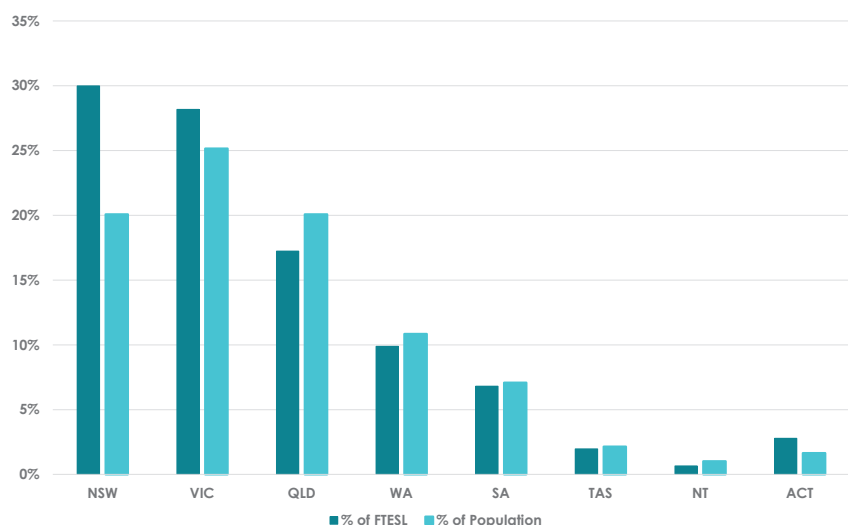
When compared at a national level, Western Australian universities have been found to generate 8.6% of total national university research income. This compares to 27% generated by universities in NSW; 26% generated by Victorian universities; 17% by universities in Queensland; and 8% by universities in South Australia (DET, 2015a).

### Higher Education Full-Time Equivalent Student Load in Western Australia

Higher education data indicates that, when measured by student load, that is Full-Time Equivalent Student Load (FTESL), higher education institutions in New South Wales (30%) and Victoria (28%) accommodate 58% of FTESL in Australia. This is followed by institutions in Queensland (17%) and Western Australia (10%).

Yet, when the proportion of FTESL is analysed on a per capita basis, higher education data indicates that Victoria, New South Wales and the Australian Capital Territory 'punch above their weight', that is they accommodate a higher proportion of FTESL than the proportion of national population living within these states, while student load in Queensland, Western Australia, South Australia and Tasmania is disproportionately low.

**Figure 2:**  
Proportion of FTESL Per State/Proportion of Population



Source: Department of Education and Training, 2015 and ABS, 2016



## **Student Enrolments – Vocational Education and Training (VET)**

Western Australia attracts a greater share of VET student enrolments than higher education enrolments. Currently, the state accommodates approximately 10.7% of national VET students compared to 24.6% in Victoria; 29.5% in New South Wales; and 24% in Queensland. Statistics indicate that 64% of VET students in Western Australia study within the Perth and Peel region (NCVER, 2016).

Examining government funded VET providers only, enrolments in VET courses in Western Australia appear relatively static since 2004. Yet most students, 66.3%, undertaking VET courses in Western Australia are enrolled with private providers and recent research indicates that the number of private VET providers in Western Australia has increased, building Western Australia's share of the international VET education sector from an estimated 7.5% in 2002 to 9.1% in 2015 (NCVER, 2016; Duncan et al., 2016, pp. 4).

In 2015, there were 454 private VET training providers in Western Australia, 11% of the national total, with a head office located within the state. This compares to 25% in Victoria; 23% in New South Wales; and 30% in Queensland (NCVER, 2016).

## **Broad Disciplines of Higher Education in Western Australia**

When FTESL is examined by broad discipline group, Western Australian institutions are found to accommodate a higher proportion of national student load in the disciplines of Education (13%); Engineering and Related Technologies (12%); and Architecture and Building (12%) than would be expected based on the resident population of the state. This is likely to be

associated with the dominance of mining and resources and construction in the WA and Perth and Peel economy.

Edith Cowan University accommodates the highest share, more than 40% of total student load, in the education discipline while Curtin University dominates student numbers in the fields of Engineering and Related Technologies; and Architecture and Building.

