

Report of the Go8-India PhD Advisory Taskforce on

Two-way Mobility of PhD Students Between India and Australia 2017



Go8-India PhD Advisory Taskforce Members

Name	Title	Institution
Professor Peter Høj (Co-Chair)	Chair	Group of Eight
	Vice Chancellor & President	The University of Queensland
Professor Devang V. Khakhar (Co-Chair)	Director	Indian Institute of Technology Bombay (IIT-B)
Professor Arun K. Grover	Vice Chancellor	Panjab University
	Chair, Advisory Committee	Chandigarh Region Innovation and Knowledge Cluster (CRIKC)
Mr Datta K. Kuvalekar	Director, Technology & Engineering	Forbes Marshall, India
Mr Jang Sangha	Managing Director	Sangha Group of Companies
Professor Veena Sahajwalla	Director, Scientia Professor	Centre for Sustainable Materials Research & Technology (SMaRT@UNSW), UNSW Sydney
Professor Mohan Krishnamoorthy	Pro-Vice Chancellor (Research)	University of Queensland
Professor Craig Jeffrey	CEO & Director	Australia India Institute (All)

(right)
Professor Peter Høj,
Co-Chair of the Taskforce,
Chair of the Go8, Vice-
Chancellor and President
of the University of
Queensland



(far right)
Professor Devang Khakhar,
Co-Chair of the Taskforce,
Director of IIT Bombay



Contents

Executive summary	4
Recommendations	5
Background – the Go8 in the Australia-India knowledge partnership	10

1. Indian PhD student numbers and mobility	14
Indian PhD students in India	14
Indian PhD students in Australia	16
Indian PhD students in the United States and other countries	17
2. Australian PhD student numbers and mobility	22
Australian PhD students in Australia	22
Australian students in India	23
Australian students in the United States	23
3. Understanding the choices of international students	24
4. Barriers for Indian students coming to Australia	26
Perceptions and information	26
Addressing Financial barriers	31
Addressing Regulatory and Administrative issues	42

Conclusion	50
------------	----

Executive summary

The mobility of university students at all levels of study between India and Australia is currently heavily one-way, from India to Australia, reflecting differences in the per capita capacity of the higher education systems of both countries. The educational sector represents one of the most dynamic segments of the growing relationship between Australia and India and the growth in joint PhD degrees and the spread of joint research projects will underpin this sector into the decades to come. The Group of Eight Universities (Go8), comprising Australia's leading research intensive universities is looking to redress this current imbalance, particularly as it relates to PhD mobility.

This report takes a step towards remedying this imbalance, firstly by identifying the barriers to collaboration, and then suggesting measures to address them. The report and recommendations have been informed by extensive consultations with Indian and Australian stakeholders from government, universities and industry, including at two workshops held in Delhi in 2017. The report is the first formal output of the Go8-India PhD Advisory Taskforce, which was announced by the Australian Minister for Education and Training, Senator

the Hon. Simon Birmingham, in New Delhi on 10 April, 2017. The Taskforce, jointly chaired by Professor Peter Høj, Chair of the Go8 and Vice-Chancellor of the University of Queensland, and Professor Devang Khakhar, Director of IIT Bombay, was established specifically to identify initiatives which will increase the two-way flow of PhD students between Australia and India.

Specifically, the Taskforce's mandate is to:

- 1.** identify existing barriers and disincentives that currently limit the two-way flow of students between Australia and India;
- 2.** examine how the business sector can promote the need for a PhD-skilled workforce to provide industry-ready PhD graduates, and;
- 3.** develop strategies to increase the mobility of PhD students between the two countries.

To prepare the groundwork for further informed dialogue about the barriers to cross-border PhD mobility, this report examines the regulatory, financial, perceptual and informational issues affecting the flow of PhD students between Australia and India and makes recommendations for action to address these barriers.

Recommendations

Addressing perceptual/information barriers

The mobility of students between any two countries is clearly affected by the perceptions and knowledge that students hold about the other country, and its higher education and research sector. Measures therefore are needed to address students' lack of knowledge or appreciation of benefits by promoting the research strengths of the other country and creating opportunities for short-term 'exposure' to the research environment in the other country.

It is recommended that:

1. The Go8, in conjunction with organisations such as the Australia India Institute (AII) and Austrade, collaborate to identify the key attributes that make Australian universities distinctive and attractive for Indian students. This should include an emphasis on:
 - » the strong geographical focus on and linkages with the Indo Pacific region of Australian universities.
 - » the quality of Australia's research-intensive universities in research and post-graduate supervision.
 - » the value for money offered by Australian PhD programs.
2. The Go8 work with their Indian partners to develop the pipeline of Indian students undertaking PhDs in Australia, and increase the number of Australian students at all levels spending time studying or researching in India. In support of these aims:
 - a. The Go8 develop a program(s) that provides opportunities for Indian undergraduate students to undertake short-term (6–8 weeks) or semester-length research internships at Go8 universities. Such a program(s) could potentially operate either at an institutional level, or collectively across the Go8.
 - b. The Go8 should increase the number of Australian undergraduate students spending time in India by expanding programs to India funded under the New Colombo Plan.
 - c. The Australian Government should widen the scope of New Colombo Plan funding to provide opportunities for both Masters and PhD students.

» the benefits of studying at a comprehensive, multi-disciplinary university.

-
3. Where possible, existing Indian Government programs such as GIAN (the Global Initiative of Academic Networks) should be leveraged to increase the engagement of Go8 academic staff and PhD students with Indian partners.
 4. The Go8 should undertake a stocktake of Go8 India Studies courses, study opportunities in India for Go8 students and Indian-born and India-engaged faculty in order to promote and enhance undergraduate students' interest in and knowledge of India.

Addressing financial barriers

Even if students would like to spend either part or the duration of their PhD candidacy in India or Australia, financial implications will be an important consideration. For many perhaps most, Indian students, the decision to spend a few months, a year or an entire PhD candidacy in Australia is likely to be contingent on the availability of funding support. Go8 universities provide support for many of their international PhD students in the form of tuition fee scholarships and, in some cases, living allowances.

Many international PhD students also take up opportunities that the universities offer for paid work as tutors and research assistants, to help cover their living costs. These forms of support might not be well known in India. For Australian PhD students, the fees and living costs in India are likely to be less of a barrier, but financial incentives in the form of travel/study grants and scholarships will nevertheless still be important to persuade more Australian students to engage with India during their PhD.

It is recommended that:

5. The Go8 promote awareness among Indian students in India of existing forms of financial support that might be available to them if they undertake a PhD program at a Go8 university. This should include all forms of scholarship support and work opportunities provided by the university, as well as support available from relevant Australian Government programs.
6. The Go8 universities should seek to leverage the Australian Research Council's Linkage

Program to establish research partnerships with industry in India, and encourage the recruitment and mobility of PhD students as part of Linkage projects. The Go8 should work with Indian partners to advocate for/take advantage of similar programs in India with an emphasis on PhD mobility.

7. A collaborative program be developed for Indian companies and Australian companies based in India to sponsor scholarships for Indian students to study in Australia on PhD projects relevant to their businesses.
8. The Go8 together with Indian university and industry partners, investigate innovative PhD modalities – including co-supervision – that integrate employment with the industry partner and PhD research collaboration between the Go8 and India aimed at solving an industry partner R&D problem.
9. The Australian Government leverage the Australia India Strategic Research Fund (AISRF) to support increased PhD mobility between Australia and India. Specifically, it should:

- a. Commit to continued Australian Government funding of the AISRF beyond its current commitment to 2018–19.
- b. Together with the Indian Government, review the grant assessment criteria for the AISRF with a view to making the recruitment and mobility of PhD students from both countries a compulsory requirement for some AISRF project grants.
- c. With the Indian Government, review the timelines for AISRF grants to ensure they enable the recruitment of PhD students funded by AISRF.
- d. With the Indian Government, design and fund a sub-program under the AISRF to allow short-term mobility for PhD students from both countries, along the same lines as the programs that already facilitate mobility for early and mid-career researchers.
- e. Broaden the AISRF from its current exclusive STEM focus to include Humanities and Social Science (HASS) disciplines, with a requirement that projects address areas of mutual national need.

10. Go8 universities explore with Indian partner institutions possibilities for new jointly-badged PhD programs, along the lines of the IITB-Monash Research Academy. Any new jointly-badged PhD programs between Go8 universities and Indian institutions should include from the outset a 'reciprocal' program for Australian domestic PhD students to spend time working on their research in India.

11. Go8 universities implement mechanisms to facilitate Australian domestic PhD students conducting some of their research at Indian universities, including by:

- a. Designing and recruiting for PhD projects that address India-relevant research problems across all disciplines;
- b. Making a period of research at an Indian university or research institution a compulsory element of PhD projects that align with Indian research strengths;
- c. Encouraging Go8 academics to spend sabbaticals in India and take a PhD student with them; and
- d. Coordinating with Indian partner institutions to create formal co-supervision programs that

enable Australian PhD students to spend around one month in each year of their candidature, and up to 3 months in total, at an Indian partner institution.

12. Go8 universities make available travel grants to their Australian PhD students to spend up to three months as a visiting scholar at Indian institutions separate but related to their PhD studies. PhD candidature and funding would be adjusted accordingly to accommodate the time in India.

Addressing regulatory / administrative barriers

The international mobility of students and researchers is also affected by the ease with which they can navigate bureaucratic processes, both government and university.

It is important therefore that visa settings on both sides help as much as possible to facilitate the movement of researchers and research students, including for shorter-term stays.

