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Looking for Women in Australian Universities

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There is increasing debate and discussion about the shape of the workforce in Australian universities, which are facing ‘a crisis’ in staffing that will inhibit their ability to undertake teaching and research. The increasing number of reports dealing with staffing issues unfortunately do not disaggregate the workforce by sex. This paper presents a brief analysis of (mostly) publicly available data on university employment, exploring gender segregation in the university workforce, with a focus on vertical segregation amongst both academic and general staff. The paper compares segregation in academia against European Union figures, benchmarks academic gender structures against the Australian Public Service, and critiques a recent study (Diezmann & Grieshaber, 2010) that concluded that women and men are now being appointed in equal numbers to the professoriate. The work is part of a larger ARC Linkage project which will provide a more detailed report on employment in the sector. Our analysis to date shows that gender segregation has been reduced but is far from being eliminated.

Keywords: university employment, gender segregation, women

There is increasing discussion about the shape of the workforce in Australian universities, which are facing ‘a crisis’ in staffing that will inhibit their ability to undertake teaching and research (Hugo 2005) in an increasingly hostile climate of funding reductions, decline in international student numbers and other factors. The ageing university workforce requires a major workforce planning response, especially to use the existing labour force more effectively and to attract younger people. The increasing number of reports dealing with staffing issues (for example Bradley, 2008; Coates & Goedegebuure, 2010) unfortunately do not disaggregate the workforce by sex. The other feature of these reports is that they focus either exclusively or mainly on ongoing academic staff.

This paper presents a brief analysis of (mostly) publicly available data on university employment, exploring gender segregation in the university workforce, with a focus on

vertical segregation amongst both academic and general staff and inter-university differences (see May at this conference for a discussion of casual staff). The paper compares segregation in academia against European Union figures, benchmarks academic gender structures against the Australian Public Service, and critiques a recent study (Diezmann & Grieshaber, 2010) which concluded that women and men are now being appointed in equal numbers to the professoriate. The work is part of a larger ARC Linkage project which includes a survey of university staff to be conducted in approximately 20 universities in 2011. From the survey we will be able to provide a more detailed report on employment in the sector including discussion of the findings by selected university. Our work to date shows that gender segregation has been reduced but is far from being eliminated.

Background

Universities have been at the forefront in developing and implementing equity policies, but the literature analysing the impact of these policies is limited. While women form 63 per cent of the general staff workforce and 44.5 per cent of the academic workforce (DEEWR, 2010), patterns of gender segregation remain hidden. We argue it is necessary to disaggregate the data on the workforce by gender because, unless we understand where and how the workforce is concentrated, it is difficult to develop or implement effective workplace policies and practices.

The picture the data reveal is not a unique one and is indeed replicated in many industries (Anker, 1998; Padavic & Reskin, 2002). Women are more prevalent in the lower levels of both the academic workforce (levels A–B) and the general and professional staff (DEEWR, 2010; Jackson, 2010). Women comprise the majority of both the full-time non-academic and research-only workforces (Bell & Bentley, 2008: 10). Women are more likely to work part-time compared with men, with 75 per cent of the fractional full-time staff being women (DEEWR, 2010; University of Western Australia, 2008). In addition to this vertical segmentation, there are horizontal divisions for academic staff and within occupations for general and professional staff. For example, among academic staff women are concentrated in nursing, education, the humanities and social sciences and under-represented in disciplines such as medicine, dentistry, engineering and information technology (Bell & Bentley, 2008: 6). Horizontal segregation also exists within the professional and general staff with distinct gendered occupational groups.

In this paper we use data reported to the Department of Education, Employment and Workplace Relations (DEEWR) by each university. In 2009, academic staff comprised 45.6 per cent, and non-academic staff (the term used by DEEWR) represented 54.4 per cent of the workforce. While the split between academic and ‘non-academic’ staff has remained relatively constant over the past decade (in 1999 54.9 per cent of staff were ‘non-academic’), women’s presence has increased. In 2009 women were the majority of the workforce, at 54.6 per cent of employees, compared with 49.5 per cent in 1999. Women’s share increased for both categories of staff: from 59.2 per cent to 63 per cent for ‘non-academic’ staff and from 37.7 per cent in 1999 to 44.5 per cent of academic staff in 2009 (DEEWR, 2010; DETYA, 1999).