It is also apparent that the proportion of FTESL accommodated by Western Australian institutions in the disciplines of Information Technology and Agriculture and Environmental Related Studies is disproportionately low in Western Australia with institutions in New South Wales, Victoria and Queensland dominating higher education in these fields.

It is noted that Victoria has been identified as a leader in education in the field of Information Technology, delivering 34% of national FTESL in this broad discipline group. This is of particular interest because Information Technology is the third most popular discipline of study among overseas students enrolled at Australian Universities.

## **Fields of Study – Vocational Education and Training**

Broad fields of study in the government funded VET sector in Western Australia mirror those in higher education with dominant fields of study being Engineering and related Technologies; Management and Commerce; Society and Culture; Education; and Architecture and Building (NCVER, 2016).

However, enrolments in VET training packages show that training in Business Service

packages attract the highest number of student enrolments in Western Australia, and nationally, followed by Community Services and Tourism, Travel and Hospitality (NCVER, 2016). Western Australia accommodates between 7.5% to 8.4% of student enrolments in these training packages, however the state attracts a higher share of enrolments in training packages in the fields of Resources and Infrastructure with 14.2% of national enrolments and Metal and Engineering with 18.5% of national enrolments (NCVER, 2016).

## **Higher Education – Domestic, International and Onshore vs Offshore Student Enrolments**

Western Australian higher education institutions accommodate 10% of total international students and FTESL in Australia – a slightly lower proportion than could be expected based on the proportion of the national population living in the state.

Yet what is most striking about the profile of overseas students enrolled in Western Australian institutions is that only 50% study onshore. This compares to 85% of international students enrolled in institutions in New South Wales; 70% of students enrolled in Victoria; 92% of international students in Queensland; and 73% of students in South Australia (HET, 2015).

The proportion of onshore international students studying in Western Australian institutions has declined notably since 2004, with a particularly notable decrease in onshore international students studying at Curtin University from 2009 to 2015, while international student enrolments at The University of Western Australia have been relatively static (Duncan et al., 2016).

The result is that, in 2015, Western Australian higher education institutions accommodated just 5% of total international students studying onshore in Australia, including university and non-university higher education institutions (HET, 2015).

What is also distinctive to Western Australian universities is the high proportion of offshore student enrolments. Curtin University and Murdoch University are responsible for 91% of offshore student enrolments at Western Australian institutions (HET, 2015). These students are an important source of revenue for institutions but do not deliver the same direct or indirect economic benefits of students who study within Australia (Duncan et al., 2016).

Students in the non-university higher education sector make up 14% of total onshore overseas student enrolments in 2015 (HET, 2015).

### Vocational Education and Training – Domestic, International and Onshore vs Offshore Student Enrolments

Vocational education and training statistics (2015) indicate that Western Australia accommodated 8.6% of international students enrolled in VET in Australia. This compares to 29% enrolled in NSW; 25% in Victoria and 13% enrolled in Queensland. Almost all international students enrolled in VET courses in Western Australia study onshore (NCVER, 2016).

While Western Australia's share of international VET enrolments is lower than could be expected on a per capita basis, it has increased significantly, being estimated at just 2% in 2002 (Duncan et al., 2016).

### Origin of International Students Studying in Western Australia

The primary, and growing, source of international students in Australia in 2015 was China, with Chinese students making up 26% of enrolled international students

in 2015 compared to 17% in 2012. Other key source countries are India with 11%, as well as Vietnam, Korea and Thailand each of which are source countries for more than 4% of international student enrolments (Duncan et al., 2016).

WA's international student market has been identified as more diverse than in other states with the top ten source countries being responsible for 60% of all enrolments, compared to 67% nationally, and the state has specifically been noted for attracting a smaller share of the Chinese market than other cities, such as Adelaide (Duncan et al., 2016).

As illustrated in Map 3 and Map 4, in 2015 14% of WA's international students were from China compared to an average of 26% nationally, however the state accommodated a slightly higher than average proportion of student enrolments from India (12%); Malaysia (7%); Brazil (4%); Taiwan (4%); Hong Kong (3.6%) and Singapore (3%) (Duncan et al., 2016).