The opportunities that immigration regulations provide for foreign researchers and PhD graduates to work in a country also shape the perceptions of prospective students about the country in general as a place

to undertake a PhD or spend time during a PhD candidacy.

It is recommended that:

- 13.** The Australian Government – in consultation with the University sector – should develop a special class of visa for researchers and PhD graduates to work in Australia that would help attract the best research talent from around the world.
- 14.** Both Australian and Indian Governments, notwithstanding in-country security provisions, minimise visa processing times and application requirements for academic and PhD student mobility between India and Australia.
- 15.** That a secretariat body be established to support Australian undergraduate students participating in in-country study programs in India. The body would be similar to that which already exists to oversee programs for Australian students to study in Indonesia and would provide administrative, immigration and pastoral care support for Australian students through offices in Australia and India.
- 16.** The Australian Government (Department of Education and Training) and the Indian Government (Ministry of Human Resource Development) schedule the next meeting of the Australia India Education Council (AIEC) as a matter of urgency. The meeting agenda should include a focus on mutual recognition of credits, quality assurance frameworks and increasing two-way PhD mobility between India and Australia.
- 17.** Go8 universities leverage their existing relationships with Indian partner institutions to implement credit recognition and quality assurance arrangements to enhance undergraduate student mobility through existing student exchange programs.
- 18.** Opportunities to access entrepreneurship training and experience be included in all Go8 – India PhD mobility initiatives. This could include through courses, participation in innovation/start-up incubator and accelerator programs and engagement with industry facilitated through the Go8 and partner Indian institutions.

Background – the Go8 in the Australia-India knowledge partnership

Australia and India are at different points in the evolution of their higher education system facing different challenges. Australia's is a mature system supported by an advanced economy. It has the capacity to accommodate 100 per cent of domestic demand for university study, while also receiving enough international students to make it one of the top destination countries for international students in the world. Seven of its universities (all members of the Go8) are ranked in the top 100 in the world.

Attracting the best PhD students from around the world is an important element in maintaining the quality of Australia's higher education system. On the other side of the equation, relatively few Australian students currently undertake PhD studies overseas. Arguably, however, Australian university students (at all

levels) could benefit by seeking out more overseas study and research opportunities.

The Indian Government is in the process of simultaneously pursuing two enormous challenges for its higher education system:

1. expanding access to higher education to meet growing demand from its young population, and;
2. lifting quality at the top end of the system, particularly in science, technology, engineering and mathematics, to a world class standard.¹ In addition, the Indian Government has also expressed interest in 'globalizing' Indian higher education, including by making India an international education destination.²

Outside academia, India's universities also need to supply the

1 Ranjit Devraj, 'STEM focus to drive 'world-class' universities scheme', *World University News*, 26 May, 2017, Issue No. 461.

2 Government of India, Ministry of Human Resource Development, '*National Policy on Education 2016 – Report of the Committee for Evolution of the New Education Policy*', April, 2016. Pp. 144–45.

See also, ICEF Monitor, 'India is a key source of international students – can it become a destination', 18 February, 2015. (<http://monitor.icef.com/>)

growing research needs of industry in a rapidly changing and modernising economy. The 'youth bulge' in India's demographic profile also means it expected to have a substantial labour surplus for many years from 2020, with the opportunity to become a 'global hub for talent' and skilled labour.³

To achieve these objectives, India will need a much larger PhD-trained workforce than it has now. Currently, the Indian higher education system on its own does not have the capacity to expand the annual cohort of PhD graduates to the level needed. Although the proportion of Indian PhD students who choose to go overseas for their doctoral training has decreased, intense competition for places in PhD programs at India's top institutions forces a significant number of talented students to look for opportunities overseas.⁴

Taken together, the differences outlined above in the two countries' economies, demographic profiles and higher education systems reveal complementary needs that suggest opportunities for collaboration on PhD training. The differences also imply a different set of challenges for increasing the flow of PhD students in each direction. Any measures to increase the flow therefore need to be shaped with these different starting points and challenges in mind.

The outputs from collaborative research between Australia and India have increased significantly over the past two decades, as India's researchers have also steadily increased their co-publishing output with international authors from all countries.⁵ Australia has recently moved up to become one of the top five or six countries for international research collaboration by Indian researchers.⁶

3 EY, 'Higher Education in India: Moving towards global relevance and competitiveness', FICCI Higher Education Summit 2014. P.11.

4 Malini Goyal, 'Indian students with foreign degrees returning home: Lessons India can learn from China', *The Economic Times*, 23 March, 2014.

5 ACOLA, 'Australian Research Collaboration in Asia', 2014.

6 Cited by Dr Arabinda Mitra, Adviser & Head, International Cooperation, (Bilateral) Go8-India PhD Colloquium, New Delhi, 11 April, 2017.

However, there is clearly scope for further improvement. Between 2011 and 2017, India has consistently ranked either 16th or 17th among all countries for Australian collaborative research projects funded by the Australian Research Council (ARC). The number of projects in which grantees indicated an intention to partner with Indian researchers was also relatively steady during this period. To illustrate the potential for greater collaboration, in 2016, the number of ARC-funded projects where grantees indicated an intention to collaborate with Indian-based partners was just 17 per cent of the number of grantees planning to partner with researchers from China.⁷

All Go8 universities have long-standing research ties with India. As Australia's leading research-intensive universities, the Go8 account for

a substantial share of Australia's collaborative research effort with India. Go8 universities were the lead Australian institution in 46 per cent of grants awarded under the AISRF scheme between 2007 and 2015.⁸ Perhaps not coincidentally, since 2007, the co-publishing output of Go8 and Indian-based researchers has steadily increased. In 2007, Go8-India collaborations produced 154 co-authored articles and reviews. This had risen almost 5-fold, to 727, by 2016.⁹

The significance of the Go8 in Australia's research partnership with India is also already reflected in Indian PhD students' choices of university in Australia. While the Go8 universities receive only a small proportion of Indian students studying in Australia for Bachelor and Masters by coursework degrees (both less than

7 Australian Research Council, 'Number of new and ongoing projects with international research collaborations on ARC-funded research projects since 2011, by funding allocation year', 2017. (www.arc.gov.au/international-research-collaboration)

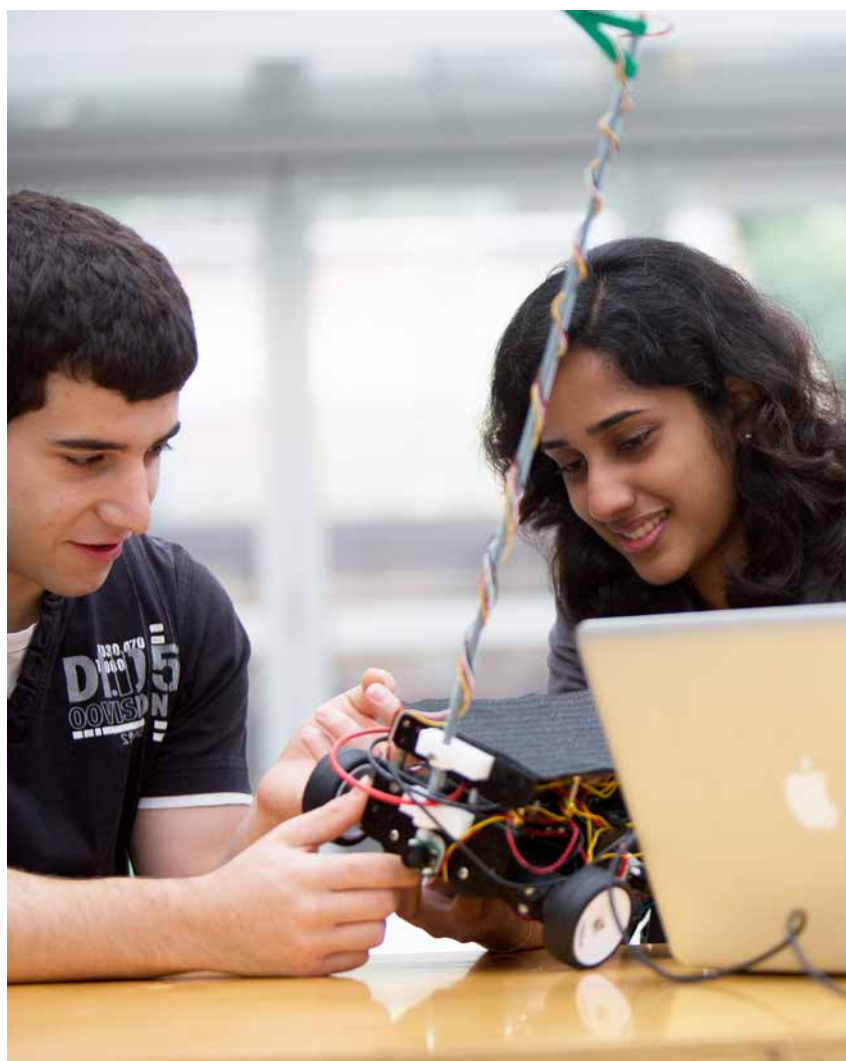
8 Australian Government, Department of Industry, Innovation and Science, 'Australia-India Strategic Research Fund (AISRF) Consolidated List of Funding Outcomes 2007–2016', 2016.

9 *InCites*, data supplied by the University of Queensland, updated March 2017.

10 per cent), almost half of Indian PhD students who come to Australia choose Go8 universities.¹⁰

These existing collaborations provide a strong foundation on which to build even greater links through the increased movement of PhD students between Australia and India.