Professional and Administrative Staff

The general staff cohort is highly feminised. However, as in other industries, there are clear gender patterns of vertical segregation (see Figure 1). Women clearly dominate the lower levels until HEW level 7 but are under-represented at the higher levels of HEW 9, 10 and above 10, the latter being the most senior administrative posts in university employment that are not classified as ‘academic’. Women represent only 40 per cent of staff above HEW level 10, despite being over 60 per cent of the workforce.

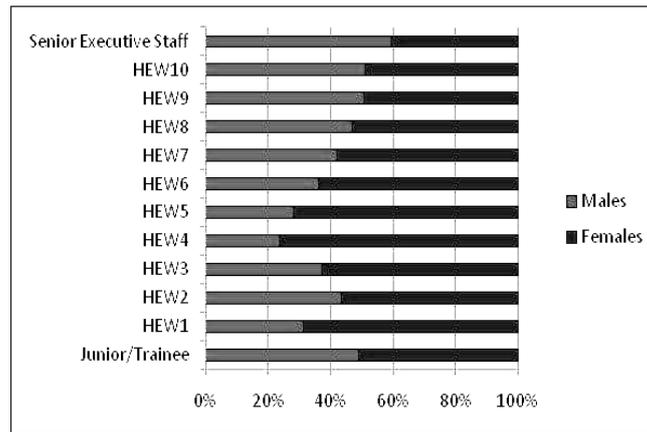


Figure 1: Percentage of Professional and Administrative staff by HEW level (2009)

Source: Jackson 2010

Interestingly, there is little consistency between universities (see Table 1). In 2009 only 26.3 per cent of HEW 10 and above at the University of Southern Queensland were female, whereas at the University of the Sunshine Coast the proportion was 63 per cent. There were 12 universities where women constituted 50 per cent or more at HEW 10 and above (Jackson 2010), which is the ‘sector target’ set by Universities Australia. The final column of Table 1 shows that at nearly a third of universities (12 of 38) the proportion of women at HEW 10 and higher has increased by at least 15 per cent since 2002 (the average increase being 7 per cent).

Table 1: Representation of women at HEW 10 and above, 2009

Source: Jackson 2010

University	No. staff HEW 10 and above	% women	Percentage point increase since 2002
University of the Sunshine Coast	27	63.0	23.0
University of Notre Dame	20	60.0	60.0
University of Newcastle	59	57.6	12.4
University of Melbourne	246	55.3	13.9
Australian Catholic University	32	53.1	5.3
Deakin University	89	52.8	10.0
Flinders University	27	51.9	23.0
University of Wollongong	69	50.7	16.0
Charles Darwin University	32	50.0	35.9
James Cook University	54	50.0	2.2
University of Canberra	44	50.0	3.6
Southern Cross University	20	50.0	15.8
Sector Target (set by Universities Australia)		50.0	

Queensland University of Technology	171	49.1	3.3
University of New England	25	48.0	16.0
Central Queensland University	49	46.9	9.9
University of Western Sydney	100	46.0	4.8
University of Western Australia	100	46.0	17.7
University of New South Wales	208	45.7	4.9
Australian National University	232	45.7	1.3
Macquarie University	90	45.6	5.5
University of Sydney	215	45.1	2.1
Monash University	254	44.5	4.4
University of Queensland	108	44.4	15.2
University of South Australia	57	43.9	9.1
Griffith University	104	43.3	1.5
University of Tasmania	37	43.2	14.6
Murdoch University	82	41.5	21.7
RMIT University	152	41.4	5.1
Swinburne University of Technology	61	41.0	-0.5
University of Adelaide	72	40.3	-9.7
University of Ballarat	15	40.0	1.5
University of Technology, Sydney	115	39.1	5.4
Bond University	24	37.5	No data
Edith Cowan University	46	37.0	8.4
Victoria University	65	36.9	20.3
La Trobe University	84	35.7	-3.2
Charles Sturt University	38	34.2	2.1
Curtin University of Technology	104	32.7	2.7
University of Southern Queensland	38	26.3	8.5