**Table 4:**  
**Top Ten International Student Source Countries WA and Australia**

Top Ten Source Countries – Western Australia	Proportion of International Students	Top Ten Source Countries – Australia	Proportion of International Students
China	13.80%	China	26.38%
India	12.20%	India	11.24%
Malaysia	7.00%	Vietnam	4.58%
Brazil	5.20%	Korea	4.45%
Vietnam	4.00%	Thailand	4.34%
Taiwan	4.00%	Brazil	3.82%
Korea	3.90%	Malaysia	3.74%
Hong Kong	3.60%	Nepal	3.07%
Singapore	2.90%	Indonesia	2.99%
Pakistan	2.90%	Pakistan	2.49%

Source: Duncan et al., 2016

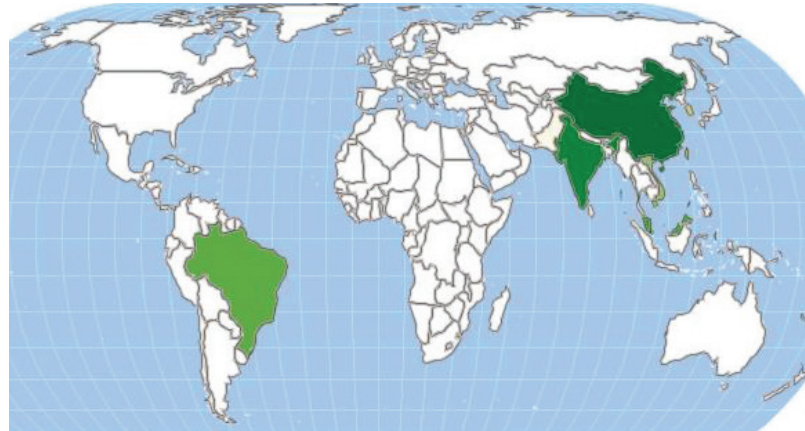
The location of the Perth and Peel region, close to existing and potential source countries in the Asia-Pacific region has been identified as a potential benefit in attracting students to metropolitan Perth (Duncan et al., 2016), however evidence also indicates that proximity does not always correlate with increased student numbers from a source country. For example, capital cities in the eastern states attract more students from countries such as Indonesia and China, despite WA's geographic proximity to these countries, as outlined in Table 4 and illustrated in Maps 3 and 4.

## Trends in International Education and Factors Influencing International Student Destination Choices

The global population of students who move to another country more than doubled from 2000 to 2014, from 2.1 million to almost 5 million – with an annual increase of 10% (Oxford University, 2015). The OECD has projected that, with demographic changes, international student mobility is likely to reach 8 million students per year by 2025 (OECD, 2014; Oxford University, 2015).

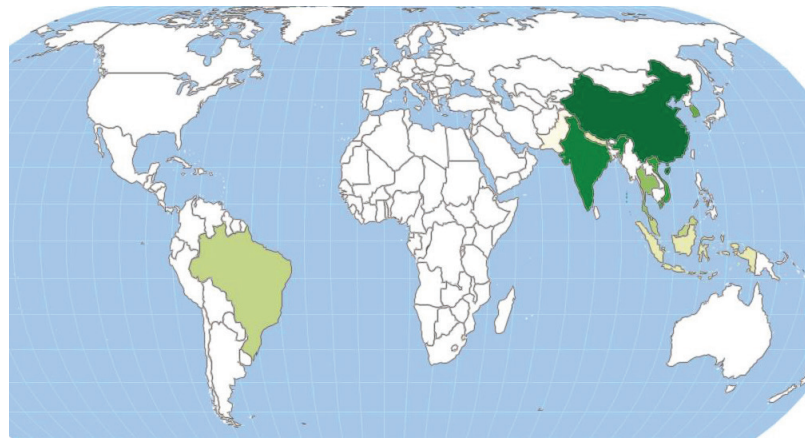
This increase, which has primarily been driven by students from within China, India and South Korea, has been accompanied by a shift in the balance of host countries. In 2015, the United States of America was the most popular country for international students, followed by the United Kingdom, Germany, France and Australia, with half of all international students pursuing degrees in these five countries. However, the USA and UK's traditional market share is

**Map 3:**  
**Top 10 International Student Source Countries WA**



Data Source: Duncan et al., 2016

**Map 4:**  
**Top 10 International Student Source Countries Australia**



Data Source: Duncan et al., 2016

declining, with Australia and Canada increasing in popularity (Oxford University, 2015).