Individual Go8 universities already have many institutional agreements with Indian universities and higher education institutes. According to the collation of such agreements on the Australia-India Education Council website, based on input from the universities, as of 2016, Go8 universities had 99 agreements covering research, academic engagement, student exchange and broad Memoranda of Understandings.¹¹



¹⁰ Australian Government, Department of Education and Training, Australian Education International (AEI), Go8 Combined Dataset, 2016.

¹¹ Australia India Education Council (AIEC), New Collaboration List, 2016. (www.australiaindiaeducation.com/active-collaborations.html)

1 Indian PhD student numbers and mobility

Indian PhD students in India

To give some sense of the significance of numbers of Indian students going to Australia and other countries to undertake doctoral studies, it is useful to look first at how many Indian students are pursuing PhDs in India. The relatively small number of PhD students in India relative to both the entire population and all university students represents a challenge both for expanding access to university and raising the quality of India's research output.

Data from the 2015–16 All India Survey of Higher Education conducted by the Indian Ministry of Human Resource Development shows PhD enrolment in India is also a very small proportion of the total student population. In 2015–16, only 126,451 students were enrolled in PhD programs in India, equivalent to less than 0.4 per cent of the total student enrolments in university courses at all levels (from certificate up).¹²

To put this figure in comparative perspective, the corresponding ratio of PhD students to all student enrolments in Australia in 2015 was 4.1 per cent, or 57,775 PhDs out of 1,410,133 enrolled university students (domestic and international).¹³ In 2015, Indian institutions awarded just 24,171 PhDs across all disciplines.¹⁴ The table below shows the breakdown of graduates by broad discipline.

¹² Government of India, Ministry of Human Resource Development, 'All India Survey Higher Education, 2015–16', 2016, p.iv.

¹³ Australian Government, Department of Education and Training, '2015 Student Summary Tables', 2015.

¹⁴ Government of India, Ministry of Human Resource Development, 'All India Survey Higher Education, 2015–16', p. T105–T107.

Table 1. Discipline distribution of PhD graduates from Indian institutions, 2015.

Field of Study	Graduates in 2015	Percentage of Total
Science	6607	27.3%
Social Science	3248	13.4%
Engineering & Technology	2785	11.5%
Agriculture	1956	8.1%
Indian Language	1669	6.9%
Medical Sciences	1226	5.1%
Commerce	1179	4.9%
Management	983	4.1%
Education	822	3.4%
Foreign Language	635	2.6%
IT & Computer	487	2.0%
Other	2,574	10.6%
Total	24,171	100%

Source: All India Survey of Higher Education, Indian Ministry of Human Resource Development.

These data highlight the continuing importance of overseas-trained Indian PhD graduates to India's ability to meet domestic demand for higher education, particularly in science, technology, engineering and mathematics (STEM).

Although India has increased its PhD output in these areas over the

past five years, it still trails well behind countries such as the United States and China. In STEM subjects combined, India graduated 10,618 PhDs in 2015. This was less than one third of the US output of STEM PhDs in 2015, of 32,162 (includes domestic and international).¹⁵

¹⁵ National Science Foundation (US), 'Science and Engineering Doctorates by broad field of study and sex of doctorate recipients', 2015. (www.nsf.gov/statistics/2017/nsf17306/data.cfm)

Indian PhD students in Australia

Numbers of Indian PhD students enrolled in all Australian universities and Go8 universities have increased every year from 2002 to 2016, albeit from a relatively low base. In 2016, there were 1,093 Indian PhD students enrolled in Australia. This represented a 30.7 per cent increase compared to 2012, and a 60.7 per cent increase compared to 2006.

It is worth noting that this upward trend year-on-year was maintained even during the period 2009–2012, when Indian enrolments in Bachelor and Masters by coursework degree declined by 34.6 per cent and 64.8 per cent respectively.

Nevertheless, the number of Indian students who come to Australia to do a PhD represents a very small proportion of all Indian students studying for a Bachelor degree or above. In 2016, 41,745 Indian students were enrolled in a Bachelor degree course or higher at an Australian university. The greatest proportion of these students, 71.3 per cent (29,779), was enrolled in Masters degrees. The remaining 26 per cent (10,873) were enrolled in Bachelor degrees.

The 1,093 Indian PhD students enrolled in 2016 represented just 2.6 per cent of all Indian students enrolled at Bachelor level or above. Indian students were less likely than students from China or all



other countries (combined) to be enrolled in a PhD program. PhD students represented 4.1 per cent of all Chinese enrolments at Bachelor level or above, while 7.7 per cent of students from all other countries were PhD students.

Indian PhD students in Australia are heavily concentrated in Go8 universities. Almost half (48.2 per cent) of Indian PhD students in 2016 were at Go8 universities.

By far the most favoured fields of study by Indian students at PhD level in 2016 (at any Australian university) were Engineering & Related Technologies (26.2 per cent), and the Natural & Physical Sciences (26.2 per cent), followed by Health (17.2 per cent), and Society & Culture (13.4 per cent).

This was in stark contrast to Indian students studying at both Masters and Bachelor degree level. At Masters level, Management and Commerce (46.3 per cent) and Information Technology (28.7 per cent) were by far the fields most studied by Indian students, followed by Engineering (12.2 per cent).¹⁶

Indian PhD students in the United States and other countries

India's annual domestic cohort of PhD graduates is also supplemented by a significant number of students awarded PhDs in other countries.

United States

The US is the leading destination country for international PhD students from many countries. US universities also enrol and graduate significantly more Indian PhD students than any country other than India.

A comparison of enrolment figures for international undergraduate, Masters and PhD students from all countries studying in the US and Australia reveals Australia's strong competitiveness with the US for international students at undergraduate and Masters degree levels, but also the continued dominance of the US for attracting international PhD students. These outcomes also hold true for Indian students. In other words, the ratio of

¹⁶ Australian Government, Department of Education and Training, Australian Education International (AEI), Go8 Combined Dataset, 2011 and 2016.

Indian students in Australia to Indian students in the US is far higher for undergraduate and Masters degree students than for PhD students.

According to data published by the Institute of International Education (IIE), in 2015/16, there were 122,655 international students enrolled in PhD programs in the US and 233,463 international Masters students.¹⁷ By comparison, in 2016, Australia had 18,145 enrolled international PhD students, and 121,397 Masters students.¹⁸

This means the ratio of international PhD students to Masters students in the US was approaching one to two, while in Australia, it was almost one to seven. The figures cited above include students from all countries, but suggest that international students undertaking PhDs, regardless of their country of origin, are more likely to choose the US over Australia than are students undertaking Masters degrees.

The question is whether this is also the case for Indian students.

Unfortunately, the available IIE data does not disaggregate enrolled foreign PhD students by nationality. The IIE data that disaggregates students by nationality merges all postgraduate students (PhD, Masters, Professional and other). There were 101,850 Indian postgraduate students in the US in 2015/16.¹⁹ By comparison, in 2016, there were 31,653 Indian students enrolled in postgraduate courses in Australia (including graduate diplomas, Masters and PhDs).

These combined figures for all postgraduate students suggest Australia is highly competitive with the US for attracting Indian postgraduate students, particularly given the difference in size between the US and Australian higher education systems. The key difference, however, is that PhD students represent a much greater proportion of the Indian postgraduate student numbers in the US than in Australia.

Although enrolment figures for Indian PhD students only are not available

17 Institute of International Education (IIE), 'Open Doors 2016', survey data tables, 'Academic Level', 2015/16. (www.iie.org/Research-and-Insights/Open-Doors/Data/International-Students/Academic-Level)

18 Australian Government, Department of Education and Training, Australian Education International (AEI), Go8 Combined Dataset, 2016.

19 Institute of International Education (IIE), 'Open Doors 2016', Academic Level and Place of Origin, 2015/16. (www.iie.org/Research-and-Insights/Open-Doors/Data/International-Students/Academic-Level-and-Place-of-Origin)

for the US, this can be extrapolated from available data on the number of PhDs awarded annually to Indian students by US institutions. The US National Science Foundation (NSF) 'Survey of Earned Doctorates' reports that in 2015, US universities awarded 2,230 doctorates to Indian students, second only to Chinese students (5,384). In percentage terms, 13.9 per cent of the 16,083 doctorates awarded to international students in the US in 2015 were awarded to Indian students.²⁰

If Indian students also accounted for roughly the same proportion – 13.9 per cent – of the 122,655 international PhD students who, according to the IIE data, were enrolled in the US in 2015/16, there would have been around 17,049 Indian PhD students enrolled in the US in that year. If broadly accurate, this would be equal to around 15 times the number of Indian doctoral students enrolled in Australia in 2016.

Even if the actual number of Indian PhD students enrolled in the US was

fewer than this, it strongly suggests that Indian doctoral students, like those from other source countries of international students, are also far more likely to choose the US than are Indian Masters students. This raises questions about what factors might be drawing international PhD students to the US that apparently exert less influence on students enrolling in Masters degrees.

At undergraduate level, too, Australia is far more competitive with the US as a destination for Indian students than at PhD level. In 2016, 12,333 Indian students were enrolled in undergraduate courses at Australian universities. This was only 36 per cent fewer students than the 19,302 Indian students enrolled in undergraduate courses in the US in 2015/16.²¹ So while Indian PhD students in the US outnumber Indian PhD students in Australia by at least 10 to one, there were only 1.6 Indian undergraduate students in the US for every Indian undergraduate student in Australia.