Overall, there are favourable trends which indicate that a mix of actions pursued by universities, unions and other bodies in the past decade have produced gains. However, gender segregation amongst general staff is still entrenched. Further, the high variations between individual universities require explanation. A potential factor in inter-university differences in female representation among *academic* staff – discussed later in the paper – might be the disciplinary composition in different universities, but this would do little to explain the patterns we observe amongst *general* staff.

Academic staff

Gender segregation is also entrenched amongst academic staff. The majority of FTE salaried staff at Level A (associate lecturer/tutor) are women, while the senior ranks of professor (Level E) and Associate Professor (Level D) are still the preserve of men (see Figure 2). On the positive side, the last 15 years have seen an increasing female share of academic employment at higher classifications, albeit from a low base. Figure 1 illustrates these trends from 1996–2008. Level A employment has been more than 50 per cent female for several years and is continuing to become more feminised, but increases in female share have been most evident at higher levels in the career spectrum. Over the period 1996–2008 (not presented in Figure 2), there was a 6 per cent growth in the ratio of women to total employees at Level A, whereas at Level E and among Deputy Vice-chancellors (DVC) and Vice-chancellors (VC), where the starting point was lowest, the ratio doubled. Women's share of Level E employment has consistently been lower than their share of DVCs and VCs positions (30 per cent in 2008), suggesting that access to this relatively small administrative elite may be more open to women than the highest level research positions. This pattern, unusual by comparison with other comparable sectors, is another issue that requires further investigation.

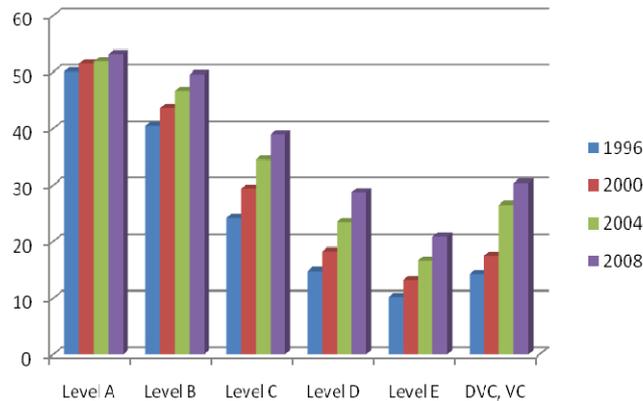


Figure 2: Percentage of women in academic positions by career level, 1996–2008
 Source: DEEWR Higher Education Statistics, unpublished data

Comparisons between the relative share of men and women across academic levels is frequently reported in the literature in ‘scissors’ graphs that typically show women’s overrepresentation among undergraduate students, the narrowing of that gender gap at higher levels of study, reversal to a male dominated gender gap at doctoral level, and a subsequent widening of that male dominated gender gap in academic employment with increasing levels in an academic career. Figure 3 illustrates this picture for Australia for the decade 1996–2006, showing both stasis and change over this period. Women’s overrepresentation among Bachelors degree graduates has remained at a constant level, while their representation among Honours graduates has increased, and the strong male dominance among PhD graduates evident in 2006 has disappeared. At Level A, women’s representation has remained a little over 50 per cent across the decade, increasing slightly. At higher levels of academic employment, Figure 3 shows a narrowing – but still marked – male dominated gender gap. (Note that this figure is based on cross-sectional not longitudinal data; that is, it is not tracking university graduates who enter academia.)