Yet, with the economic benefits of international students to institutions and regional economies widely recognised, and competition between destinations increasing, cities around Australia and the world are preparing strategies to attract international students. At the same time, Asian nations are reported to be increasingly

focused on reducing the proportion of students travelling overseas to study (Oxford, 2015; Duncan et al., 2016).

## Factors Influencing International Student Locational Choices

Western Australia and the Perth and Peel region attracts a smaller share of the international student market than would be expected based on the population of the state. The region particularly underperforms in the onshore international student market.

Considerable research has been undertaken nationally and internationally to identify the 'pull' factors that influence international students when deciding on their study destination. These factors fall into four broad categories:

1. Quality of education providers.
2. Liveability; environmental quality of the study destination; location of the destination, including proximity to student country of origin.
3. Cost – fees; access to scholarships; cost of living; and potential for part time work.
4. Migration – potential to remain and obtain work in the host country/city after completing studies (Hobsons, 2016; Phang, 2013).

While all these indicators are important, internationally the potential to access post-study employment has been identified as a critical driver in attracting international students. In Australia, a recorded decline in international student numbers in 2009 resulted in a 2011 Strategic Review of the Student Visa Program that made recommendations for a sustainable system to balance Australia's economic, education and migration interests.

Key recommendations of the review included streamlining the visa process and introducing post-study work rights for students graduating from Australian universities. These changes have been attributed with directly increasing the proportion of international students choosing to study in Australia (British Council, 2013).

This is of significance to Western Australia because, while visa requirements across Australia are consistent, it is evident from national and international assessments that the state is not perceived to provide the quantity or quality of post-graduate employment opportunities available in other major metropolitan regions in Australia.

## How is the Perth and Peel region rated as an international student destination?

Research shows that international students primarily obtain information about study destinations either through word of mouth or online (Hobsons, 2016). A review of notable websites providing information on Australian study destinations has therefore been undertaken to establish how the Perth and Peel region is rated and portrayed as an international student destination and particularly how the region is rated against the four factors outlined above.

A key international ranking organisation is QS, which provides online rankings of international universities and study destinations. In 2017, QS rated Perth 7<sup>th</sup> in Oceania and 50<sup>th</sup> in the world as a destination for international students behind Melbourne (5<sup>th</sup> in the world), Sydney (13<sup>th</sup>), Brisbane (20<sup>th</sup>), Canberra (22<sup>nd</sup>), Auckland (28<sup>th</sup>) and Adelaide (44<sup>th</sup>). This is generally consistent with other national and international evaluations which have consistently placed Melbourne as Australia's best city for international students. An overview of the rationale provided for Perth's ranking is outlined in Table 5.