20 National Science Foundation, National Center for Science and Engineering Statistics, 'Survey of Earned Doctorates', 2015. (www.nsf.gov/statistics/2017/nsf17306/data/tab25.pdf)

21 Institute of International Education (IIE), 'Open Doors 2016', Academic Level and Place of Origin.

The fields of study chosen by Indian students (all levels) in the United States are similar to those of Indian students in Australia. Engineering is the most studied field (36.0 per cent), followed by Mathematics/Computer Science (34.9 per cent), and Business Management (10.3 per cent).²²

United Kingdom

The UK also awards significant numbers of PhDs to Indian students, although overall numbers of Indian students enrolling in UK universities have been declining for several years. Freely available data published by the UK's Higher Education Statistics Agency (HESA) for the past four years does not specify the number of Indian students enrolled in PhD or Higher Degree by Research (HDR) programs, or how many PhDs have been awarded to Indian students.

However, data from 2011/12 show there were 1,610 Indian HDR students in that year.²³ Given that 2015/16

HESA data also reveals a 44 per cent downturn in Indian enrolments (all degree levels) from 29,900 to 16,745 between 2011/12 and 2015/16, it would be reasonable to conclude that current enrolments of Indian PhD students in the UK might also have declined from their 2011/12 level.²⁴

Other countries

Between them, the US, Australia, UK, Canada and New Zealand account for 85 per cent of international student mobility by Indian students. Except for the UK, overall numbers of Indian students to all of these countries have been growing for several years, with growth to the US by far the strongest in 2015. Other increasingly significant destination countries for Indian students include China and Germany. One report on Indian outbound student mobility noted that Indian student numbers to China increased by 23 per cent in 2015 to 16,694, while students going to Germany grew by 24 per cent to 11,655.²⁵

22 Institute of International Education (IIE), 'Fields of study by place of origin, 2015/16'. (www.iie.org/Research-and-Insights/Open-Doors/Data/International-Students/Fields-of-Study-by-Place-of-Origin)

23 HESA, 'Non-UK domiciled HE students by country of domicile, location of HE institution and level of study, 2011/12', 2012. (www.hesa.ac.uk/data-and-analysis/publications)

24 HESA, 'Top 10 non-European countries of domicile in 2015/16 for HE students enrolments, 2011/12 to 2015/16', 2016. (www.hesa.ac.uk/news/12-01-2017/sfr242-student-enrolments-and-qualifications)

25 MM Advisory Services, 'Indian Students Mobility Report, 2016: Latest trends from India and globally', 2016.



2 Australian PhD student numbers and mobility

Australian PhD students in Australia

In 2015, 37,735 new and continuing Australian (domestic) PhD students were enrolled at all Australian universities.²⁶

Although data is not available to show the broad field of study of PhD students alone, a breakdown by field of study for domestic postgraduate research

students (including Masters by research) shows that Society and Culture, Health and Natural and Physical Sciences were the leading fields of study.

Table 2. Discipline distribution of Australian PhD students

Field of Study	HDR students in 2015	%
Society & Culture	11,401	25.3%
Health	8,363	18.6%
Natural & Physical Sciences	8,201	18.2%
Engineering & Related Technologies	4,357	9.7%
Education	3,532	7.8%
Creative Arts	3,167	7.0%
Management & Commerce	2,659	5.9%
Agriculture, Environment & Related Studies	1,462	3.2%
Information Technology	1,210	2.7%
Architecture & Building	723	1.6%
Total	45,075	100%

Source: Australian Department of Education and Training (u-Cube).²⁷

²⁶ Australian Government, Department of Education and Training, '2015 All Students' Table 2.2 – 'All Domestic Students by Age Group and Broad Level of Course', 2015. (<https://docs.education.gov.au/node/41696>)

²⁷ Australian Government, Department of Education and Training, uCube. (<http://highereducationstatistics.education.gov.au/>)

Australian students in India

The All India Higher Education Survey 2015/2016 reports that in 2015, there were 45,424 foreign students enrolled in higher education in India from 165 countries. This included just 1,139 foreign PhD students, including one PhD student from Australia. Other advanced economies represented among foreign PhD students in India included the United States (22), South Korea (8), France (6), Japan (6), United Kingdom (3), Germany (2), Spain (2), Canada (2), and Switzerland (2). There were also 53 Australian students at undergraduate level and nine students at Postgraduate (excluding PhD) level enrolled in an Indian institution in 2015.²⁸

While these numbers are small, they capture only those students who were formally enrolled in a program of study. It is worth noting that there might also be Australian PhD students who spend time in India working on their PhD project in various ways, possibly including consulting and collaborating with Indian academics informally, without being enrolled at an Indian institution.

Australian students in the United States

To obtain some guide as to the numbers of Australian students who are prepared to travel overseas, and, in many cases, pay for their university education, numbers of Australian students in the US can provide a reference point. According to the Institute of International Education (IIE), 2,218 Australian students were enrolled at undergraduate level at US universities in 2015/16, and a further 1,143 at postgraduate level (Masters and PhD).²⁹

According to the NSF Survey of Earned Doctorates, 52 Australians were awarded doctorates by US universities in 2015. This ranked Australia in 40th position among countries whose citizens received doctorates from US universities.³⁰

Although, these numbers are much greater than the numbers of Australian postgraduate students in India, they are nevertheless relatively tiny in comparison to the numbers of Indian students in the US. This is to be expected given the different drivers and population sizes, but nevertheless provides some perspective to inform expectations about what might be achievable in terms of Australian students studying in India.

28 Government of India, Ministry of Human Resource Development, 'All India Higher Education Survey 2015-16', 2016. Pp. iv, 20, T51-T58.

29 Institute of International Education (IIE), 'Open Doors 2016', Academic Level and Place of Origin.

30 National Science Foundation (NSF), 'Survey of Earned Doctorates', 2015.

3 Understanding the choices of international students

The direction and volume of flows of higher education students between countries can be explained by a combination of widely recognised ‘push’ and ‘pull’ factors that inform students’ decisions.³¹ Push factors relate to conditions in the country of origin that limit access to higher education, or to the desired quality of education, and cause students to look overseas for opportunities. Pull factors relate to conditions and opportunities in other countries that inform outward-bound students’ preferences regarding the destination country and institution.

Push factors most often occur in emerging economies such as India, as rapid industrialisation creates a level of demand for quality higher education that the domestic system cannot meet. Pull factors, on the other hand, are relevant to the decision-making process for outward-bound students from all countries faced with a choice about the country and institution where they will study. Where such pull factors are absent they are effectively barriers to mobility.

Mazzarol & Soutar have identified the following pull factors, which are generally accepted as significant.

- The overall level of knowledge and awareness of the host economy possessed by potential international students;
- Personal recommendations or referrals regarding the host country;
- Cost of studying and living in the host country, along with other social costs;

31 Bilal Rafi & Phil Lewis, ‘Indian higher education students in Australia: Their patterns and motivations’, *Australian Journal for Educational Research*, Vol 57 (2), 2013. Pp. 159.



-
- The relative host country environment with respect to lifestyle, physical climate and education system;
 - The presence of expatriate social networks from the home country in the host country;
 - The quality and reputation of host country institutions; and
 - An intention to assimilate into the host country's culture and to migrate after graduation.³²

Clearly, this list includes issues that can be compared and considered in relatively objective terms—the costs of studying and a country's post-graduation migration regulations—as well as more subjective matters of perception and reputations. It is important to recognise, however, that even consideration of objectively comparable factors such as tuition and living costs or migration regulations can ultimately come down to students' perceptions of these things, which might be based on partial or inaccurate information.

³² T. Mazzarol & G.N. Soutar, 'Push-pull factors influencing international student destination choice', *International Journal of Educational Management*, Vol 16, 2002.

4 Barriers for Indian students coming to Australia

Perceptions and information

Australia as a place to live

The 2017 International Student Survey that samples the views of international students from all countries ranked Australia as the most welcoming country for international students, ahead of Canada, the USA and the UK. The same survey also ranked Australia as the 'safest' country for international students, ahead of Canada, the UK, and the USA, and as the country offering the 'best lifestyle' for international students (ahead of the USA, UK and Canada).³³

Another survey that offers insights into Indian perceptions of Australia and its higher education system is the India-Australia Poll, conducted in 2012, by the Lowy Institute and Australia India Institute. This poll was not limited to Indian students, or prospective students, but surveyed a sample of the Indian adult population. It found 51 per cent of respondents either strongly agreed or agreed that Australia is 'a country with a welcoming people'

(26 per cent disagreed). While 48 per cent agreed that Australia 'is a safe place', 62 per cent agreed that it 'is a good place to live'.³⁴

Australian universities

Although Australian universities are generally well-regarded in India, it is also widely accepted that Indian students tend to view US institutions as the leaders in terms of quality, followed by the UK's. The Australia

³³ Hobsons, 'International Student Survey 2017', 2017.

³⁴ Rory Medcalfe, 'Partners, problems and prospects: Indian attitudes to Australia', India-Australia Poll, Lowy Institute for International Policy & Australia India Institute, 2013.