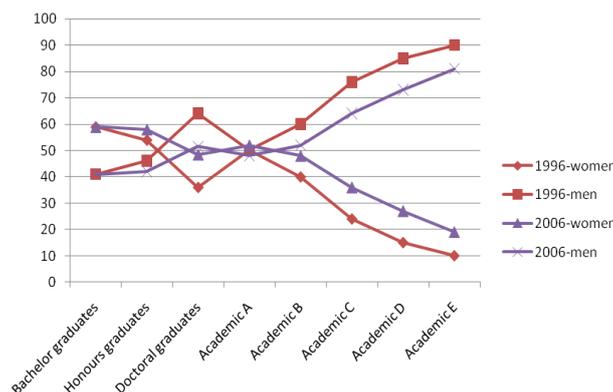


Figure 3: University graduates and academic career progression by sex: Australia, 1996 & 2006
 Sources: DEEWR 1997 (1996 student data); DEEWR unpublished data (for staff data)

Despite women increasing their share of positions above Level C, distinct gender patterns remain. A snapshot of academic staff (FTE excluding casual staff) in 2009 shows 70.2 per cent of women are in the two lowest levels A and B compared to only 52 per cent of men (see Figure 4). This compares to 1999 where 75.8 per cent of women were either at lecturer or associate lecturer compared with only half the men (51.2 per cent). Figure 4 clearly shows

that the male academic workforce in 2009 is more evenly spread among the four levels than women and has remained relatively stable since 1999.

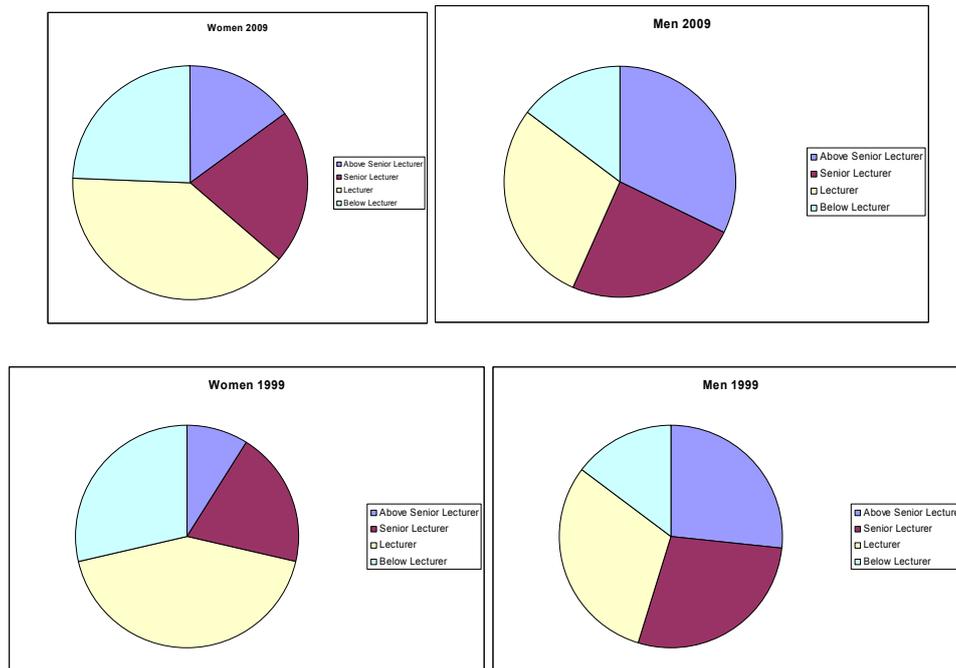


Figure 4: Number of full-time and fractional full-time staff, 2009 and 1999
 Source: DEEWR 2010 Table 2.6; DETYA 1999

International Comparisons

As Figure 5 shows, these patterns are not peculiar to Australia. Figure 5 compares 2006 data for Australia and the EU-27. ISCED5A programs (defined for the EU as those providing sufficient qualifications to enter into advanced research programs and professions with high skills requirements) compare with Australian figures for Honours programs. ISCED6 programs (defined for the EU as those which lead to an advanced research qualification, i.e. PhD) compare with Australian figures for doctorates by research. For the academic levels, Academic Grade C (defined for the EU as the first grade into which a newly qualified PhD graduate would normally be recruited) is compared with Australian figures for Level B positions. Academic Grade B (defined for the EU as those working in positions not as senior as top positions but more senior than newly qualified PhD holders) is compared with Australian figures combining both Levels C and D. Academic Grade A (defined for the EU figures as the single highest grade at which research is normally conducted) is compared with Australian figures for Level E positions. Although gender differences at early career levels are less stark in Australia than in EU-27, at the senior levels the Australian ‘scissors graph’ closely tracks the EU. This similarity at senior levels is somewhat surprising, given the strong public policy focus on equal employment opportunity in Australia for several decades.