**Table 5:  
Key Factors Influencing Regional Attractiveness as International Study Destination**

Key 'Pull' Factor	Perth and Peel Rating in Comparison to other Major Metropolitan Regions
<b>Quality of education providers</b>	<p>The Perth and Peel region has five universities including three universities that are featured in the QS World University Rankings 2016-17, the highest ranked of which is The University of Western Australia (UWA) at joint 102<sup>nd</sup> in the world (QS, 2017).</p> <p>Melbourne, by comparison, is home to seven universities featured in the QS World University Rankings 2016-17, the highest-ranked of which is the University of Melbourne at 42<sup>nd</sup> in the world – second only to Australian National University which is ranked 22<sup>nd</sup> in the world; and Sydney which has five Sydney universities included in the QS World University Rankings with both the University of Sydney and the University of New South Wales featuring in the global top 50 (QS, 2017).</p>
<b>Liveability and environmental quality of the study destination. This includes safety; climate and environmental quality; and access to culture</b>	<p>Melbourne is ranked as the 5<sup>th</sup> most desirable city in the world for international students based on the region's cultural, lifestyle and environmental features. Key factors influencing this rating include: Melbourne's rating as the most liveable city in the world; the city's climate; the environment – including access to quality beaches and outdoor locations; the city's vibrant street and nightlife; and the region's packed annual cultural and sporting calendar.</p> <p>The Perth and Peel region, by contrast, rated as the 23<sup>rd</sup> most desirable city in the world for international students with the region's key benefits being identified as climate and access to high quality parkland and beaches. The mix of students studying in the Perth and Peel region is also rated positively and the region is rated in the top 50 cities based on student feedback with Perth identified as being "a beautiful, active city without being overcrowded or hectic. The people are very friendly" (QS, 2017a).</p> <p><b>Additional evidence:</b> The website studentcities.com.au also rates Melbourne as the number one student destination in Australia with key strengths identified including cultural and sporting events; inner city living and study options; an integrated public transport system; and quality affordable food choices.</p> <p>By contrast 'student cities' identifies Perth as a 'suburban destination' with student housing, cultural and sporting events being more campus/suburban oriented, which reflects the more dispersed location of education and training nodes in Perth and Peel. Research by University Colleges Australia (2014) and the Perth Education City Project (McMath, 2016) also identifies access to housing as a disadvantage for the Perth and Peel region. This indicates that most international students prefer living on or close to campus; within approx. 6km of campus; or in an inner-city location and that the Perth and Peel region has a very low supply of dedicated on-campus accommodation and has fewer inner city housing options compared to regions such as Melbourne.</p>
<b>Cost of tuition; living; and access to part-time work</b>	<p>Cost of living has been identified as one of the Perth and Peel region's primary disadvantages in the international student market. QS ranks the affordability of the Perth region for international students 106<sup>th</sup> compared to Melbourne (104<sup>th</sup>); Sydney (110<sup>th</sup>); Brisbane (96<sup>th</sup>); Canberra (91<sup>st</sup>); Auckland (92<sup>nd</sup>); and Adelaide (95<sup>th</sup>). Key factors influencing the affordability of the Perth and Peel region for international students include tuition fees – which are rated as high in all Australian locations; housing affordability; and cost of living such as transport costs.</p> <p><b>Additional evidence:</b> The website studentcities.com.au also identifies the Perth and Peel region as an expensive destination for international students noting that "<i>it is the second most expensive city after Sydney</i>". This is supported by online 'cost of living' calculators that also identify cost of living in the Perth and Peel region as significantly higher than in Melbourne. For example, according to the website Numbeo: "<i>You would need around \$A6,062.50 in Melbourne to maintain the same standard of life that you can have with \$A6,300.00 in Perth, assuming you rent in both cities</i>".</p>
<b>Migration opportunities and access to post-study employment</b>	<p>At 67<sup>th</sup>, the Perth and Peel region is rated lower than other Australian cities for the Employer Activity category, which is reported as reflecting the region's distance from many of Australia's graduate recruiters and key employment markets in sectors such as finance and information and telecommunications.</p> <p>As a comparison, some other Australian metropolitan regions are rated within the top 10 in the world including Melbourne (7<sup>th</sup>); Sydney (9<sup>th</sup>); Brisbane (47<sup>th</sup>); Canberra (40<sup>th</sup>); and Adelaide (55<sup>th</sup>).</p>

It is apparent from international and national destination rankings that the Perth and Peel region is perceived to have numerous disadvantages as a study destination for international students when compared to other major Australian metropolitan capitals and that these disadvantages fall across all four major 'pull' factors.

## Conclusions and Strategic Questions for the Future

Education and training is a critical industry for the economy of the Perth and Peel region, delivering significant export revenue, employment and human capital, which is central to economic resilience, knowledge and innovation.

This Bulletin has established that Western Australia and the Perth and Peel region is currently underperforming in measures of human capital and in the generation of export revenue from international education. Most significantly, the Perth and Peel region is not attracting a proportional share of onshore international students in the higher education sector; the state's share of the international higher education market has been in decline; and the region is not perceived to be as attractive as a study destination for international students.

This raises key policy questions for the future:

- Can the Perth and Peel region capitalise on, and increase the resilience of the mining and resources sector in WA by building the region's role as a centre of mining and resources knowledge, innovation and technology and how can the higher education, VET and private sector support this transition?
- Is there capacity for the Perth and Peel region to build its reputation as a centre for higher education in engineering and related technologies and mining and resources; as well as increase the region's prominence in new fields such as information technology?
- Can the Perth and Peel region better capitalise on its geographic proximity to key source countries for international students?
- How can the Perth and Peel region raise its profile and competitiveness as an international student destination? Strategies to achieve this should consider the rating and promotion of regional universities/ education opportunities; the spatial location of higher education opportunities to maximise access to vibrant locations and cultural, sporting and entertainment opportunities; providing affordable housing, lifestyle and transport options; and delivering access to local and national recruitment/ employment opportunities.