India Institute in 2012 asked respondents to rate seven countries as a place to be educated. Overall, respondents ranked Australia second, but still significantly fewer people gave Australia the strongest possible endorsement compared to the US. While 61 per cent of respondents regarded the US as a 'very good' place to study, only 42 per cent said the same of Australia. This put Australia slightly ahead of Canada, (39 per cent), Singapore (36 per cent) and Great Britain (35 per cent). Another 34 per cent of respondents said Australia was a 'somewhat good' place to study, compared to 22 per cent for the US, 33 per cent for Canada and Singapore, and 32 per cent for the UK.³⁵

The view that Indian students regard US higher education institutions as superior was also reinforced by findings from a 2009 survey by the Institute of International Education (IIE). This survey asked more than 1000 Indian students (in India)

about their views on various aspects of higher education in six potential host destinations. Respondents overwhelmingly indicated the US as their first choice study destination (90.7 per cent), with only 1.2 per cent nominating Australia as their first choice, and a further 10.5 per cent as their second choice.

The same survey also asked respondents whether they agreed with the statement that each of the six study destinations had a 'high quality higher education system'. Respondents could agree with the statement for all six destinations if they so wished. However, while 87.9 per cent agreed the US had a high quality higher education system, and 31.6 per cent the UK, only 9 per cent agreed that the statement applied to Australia.³⁶

These findings appear to support the general view that Indian students who choose an overseas study destination based primarily on their perception of the quality of education on offer are most likely to choose a US university.

³⁵ Medcalfe, 'Partners, problems and prospects', 2013.

³⁶ Institute of International Education (IIE), 'What International Students Think about US Higher Education: Attitudes and Perceptions of Prospective Students from Around the World', IIE, 2015.

Barriers for Australian Students coming to India

Little data is available about Australian students' perceptions of countries as potential study destinations. Nevertheless, Australian students who choose to study in Australia, or head to North America or the UK, rather than to universities in Asia are motivated in part by the same estimations of quality that influence the mobility of Indian students.

Clearly, this does not mean centres of research excellence do not exist in Asia, or that positive change is not occurring. The research output of India's universities and research institutions has increased dramatically in recent years, and the quality of India's best research institutions, including the Indian Institutes of Technology, are increasingly recognised globally. However, Australian students' knowledge of India's research institutions and recent achievements is likely to be low, given the relatively low profile of India studies in Australian universities, and

at least until quite recently, overall declining interest among Australian students in India studies.³⁷

The Indian Government's plans to develop 20 'world-class' universities will, if realised, enhance India's reputation for quality research in Australia and around the world, and would support the Government's aim of making India a significant destination country for international students.³⁸

Whether or not this ambition is realised, just as the continued preference of Indian students for the US over Australia also highlights, changing long-standing perceptions about the quality of higher education in India among international students will require both effort and time.

This suggests that for the foreseeable future, persuading Australian students of the value proposition of undertaking an entire research degree in India is likely to be quite difficult. Of course, increasing student mobility does not necessarily mean students

37 Fazal Rizvi, Radhika Gorur and Carola Reyes, 'India-Australia Institutional Collaborations in Higher Education: Potential, Problems, Promises', A report for the Australia India Education Council, 2013. Pp. 21.

38 Ranjit Devraj, 'Budget bolsters top institutions' bid for world-class status', *University World News*, 27 July 2017. (www.universityworldnews.com/article.php?story=20170203150724229)

undertaking entire degrees in another country. At both undergraduate and postgraduate level, opportunities for students to spend even short periods studying, conducting research and engaging with the local students and faculty of a foreign institution bring their own benefits, for both the international student and host institution.

Australian students' demonstrated preference for universities in North America and Europe might also indicate that familiarity with the culture and societies of host countries is playing a part. If so, this would suggest another reason for increased investment in India studies programs at the undergraduate level.³⁹

Research students' choices of overseas institutions and countries to visit are also likely to be informed by their supervisors and other faculty, and where they have connections, collaborations and knowledge about current research. To the extent that is the case, initiatives, such as the AISRF, that promote more linkages between academics in both countries would appear to be an essential

element of efforts to increase student mobility.

The issues of India country knowledge and cultural familiarity are already being addressed through programs such as the New Colombo Plan, which creates opportunities for Australian undergraduate students to spend time at universities throughout Asia, including India, and is discussed in the following section. The significant representation of the Indian diaspora in Australian universities also presents an opportunity to deepen Australian students' understanding of contemporary India.

Recommendations - Addressing perceptual/ information barriers

It is recommended that:

1. The Go8, in conjunction with organisations such as the Australia India Institute (AII) and Austrade, collaborate to identify the key attributes that make Australian universities distinctive and attractive for Indian students. This should include an emphasis on:

³⁹ Rizvi et al, 'India-Australia Institutional Collaborations in Higher Education', 2013. Pp. 21.

-
- » the strong geographical focus on and linkages with the Indo Pacific region of Australian universities.
 - » the quality of Australia's research-intensive universities in research and post-graduate supervision.
 - » the value for money offered by Australian PhD programs.
 - » the benefits of studying at a comprehensive, multi-disciplinary university.
- 2.** The Go8 work with their Indian partners to develop the pipeline of Indian students undertaking PhDs in Australia, and increase the number of Australian students at all levels spending time studying or researching in India. In support of these aims:
- a. The Go8 develop a program(s) that provides opportunities for Indian undergraduate students to undertake short-term (6-8 weeks) or semester-length research internships at Go8 universities. Such a program(s) could potentially operate either at an institutional level, or collectively across the Go8.
 - b. The Go8 should increase the number of Australian undergraduate students spending time in India by expanding programs to India funded under the New Colombo Plan.
 - c. The Australian Government should widen the scope of New Colombo Plan funding to provide opportunities for both Masters and PhD students.
- 3.** Where possible, existing Indian Government programs such as GIAN (the Global Initiative of Academic Networks) should be leveraged to increase the engagement of Go8 academic staff and PhD students with Indian partners.
- 4.** The Go8 should undertake a stocktake of Go8 India Studies courses, study opportunities in India for Go8 students and Indian-born and India-engaged faculty in order to promote and enhance undergraduate students' interest in and knowledge of India.

Addressing Financial barriers

Perceptions of tuition and living costs

Analysing differences in tuition and living costs between destination countries is complex, given the many variables in terms of support, university fees, fluctuations in exchange rates, rental markets and other living costs. This complexity is reflected in the mixed perceptions of students (and agents) about the relative costs of studying in different countries.

The 2011 survey of Indian students by Australian Education International found that many Indian students believed Australia's tuition costs were more expensive than those in Canada (46 per cent), New Zealand (46 per cent), the UK (41 per cent) and the US (37 per cent). Education agents in India were similarly divided. Australia's tuition fees were thought to be more expensive than Canada's and the UK's by 50 per cent of agents, than New Zealand's by 53 per cent, and the US by 34 per cent.

The results for perceptions about the cost of living were similarly divided. Living costs were thought to be more expensive in Australia than Canada by 59 per cent of agents, more expensive than New Zealand by 61 per cent, than the UK by 56 per cent, and the US by 44 per cent.⁴⁰

The timing of such surveys is likely to influence the results. The survey was conducted in 2011, when the Australian dollar reached its highest ever level against the US dollar, and was equal to more than USD 1 for most of the year, peaking at around USD 1.10. From mid-2013, the Australian dollar steadily declined in value before settling at around USD 0.75 from mid-2015 until now. Depreciation of more than 30 per cent in the Australian dollar since 2011 suggests Australia's competitiveness in terms of both tuition and living costs for Indian students is now significantly enhanced.

The IIE survey in 2009 that reported an overwhelming preference for studying in the US also found that Indian students regarded both tuition

⁴⁰ Lawson, 'Studying in Australia'. Pp. 5–6.

and living costs in the US as more expensive than Australia. Asked whether they agreed that tuition in the US was expensive, 50.4 per cent if respondents agreed, compared to only 10.2 per cent for Australia. Asked about the cost of living, 42.4 per cent of Indian students agreed the US had a high cost of living, compared to only 9.8 per cent for Australia.⁴¹

Respondents to the Global International Student Survey 2017, prospective students from 196 countries, ranked Australia as the top destination country for value for money, ahead of the US, and UK and Canada, in equal third position.⁴²

Actual tuition costs

Comparison of actual tuition costs between Australia and major competitor countries for PhD students is difficult for a variety of reasons. While there is relatively little variation in the tuition fees international PhD students pay for a program in

the same discipline across all Go8 universities, in the US tuition fees vary a great deal.

The situation is further complicated by the fact that many international students receive various forms and amounts of financial assistance from their host universities, particularly in the US.

Nevertheless, with these caveats in mind, it is useful to note what full-fee paying international PhD students studying at the Go8 pay, and how these compare with a US university with a large international student population.

In 2017, average tuition fees for international students enrolling in PhD programs in Engineering, Arts, Natural and Physical Sciences, Health Sciences and Society & Culture (the four most heavily subscribed fields for Indian PhD students in Australia) across the Go8 universities were USD \$30,592 per year (based on exchange rate at 26 July 2017).

41 IIE, 'What International Students Think', Pp.15.

42 Hobsons, 'The Global International Student Survey'. Pp.11.

Average annual international PhD tuition at Go8 universities (USD)

Engineering	Natural & Physical Sciences	Health Sciences	Arts	Average
USD \$32,228	USD \$31,675	USD \$33,227	USD \$25,250	USD \$30,592

Source: Go8 university websites.

By comparison, the advertised fees at US universities that rank highly for international student enrolments are considerably higher.⁴³ For example, at the University of Illinois, average PhD tuition fees across all four fields were more than USD \$5,000 higher per year than at the Go8.

Annual PhD tuition at the University of Illinois (USD) *

Engineering & Computer science	Natural & Physical Sciences	Health Sciences	Arts	Average
USD \$38,454	USD \$35,842	USD \$38,454	USD \$31,104	USD \$35,964

Source: University of Illinois website.⁴⁴ (* Includes around US \$4000 in associated fees and health insurance).