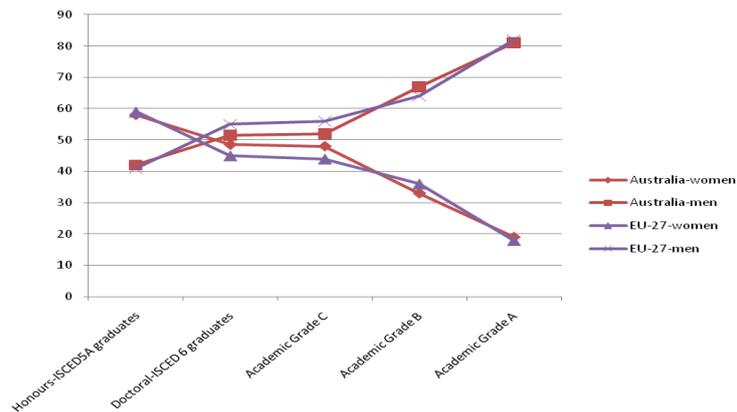


Figure 5: University graduates and academic career progression by sex: Australia and EU-27, 2006

Source: European Commission 2009; DEEWR Accessed September 2010; DEEWR unpublished data

Benchmarking equity in universities

What benchmarks can be used to assess gender equity in universities? Against the ideal model, of even gender representation across all levels, universities clearly fail. But what comparisons are available to assess what could be *reasonably expected* of universities now, given their gendered histories? We consider that an appropriate benchmark for Australian universities is the Australian Public Service (APS). Universities share many of the characteristics of other public sector organisations, including formalisation of procedures, above average unionisation, and coverage by equal opportunity legislation. Universities are more like the public service than like private sector corporations. The public service has a long history of presenting obstacles to women's advancement, and up until 1967 women were forced to resign upon marrying, so it is not an unreasonably high benchmark. More recently it has sought to implement policies aimed at offsetting women's disadvantage.

Table 2 compares the composition of employment by level of academic staff in universities and staff in the APS in 2009. For each institution, we place employees within four bands. Level A within universities, like Levels APS 1 to 3 (most are level 3), represents approximately the bottom 18 per cent of staff. Levels A and B together account for the bottom 52 per cent of salaried university staff, as do APS levels 1 to 5 of continuing APS staff. Level D and above account for the top 25 per cent of university academic staff, and Executive Level (EL) and Senior Executive Service (SES) account for the top 27 per cent of APS staff.

Table 2: Gender composition of employment by level, Australian universities and Australian Public Service, 2009

Source: DEEWR Table 2.9 2009; Australian Public Service Commission

Level	Number of employees		Proportion of all employees		
	Male	Female	Male	Female	Employees
Universities (a)					
Level A	3852	4782	14.8%	24.3%	18.9%
Level B	7431	7697	28.6%	39.2%	33.2%
Level C	6338	4249	24.4%	21.6%	23.2%
Level D & Above	8362	2921	32.2%	14.9%	24.7%
Total	25983	19649	100.0%	100.0%	100.0%
Australian Public Service (b)					
Levels APS1–3(c)	9657	17655	15.0%	20.4%	18.1%
Levels APS4–5	18077	33629	28.1%	38.8%	34.3%
Level APS 6	13949	16878	21.7%	19.5%	20.4%
EL & SES	22566	18460	35.1%	21.3%	27.2%
Total	64249	86622	100.0%	100.0%	100.0%

(a) academic staff

(b) continuing employees

(c) includes trainees and graduates

The lower levels of universities have a slightly higher female share than do the lower levels of the APS. Levels A and B of academia and Levels APS1-5 both account for 43 per cent all male employees in their institutions. These lower levels, however, account for 59 per cent of APS employees but 64 per cent of female academics. In contrast, 21 per cent of female continuing APS staff are in EL or SES levels, compared to just 15 per cent of female academic staff at level D or above. This 6.4 percentage point differential amongst females is over twice the 2.9 percentage differential amongst males.