## References

- Australian Bureau of Statistics, 2011, Census of Population and Housing, [www.abs.gov.au](http://www.abs.gov.au), Retrieved 10/03/2017
- Australian Bureau of Statistics, 2015, 4235.0 – Qualifications and Work, Australia, [www.abs.gov.au](http://www.abs.gov.au), Retrieved 10/03/2017
- Australian Bureau of Statistics, 2016, 3101.0 – Australian Demographic Statistics, [www.abs.gov.au/ausstats/abs@.nsf/mf/3101.0](http://www.abs.gov.au/ausstats/abs@.nsf/mf/3101.0), Retrieved 12/03/17
- British Council, 2013, Megatrends – The future of International Education, British Council, [www.britishcouncil.org/education/ihe/knowledge-centre/student-mobility/megatrends-future-international-education](http://www.britishcouncil.org/education/ihe/knowledge-centre/student-mobility/megatrends-future-international-education) Retrieved 8/03/2017, Retrieved 10 March 2017
- Cadence Economics, 2016, The graduate education effect: higher education spill overs to the Australian workforce, Universities Australia, [www.universitiesaustralia.edu.au/Media-and-Events/commissioned-studies/The-graduate-effect--higher-education-spillovers-to-the-Australian-workforce/The-graduate-effect--higher-education-spillovers-to-the-Australian-workforce#.WMdtujt95PZ](http://www.universitiesaustralia.edu.au/Media-and-Events/commissioned-studies/The-graduate-effect--higher-education-spillovers-to-the-Australian-workforce/The-graduate-effect--higher-education-spillovers-to-the-Australian-workforce#.WMdtujt95PZ), Retrieved 20 February 2017
- Curtin University, 2016, Curtin University Student Statistics, <https://planning.curtin.edu.au/stats/students.cfm>, Retrieved 8 March 2017

Deloitte Access Economics (DAE), 2016, Australian Government Department of Education and Training, <https://internationaleducation.gov.au/News/Latest-News/Pages/value-of-international-education-to-Australia.aspx>, Retrieved 20 February 2017

Department of Education and Training (DET), 2015, Higher Education Statistics Students 2015, Australian Government, [www.education.gov.au/higher-education-statistics](http://www.education.gov.au/higher-education-statistics), Retrieved 15 February 2017

Duncan A, Kiely D, Leong K, Phillimore J and Seymour R, 2016, 'Western Australia's International Education Sector: Performance and Prospects', Bankwest Curtin Economics Centre and John Curtin Institute of Public Policy, November 2016

Ernst and Young, 2015, Megatrends 2015, Making Sense of a World in Motion, Ernst and Young, [www.ey.com/Publication/vwLUAssets/ey-megatrends-report-2015/\\$FILE/ey-megatrends-report-2015.pdf](http://www.ey.com/Publication/vwLUAssets/ey-megatrends-report-2015/$FILE/ey-megatrends-report-2015.pdf), Retrieved 8 March 2017

Florida R, 2002, The Rise of the Creative Class and how its Transforming Work, Leisure and Everyday Life, Basic Books, New York

Hobsons, 2016, Creating a Sustainable International Strategy Through Student Intelligence, International Student Survey, Australian Version, [www.hobsonssolutions.com](http://www.hobsonssolutions.com) Retrieved 20/02/2017

Huddleston, 2014, FACTBase 32 Economic specialisation in mining: A spatial assessment, Committee for Perth [www.committeeforperth.com.au](http://www.committeeforperth.com.au)

Huddleston, 2015, FACTBase 42 Perth's Human Capital Base: An Essential Element for the Region's Continued Growth and Competitiveness, Committee for

Jacobs J, 1961, The Death and Life of Great American Cities, Random House, New York

McMath G, 2016, Perth Education City, A Great Place to Live and Learn, Education City Project (Copy Supplied)