⁴³ Neil G. Ruiz, 'The Geography of Foreign Students in US Higher Education: Origins and Destinations', The Brookings Institution and JPMorgan Chase, 2014.

⁴⁴ University of Illinois, 'Calculate Cost'. (<https://cost.illinois.edu/>)

US universities vary widely in their tuition fees. While some institutions offer lower fees than the University of Illinois, many also charge more. The University of Southern California, (which from 2012–2014 received more international students than any other university in the US), advertises an estimate for tuition fees of USD \$43,200 for any fulltime doctoral program, with an additional USD \$2,260 in mandatory fees.⁴⁵ MIT's advertised fees for doctoral students undertaking their thesis in 2018 were USD \$24,790 per semester.⁴⁶

For PhD students, this differential in annual tuition fee costs is compounded by the difference in duration of PhD programs in Australia and the US. The standard expected period for completion of a PhD in Australia is three to four years. In the US, PhDs generally take at least five years, and often up to seven.

The 'average' international fee-paying PhD student who completed his or

her degree in four years at a Go8 would pay a total of USD \$122,368 in tuition fees. An 'average' PhD student who completed in five years at the University of Illinois would incur fees of USD \$179,820. In other words, total fees for an international PhD student who completed in five years at the University of Illinois would be around 47 per cent more than for a student who completed in the standard four years at a Go8 university. The longer time to complete also implies significantly greater opportunity costs in the earnings foregone during this period, and, possibly, longer timeframes for the repayment of student loans.

The evidence suggests that Australian tuition costs are at least competitive with the US, and for many students significantly less. If, as it appears, many Indian students are willing to pay more for a PhD degree from a US university than from an Australian university, there must be other pull factors at play.

⁴⁵ University of Southern California, 'How much will my education cost?'.
(<http://financialaid.usc.edu/graduates/prospective/how-much-wil-my-education-cost.html>)

⁴⁶ MIT, Graduate Thesis Tuition Rules – Doctoral Students Tuition Amounts.
(http://web.mit.edu/registrar/reg/costs/graduate/thesisrules_spring.html)

Actual living costs

Unlike, tuition costs, average living costs are not likely to be affected by the level of study. The Australian Department of Immigration and Border Protection uses a single benchmark for living costs that international students must demonstrate a capacity to meet. From July 2016, the 12-month living cost for a single student was AUD \$19,830, with an additional AUD \$6,940 for a spouse and AUD \$2,970 for each child.⁴⁷

This is broadly comparable to living costs in the more expensive metropolitan areas with high concentrations of international students in the US. However, there also appears to be greater range between different metropolitan areas in the US. Analysis by the Brookings Institution using data provided as part of student visa applications showed that between 2008 and 2012, the most expensive area with a high concentration of international students was Ithaca, New York at USD

\$19,785. Average spending on living costs in the Boston-Cambridge area was USD \$17,440, and in Los Angeles/Long Beach USD \$15,338.⁴⁸

Recent analysis of the actual costs of booked accommodation for students in Australia, the US and the UK, found that at a national level, Australia was the most expensive of the three countries for student accommodation, at USD \$268 per week. This figure was an average of prices in five cities: Sydney, Melbourne, Adelaide, Brisbane and Canberra. It was well above the UK average of USD \$223 and the US average of just USD \$200 per week.⁴⁹ One of the reasons for the higher costs in Australia is the relative lack of purpose-built student accommodation on or near campuses, especially compared to the US.

Overall, the evidence suggests Australia is competitive with the United States in terms of student living costs, even if accommodation costs make up a greater proportion of total living expenses.

47 Australian Government, Department of Immigration, and Border Protection, 'Student visa financial capacity requirements', 2016. (www.border.gov.au/Trav/Stud/More/Student-Visa-Living-Costs-and-Evidence-of-Funds)

48 Neil G. Ruiz, 'The Geography of Foreign Students in US Higher Education: Origins and Destinations', The Brookings Institution and JPMorgan Chase, 2014.

49 www.student.com/articles/cities-in-focus/

Student financial support in India

Given the significant costs in tuition fees, living expenses and time out of the workforce to undertake a PhD, most students are likely to be influenced by the availability of financial assistance in choosing an institution and host country. In most cases, scholarships and other forms of international student financial assistance are provided by the host country government or institution.

Some countries, including in the Indo-Pacific region, China⁵⁰, Pakistan⁵¹, and Vietnam⁵², have government scholarship programs to financially support their own students to undertake postgraduate study overseas. Indian students do not currently have access to a scholarship program funded by the Indian Government to facilitate overseas study.⁵³

In the case of PhD scholarships provided by the China Scholarship Council (CSC) for Chinese students to study in Australia, the Council provides students with an annual living allowance, overseas health cover, return airfare and visa application fees. The Australian institution generally contributes a full fee waiver on tuition and a 'top-up' scholarship for living expenses.

In 2014, around 350 Chinese PhD students supported by CSC scholarships were studying at universities across Australia. This included both students enrolled in Australian PhD programs only and joint programs. A further 400 Chinese research students visited Australian universities as visiting scholars.⁵⁴ While these numbers are not sufficient for the CSC to fully explain the significantly greater overall numbers of Chinese PhD students in Australia

50 China Scholarship Council, 'Study Abroad'. (<http://en.csc.edu.cn/Chuguo/>)

51 Pakistan Higher Education Commission, 'Guideline for Country Wise Overseas Scholarships'. (<http://hec.gov.pk/english/scholarshipsgrants/Guidelines/Pages/default.aspx>)

52 Vietnam International Education Cooperation Department, 'General Information on Scholarship Programs using State Budget Recruited by the Ministry of Education and Training'. (<http://vied.vn/en/about-vied/vietnamese-government-s-scholarship-schemes.html>)

53 Government of India, Ministry of Human Resource Development, Department of Higher Education, 'National Scholarships'. (<http://mhrd.gov.in/scholarships-education-loan-0>)

54 Data compiled by the Group of Eight.

(almost 3000 more than Indian PhD students in 2016), the program nevertheless provides a funding pathway (to all host countries) that Indian students cannot access.

Indian students also do not have access to a broad Government-administered student loan scheme, whether income-contingent and integrated with the tax system or otherwise, to reduce the up-front costs and subsequent risks of undertaking postgraduate study.

Student financial support in Australia

The following is a brief summary of scholarships available to Indian students in Australia. What is not known at this stage is how many Indian PhD students in Australia have managed to obtain some level of support under one of these scholarships, and how many are fully funding their own study. What is also not known is how many Indian applicants to PhD programs in Australia who are successful in their application to a program, but unsuccessful in their application for a scholarship, then turn down their offer of a fee-paying place.



RTP Scholarships

The main scholarship open to all Indian PhD students in Australia is what was previously (until 1 January 2017) known as the International Postgraduate Research Scholarships (IPRS). From 2017, the Australian Government integrated the IPRS scheme into a new Research Training Program (RTP), which brings together several postgraduate scholarship schemes for both domestic and international students under one name.

The Government allocates scholarship funding for the RTP to institutions, which then manage the application and selection process. Students apply for the scholarship at the same time as they apply for admission to a PhD program.

Under RTP funding rules, higher education providers can award international students scholarships in the form of:

- Fees offset only
- Fees offset and stipend for general living costs
- Allowances related to the ancillary cost of research degrees.

Where support is provided in the form of a fees offset it must cover the entire amount of fees. For stipends, higher education providers have some discretion to decide on the value of stipends paid to cover the cost of students' living expenses, and, therefore, some flexibility to determine the number of stipend scholarships awarded.

RTP funding rules stipulate that universities can only spend up to a maximum of 10 per cent of their total RTP allocation from the Commonwealth on international students. This cap more than doubles the amount of support available for international research students

compared to that under the IPRS scheme that the RTP replaced.⁵⁵

For international students, RTP scholarships for both fees offset and stipends are awarded on a competitive basis, according to an order of merit as assessed by the institution. While this helps to attract the best quality students, competition for limited scholarships is intense and many highly capable and well-credentialed applicants will inevitably not be successful.

By looking at the Government's total RTP allocation to Go8 universities, it is possible to estimate the maximum number of new full (fee waiver and stipend) RTP scholarships the Go8 could offer international students in one year. In 2017, the Go8 universities' collective RTP income could have funded up to a maximum of 1000 new full scholarships for international students.⁵⁶ This assumes average annual tuition fees of AUD \$35,000 and the minimum stipend amount of AUD \$26,000.

⁵⁵ Australian Government, Department of Education and Training, 'Detailed information on new arrangements for research block grants'. (https://docs.education.gov.au/system/files/doc/other/detailed_information_on_new_arrangements_for_research_block_grants.pdf)

⁵⁶ Australian Government, 'Higher Education Support Act 2003: Grants made to provide postgraduate research Commonwealth Scholarships', December 2016. (https://docs.education.gov.au/system/files/doc/other/rtp_annexure_to_determination_2017.pdf)

To put that figure in perspective, in 2016, 2,065 new international students commenced PhDs at the Go8.⁵⁷

These scholarships are available to international students from all countries, and the proportion going to Indian students would vary across institutions and from year to year.

University scholarships

Individual faculties at Australian (including Go8) universities offer a range of scholarships accessible to international students funded by the universities themselves. Some cover only the cost of tuition fees and overseas health cover, but are often awarded together with a stipend scholarship for living expenses. As with the RTP scholarships, these scholarships are awarded according to merit. Some are exclusively available to international students, while others are open to both domestic and international students.

Australia Awards

The Australian Department of Foreign Affairs and Trade (DFAT) annually funds several thousand international postgraduate scholarships and fellowships under its Australia Awards (AA) program for students from many countries in the Indo Pacific to study in Australia.⁵⁸ Most AA Scholarships are awarded for Masters level study, but scholarships are also available for select candidates to undertake PhD programs. AA Fellowships are awarded to fulltime employees to undertake short-term study in Australia.

However, while Indian citizens can and do apply for AA Fellowships, there is presently no allocation of AA Scholarships for India as scholarships are only available to students from countries where Australia has an official overseas aid program. Australia does not currently have an official aid program in India.⁵⁹

⁵⁷ Australian Government, Department of Education and Training, Australian Education International (AEI), Go8 Combined Dataset, 2016.

⁵⁸ Australian Government, Department of Foreign Affairs and Trade, 2015.
(<http://australiaawards.gov.au/countries/Pages/Participating-countries-by-geographic-region.aspx>)

⁵⁹ Australian Government, Department of Foreign Affairs and Trade, 2016.
(<http://dfat.gov.au/about-us/publications/Pages/india-information-for-intake.aspx>)

This means Indian students have one less avenue to seek financial support for postgraduate study in Australia than, for example, students from countries such as Indonesia, Vietnam, Bangladesh and Pakistan, which between them received close to 900 scholarships in 2015.⁶⁰

Endeavour Scholarships and Fellowships

Indian students are eligible to apply for a small number of PhD and Masters scholarships under a sub-program of the Australia Awards – the Endeavour Scholarships and Fellowships. The Endeavour Scholarships are awarded annually by the Department of Education and Training to outstanding international students. In 2017, only 10 Endeavour Scholarships were awarded to international PhD students. Seven of the 10 students chose Go8 universities, but none were awarded to Indian students. Two Endeavour scholarships are awarded annually by the Australia India

Education Council (AIEC) to Indian students working on PhD projects aligned with the AIEC's objectives.⁶¹

Recommendations – Addressing financial barriers

It is recommended that:

5. The Go8 promote awareness among Indian students in India of existing forms of financial support that might be available to them if they undertake a PhD program at a Go8 university. This should include all forms of scholarship support and work opportunities provided by the university, as well as support available from relevant Australian Government programs.
6. The Go8 universities should seek to leverage the Australian Research Council's Linkage Program to establish research partnerships with industry in India, and encourage the recruitment and mobility of PhD students as part of Linkage projects. The Go8

60 Australian Government, Department of Foreign Affairs and Trade, 2015. (<http://australiaawards.gov.au/countries/Pages/Participating-countries-by-geographic-region.aspx>; and <http://dfat.gov.au/about-us/publications/Documents/aa-fellowships-previous-rounds.pdf>)

61 Australian Government, Department of Education and Training, 'Australia Awards-Endeavour Scholarships and Fellowships: List of Recipients', 2017. (<https://internationaleducation.gov.au/Endeavour%20program/Scholarships-and-Fellowships/alumni/Documents/2017%20Endeavour%20Recipients.pdf>)

should work with Indian partners to advocate for/take advantage of similar programs in India with an emphasis on PhD mobility.

7. A collaborative program be developed for Indian companies and Australian companies based in India to sponsor scholarships for Indian students to study in Australia on PhD projects relevant to their businesses.

8. The Go8 together with Indian university and industry partners, investigate innovative PhD modalities – including co-supervision – that integrate employment with the industry partner and PhD research collaboration between the Go8 and India aimed at solving an industry partner R&D problem.

9. The Australian Government leverage the Australia India Strategic Research Fund (AISRF) to support increased PhD mobility between Australia and India. Specifically, it should:

a. Commit to continued Australian Government funding of the AISRF beyond its current commitment to 2018–19.

b. Together with the Indian Government, review the grant assessment criteria for the AISRF with a view to making the recruitment and mobility of PhD students from both countries a compulsory requirement for some AISRF project grants.

c. With the Indian Government, review the timelines for AISRF grants to ensure they enable the recruitment of PhD students funded by AISRF.

d. With the Indian Government, design and fund a sub-program under the AISRF to allow short-term mobility for PhD students from both countries, along the same lines as the programs that already facilitate mobility for early and mid-career researchers.

e. Broaden the AISRF from its current exclusive STEM focus to include Humanities and Social Science (HASS) disciplines, with a requirement that projects address areas of mutual national need.

10. Go8 universities explore with Indian partner institutions possibilities for new jointly-badged PhD programs, along the lines of the IITB-Monash Research Academy. Any new jointly-badged PhD programs between Go8 universities and Indian institutions should include from the outset a 'reciprocal' program for Australian domestic PhD students to spend time working on their research in India.

11. Go8 universities implement mechanisms to facilitate Australian domestic PhD students conducting some of their research at Indian universities, including by:

- a. Designing and recruiting for PhD projects that address India-relevant research problems across all disciplines;
- b. Making a period of research at an Indian university or research institution a compulsory element of PhD projects that align with Indian research strengths;
- c. Encouraging Go8 academics to spend sabbaticals in India and take a PhD student with them; and
- d. Coordinating with Indian partner institutions to create formal

co-supervision programs that enable Australian PhD students to spend around one month in each year of their candidature, and up to 3 months in total, at an Indian partner institution.

12. Go8 universities make available travel grants to their Australian PhD students to spend up to three months as a visiting scholar at Indian institutions separate but related to their PhD studies. PhD candidature and funding would be adjusted accordingly to accommodate the time in India.

Addressing Regulatory and Administrative issues

Multiple aspects of visa processes and conditions have the potential to affect where international students choose to study. Many of these issues were found by the Review of the Student Visa Program undertaken for the Australian Government by Michael Knight in 2011 as reducing Australia's appeal to international students relative to other popular host countries. Since then, the Australian Government has introduced changes that address many of those issues.

Processing times and administrative burden of visa and admissions applications

Processing times for admission and student visas are likely to affect the choices of international students studying at all levels, given many might be applying to multiple institutions in multiple countries simultaneously. If processes take too long to complete, students might be tempted to accept an offer from another country.

This is perhaps most critical for students enrolling in coursework programs which have a fixed starting date.⁶² But although students can often commence a PhD in Australia at any time of the year, many international students are required to undertake coursework or preparatory courses before they formally begin their research. Whether this applies or not, long delays in visa and admissions processes clearly increase the possibility that talented students will look elsewhere.

The survey of perceptions of students from six countries undertaken by Australian Education International (AIE) in 2011 provides a guide to Australia's

competitiveness in this area, and found it to be quite high overall.

The IIE survey asked students to rank Australia, Canada, New Zealand, the UK and the US in terms of the length of time taken to move through three phases of the applications process:

- applying to and (being accepted by) an educational institution;
- preparing and submitting documentation for a student visa; and
- having that student visa application assessed by the relevant immigration authority.

Encouragingly, Indian students ranked Australia's educational institutions as the fastest to process an enrolment application. Both groups also ranked the US as the slowest. In terms of the time consumed by preparing documentation for a student visa, Indian students ranked Australia second of the five countries, behind New Zealand. Indian students once again ranked the US last for this phase. Indian students, also ranked Australia the fastest for the time that authorities take to process a student visa, and once again ranked the US as the slowest.

⁶² Michael Knight, 'Strategic Review of the Student Visa Program', report of review undertaken for the Australian Government, 2011.

Students from all six countries surveyed, including India, ranked Australia as providing the fastest complete process from application for admission to the granting of a student visa. Significantly, 59 per cent of Indian students said the overall time required to apply for an enrolment and obtain a visa for Australia made them more likely to choose Australia over other host countries.

Indian students also said Australian universities required the least amount of information of the five countries in applications for admission, with the US and the UK requiring the most of the five countries. This in part likely reflects that admission to US universities requires students to provide detailed financial information to the admitting institution, rather than to immigration authorities as in Australia. When it came to the amount of information required for visa applications, Indian students ranked Australia as the third most demanding of the five countries.

Overall, the administrative burden associated with preparing university admission and visa applications did not appear to be deterring Indian students from choosing Australia.

Conversely, 55 per cent of Indian students said the overall amount of information required to study in Australia would make them more likely to choose Australia as their study destination. This response was significantly higher than for the US (30 per cent) and the UK (33 per cent).

With governments around the world paying increased attention to the security considerations in assessing all visa applications, recently Go8 universities have reported issues with increasingly lengthy processing times for students visas for PhD students from overseas. In a small number of cases, would-be PhD students have had their visa applications denied on security grounds related to the topic of their research. Although affecting relatively small numbers, as always there is a risk that such cases can clearly have a wider negative impact if they lead Indian students to question whether they are welcome in Australia.