National Centre for Vocational Education Research, 2015, Vocational Education and Training (VET) Total VET Students and Courses 2015, [www.ncver.edu.au/search-results?scope=all-data%2F-fbs&collection=ncver-data&meta\\_z\\_sand=true&query=&sort=dmetaM&collection=ncver-search&num\\_ranks=20&f.Collection%7Cw=Students+and+courses+Total+VET](http://www.ncver.edu.au/search-results?scope=all-data%2F-fbs&collection=ncver-data&meta_z_sand=true&query=&sort=dmetaM&collection=ncver-search&num_ranks=20&f.Collection%7Cw=Students+and+courses+Total+VET), Retrieved 3 March 2017

OECD, 2014, Skills Beyond School, [www.oecd.org/education/skills-beyond-school/AHELOFSReportVolume1.Pdf](http://www.oecd.org/education/skills-beyond-school/AHELOFSReportVolume1.Pdf), Retrieved 10 March 2017

Phang, 2013, Factors influencing international students' study destination decision abroad, University of Gothenburg, [https://gupea.ub.gu.se/bitstream/2077/32136/1/gupea\\_2077\\_32136\\_1.pdf](https://gupea.ub.gu.se/bitstream/2077/32136/1/gupea_2077_32136_1.pdf), Retrieved 3 March 2017

Ryan M, 2013, Developing Perth into an Australian International Education City Brand, Australian International Education Conference 2013, <http://aiiec.idp.com/uploads/pdf/2013-c-045-ryan-thursday-4.35pm-bradman-c-045.pdf>, Retrieved 31 March 2017

Spring, Joel. Economization of Education, edited by Joel Spring, Taylor and Francis, 2015. ProQuest Ebook Central, Created from UWA on 2017-02-19 16:36:13

Student Cities, 2017, Best Cities for Study and Living, [www.studentcities.com.au](http://www.studentcities.com.au) Retrieved 10 March 2017

Tonts, 2010, FACTBase Bulletin 14 – Australia's Smart Cities: A Preliminary Assessment, Committee for Perth, [www.committeeforperth.com.au](http://www.committeeforperth.com.au)

Tonts et al, 2012, FACTBase Special Report: Perth as a Global Minerals and Energy Hub, Committee for Perth, [www.committeeforperth.com.au](http://www.committeeforperth.com.au)

QS, 2017, World University Rankings, [www.topuniversities.com/university-rankings](http://www.topuniversities.com/university-rankings), Retrieved 5 March 2017

QS, 2017a, Best Student Cities, [www.topuniversities.com/best-student-cities](http://www.topuniversities.com/best-student-cities), Retrieved 8 March 2017

University Colleges Australia, 2014, National Census of University Accommodation Providers

University of Oxford, 2015, International Trends in Higher Education, [www.ox.ac.uk/sites/files/oxford/International%20Trends%20in%20Higher%20Education%202015.pdf](http://www.ox.ac.uk/sites/files/oxford/International%20Trends%20in%20Higher%20Education%202015.pdf), Retrieved 12 March 2017

## About FACTBase

FACTBase is a collaborative research project between the Committee for Perth and The University of Western Australia to benchmark the liveability of Perth and its global connectedness through an examination of Perth's economic, social, demographic and political character.

The FACTBase team of academics and researchers condense a plethora of existing information and databases on the major themes, map what is happening in Perth in pictures as well as words, and examine how Perth compares with, and connects to, other cities around the world.

## Copyright

This paper is the copyright of The University of Western Australia and the Committee for Perth. While we encourage its use, it should be referenced as:

Davis, G. (2017) *Sizing and Mapping Higher Education and Vocational Education and Training in Perth and Peel*, FACTBase Bulletin 52, The University of Western Australia and the Committee for Perth, Perth.

## About the author



Gemma Davis is a research, policy and strategic planning professional with 19 years of experience working in Australia, New Zealand and the Republic of Ireland.

Gemma is a consultant for the Committee for Perth and was recently employed by the Committee as Manager of Research and Strategy.

Gemma is currently a Director with Davis Consulting Group in New Zealand and is an Honorary Research Fellow with The University of Western Australia. She has authored major reports for the Committee for Perth including the *Get a Move On!* project.

The Committee for Perth is a member-funded organisation and we acknowledge Foundation partners:



A complete list of current members is available at:  
[www.committeeforperth.com.au](http://www.committeeforperth.com.au)