Respondents to the AIE survey also were asked whether the clarity and transparency of visa processes in each of the five host countries would make them more likely to choose

Australia. Again, Australia's visa system was well regarded by Indian students. The survey found that for 69 per cent of Indian respondents, the clarity and transparency of Australia's visa process would make them more likely to choose Australia as a country, whereas only 34 per cent said the same of the UK, 37 per cent of the US and New Zealand, and 42 per cent of Canada.⁶³

Work rights while studying

Many PhD students will want to take the opportunity to gain some experience as tutors or other roles while they are studying. Particularly for those who are funding their own study, undertaking some part-time or occasional paid work can clearly be a valuable source of financial support. However, arguably of greater value are the experience and skills that students gain from integrating themselves in the local workforce, whether it is on or off campus.⁶⁴

Until relatively recently, international HDR students in Australia were not permitted to work more than 20 hours per week. While undergraduate or coursework Masters students could work fulltime during semester breaks, HDR students could not. The rigidity of the visa conditions meant that HDR students could not work more than 20 hours in one or two weeks, even if they were not working at all for the remainder of the year, without risking cancellation of their visa.⁶⁵

This situation has now changed, and international HDR students in Australia enjoy unlimited work rights once they have formally commenced their research program. Family members of HDR students are also entitled to work, once the student has commenced their program, for up to 40 hours a fortnight. Whether or not restrictions on work rights would have deterred prospective HDR students from Australia, these changes have turned a possible negative into a positive.⁶⁶

⁶³ Lawson, 'Studying in Australia', 2011. Pp. 9–11.

⁶⁴ Dr Cate Gribble, 'IEAA International Employability Symposium: Outcomes Report, 2015'. Pp.7.

⁶⁵ Knight, 'Strategic Review of the Student Visa Program', 2011. Pp. 50.

⁶⁶ www.border.gov.au/Trav/Stud/More/Work-conditions-for-Student-visa-holders

Post-study work rights

International students from most major source countries, including India, consistently identify post-study work rights as another important ‘pull factor’ that can influence their choice of country.⁶⁷ While post-study work rights sometimes raise concerns about contributing to a ‘brain drain’ effect if too many international students transition from study to work to permanent migration in their host countries, for many international students a period of post-study work is not at all about achieving a migration outcome.

For many, an interest in working in their host country for a period post-graduation is driven by the financial imperative of repaying student loans, and/or a desire to enhance their employability in their home countries.

A recent report of a large survey of international graduates of Australian universities from 2012 and 2014 found that only 39.5 per cent of the 2012 cohort of graduates and 43.4 per cent of the 2014 cohort were still in Australia in 2015.

Recent changes to Australian regulations in this area have made Australia more attractive to international students who are motivated by opportunities for overseas work experience after graduation. Currently, international graduates of Australian universities do not have an automatic right to work following completion of their studies, but can apply for such a right. Under changes introduced in 2013, (following the Knight Review of the Student Visa Program), graduates of all Bachelor degree and higher level programs can apply for a Temporary Graduate visa (subclass 485) to work under the Post-Study Work stream.

The Post-Study Work stream was established to allow international graduates the chance to build on their study experience in Australia by working for two to four years. The maximum length of the period of work is determined by the level of the degree. Masters by research graduates can work for up to three years, and PhD graduates for up to four years.

Prior to the introduction of the Post-Study Work stream, international graduates were eligible only to work

⁶⁷ Knight, ‘Strategic Review of the Student Visa Program’, 2011. Pp. 39.

in one of the occupations on the Australian Government's eligible skilled occupations list, limiting the kind of work opportunities they could take up.⁶⁸ Graduates who obtain a Temporary Graduate visa can now work in any role for which an employer is willing to hire them. For PhD students, this might be as a post-doctoral research fellow, as a research assistant, or with a private company that allows them to use many of the transferrable skills acquired during their studies.

Although this arrangement does not guarantee international graduates post-study work rights—graduates still need to apply for the visa—the possibility it creates, and the lack of restrictions on the kind of work graduates can do, means post-study work rights in Australia now compare most favourably with those in other major host countries, including the US and the UK.

It should also be recognised that prospective international students have shown they are highly reactive to media reporting about changes to visa and immigration policies in host

countries, even when such changes do not apply to them.

This was demonstrated most recently in Australia by the Government's sudden announcement of changes to the temporary skilled worker (457) visas, which removed many occupations from the list of eligible occupations in which temporary foreign workers could be employed. These changes had no effect on the work rights of international students or graduates, who, as already mentioned, are not restricted in the kinds of work they can do. Despite this, however, the reaction in India suggested many prospective students assumed the changes did apply to them, and were taking this into account in choosing an overseas study destination.

For Australian PhD students to spend short periods of time as a visiting research scholar at an Indian university appears to be relatively unproblematic from a regulatory or administrative perspective. Foreign researchers can obtain a research visa as long as they are affiliated with an Indian university.

⁶⁸ Australian Government, Department of Immigration and Border Protection, 'Post Study work arrangements'. (www.border.gov.au/Trav/Stud/Post)

HDR students also do not have the same issues of recognition of credits that impede student mobility at an undergraduate level.

At the undergraduate level, student mobility between Australia and India is hampered by issues of credit recognition and quality assurance. These issues, along with student demand, partly explain why Australian universities have far fewer exchange agreements with Indian universities than with universities in North

America. One of the challenges is that Indian universities do not generally recognise credits obtained from other universities. Australian universities can also find it difficult to understand the quality assurance processes in India sufficiently to recognise credits from Indian courses.⁶⁹ Work on credit recognition and alignment of quality assurance processes in both countries has been initiated by the Australia India Education Council (AIEC), and is continuing.⁷⁰



69 Rizvi et al, 'India-Australia Institutional Collaborations in Higher Education', 2013. Pp. 21.

70 Professor Jane den Hollander and Professor H.A. Ranagath, 'Quality Assurance and Qualification Recognition Exchange Project. An issues paper: Aligning qualification recognition between India and Australia, 2013.

Recommendations - Addressing regulatory/ administrative barriers

It is recommended that:

- 13.** The Australian Government – in consultation with the University sector – should develop a special class of visa for researchers and PhD graduates to work in Australia that would help attract the best research talent from around the world.
- 14.** Both Australian and Indian Governments, notwithstanding in-country security provisions, minimise visa processing times and application requirements for academic and PhD student mobility between India and Australia.
- 15.** That a secretariat body be established to support Australian undergraduate students participating in in-country study programs in India. The body would be similar to that which already exists to oversee programs for Australian students to study in Indonesia and would provide administrative, immigration and pastoral care support for Australian students through offices in Australia and India.
- 16.** The Australian Government (Department of Education and Training) and the Indian Government (Ministry of Human Resource Development) schedule the next meeting of the Australia India Education Council (AIEC) as a matter of urgency. The meeting agenda should include a focus on mutual recognition of credits, quality assurance frameworks and increasing two-way PhD mobility between India and Australia.
- 17.** Go8 universities leverage their existing relationships with Indian partner institutions to implement credit recognition and quality assurance arrangements to enhance undergraduate student mobility through existing student exchange programs.
- 18.** Opportunities to access entrepreneurship training and experience be included in all Go8 – India PhD mobility initiatives. This could include through courses, participation in innovation/start-up incubator and accelerator programs and engagement with industry facilitated through the Go8 and partner Indian institutions.

Conclusion

Through the efforts of the Go8 bilateral task force established in April 2017, the Go8 is seeking to convince a far greater proportion of India's prospective quality PhD students to study in Australia. It is also seeking to have quality institutions in India made more accessible to Australian PhD students for niche study opportunities.

Increased PhD student and researcher mobility between the two countries is of significant economic benefit, and should be recognised as such by both Governments.

It is also self-evident that such increased mobility will enhance the already solid Go8/India long-term joint research projects that have delivered positive industry, agriculture, and medical health outcomes for Australia and India.

However, currently Indian PhD students are more likely to seek to study in the UK or the US. Through this current effort, the Go8 is taking steps to disrupt that historical situation. With seven of its members in the world's top 100 universities,



and as the group of universities which graduates more than half of Australia's PhDs each year, the Go8 is a proven ideal student and researcher destination.

Both Governments are now required to assist increased student and researcher mobility between India and Australia. Barriers, real and perceived, are required to be removed.

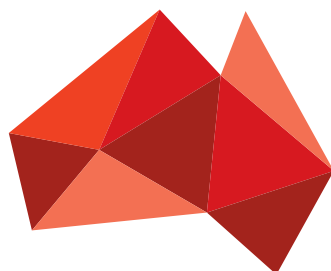
Accordingly, among a number of recommendations to ease mobility strictures, the Go8 bilateral task force is strongly recommending that this can help be achieved should the Australian Government establish a special class of visa for researcher and PhD graduates to counter the global perception, one very evident in India, that Australia is ambivalent about attracting the best research talent from around the world.

The taskforce is also keen to have both Governments ensure visa processing times and applications requirements for academics and PhD students do not impede cross-border mobility.

Australia, and specifically the Go8, must continue to work to convince Indian prospective PhD students to come to Australia by promoting greater awareness of the Go8's global ranking position. Jointly-badged PhD programs, such as that established by IIT-B and Monash Universities also have great potential to attract Indian students who may not be able to afford to undertake an entire PhD overseas.

Achieving an increase in the movement of Australian PhD students to India implies different challenges. Efforts can be directed towards identifying and creating opportunities for students to spend time at an Indian university or research institute as a visiting scholar. This will require support from Australian academic supervisors, and the building of greater awareness about the joint Go8/India research that is currently taking place in India.

The Go8 is committed to delivering the increased student and researcher mobility that both countries appear keen to foster.



GROUP OF EIGHT AUSTRALIA

MEMBERS



THE UNIVERSITY OF
**WESTERN
AUSTRALIA**



MONASH
University



Australian
National
University



THE UNIVERSITY
of **ADELAIDE**



THE UNIVERSITY OF
MELBOURNE



UNSW
SYDNEY



THE UNIVERSITY
OF QUEENSLAND
AUSTRALIA



THE UNIVERSITY OF
SYDNEY

go8.edu.au