The contrast between the APS and universities is illustrated by the fact that women comprise just 25.9 per cent of academics at level D or above, but they comprise 45.5 per cent of EL staff in the APS and even 37.1 per cent of the elite 1.7 per cent of APS employees who are in the SES. Women are a majority of the SES in some departments – such as the Department of Employment, Education and Workplace Relations, responsible for university policy, where they represent 58 per cent. Overall, the data indicate that gender equity in Australian universities amongst academic staff, as benchmarked against APS employment, is relatively poor. A comparison with the SES suggests that women are under-represented in university managerial elites, but are even more under-represented in the senior academic levels, when benchmarked against the APS.

Academic women at professorial level: variation among universities

There is wide variation among universities in the proportion of women at levels D and E (Jackson, 2010, using DEEWR data), as shown in Table 6. Percentages of women are higher at level D than level E. At Level D, the percentage of women ranges from 21 per cent at the University of Adelaide to 46 per cent at the University of Canberra. For Level E, the range is from 9 per cent at Central Queensland University to 41.5 per cent at the Australian Catholic University. In general the Group of Eight universities (the older 'sandstone' universities) have lower percentages than other universities of women in levels D and E.

Table 3: Number of staff and percentage of women at level E by university type, 2009

Source: Jackson 2010

University	No.	%	University	No.	%
New Generation Universities			Australian Technology Network		
Australian Catholic University	41	41.5	University of Technology Sydney	132	33.3
University of Ballarat	23	39.1	Qld University of Technology	387	26.1
University of Western Sydney	93	34.4	University of South Australia	113	25.7
Edith Cowan University	49	30.6	Curtin University of Technology	185	22.2
Southern Cross University	33	27.3	RMIT University	106	20.8
University of the Sunshine Coast	17	23.5	Group of Eight		
Victoria University	73	23.3	University of Melbourne	440	22.0
University of Canberra	43	23.3	University of Sydney	419	20.3
Central Queensland University	22	9.1	Monash University	380	20.3
Innovative Research Universities			University of New South Wales	701	17.7
La Trobe University	115	34.8	Australian National University	308	17.5
Griffith University	196	28.6	University of Adelaide	190	17.4
Charles Darwin University	22	27.3	University of Western Australia	234	16.7
Flinders University	82	26.8	University of Queensland	393	16.5
University of Newcastle	121	21.5	Other		
James Cook University	81	14.8	Deakin University	99	31.3
Murdoch University	71	14.1	Macquarie University	129	25.6
			Charles Sturt University	71	25.4
			University of Southern Queensland	32	21.9
			University of New England	57	19.3
			Swinburne University of Technology	79	19.0
			University of Wollongong	118	18.6
			University of Tasmania	118	17.8

Is there gender equity in entry to the professoriate?

The argument can be made that, while there is still a gender imbalance in university employment, particularly in the professoriate, this is an historical artefact that will redress itself over time. A recent study by Diezmann and Grieshaber (2010) claimed that a major milestone in gender equity has now been reached, in that they found ‘no statistical difference between the number of women and men appointed to the professoriate between 2005 and 2008’ and a ‘1:1 ratio of appointments of women and men appointed to the professoriate’.

Unfortunately this finding reflects a misinterpretation of the data collected. Diezmann and Grieshaber based their findings on a mail survey of 520 ‘new professors’ (including associate professors) at 33 universities between 2005 and 2008. Participants took part in response to an invitation from their university’s human resources department. Their estimated 1:1 ratio of appointments derives from the fact that, amongst their respondents, there were 240 men and 255 women, as well as 25 observations with missing gender data. This interpretation assumes, of course, constant response rates by gender. It is likely that the apparent milestone simply reflects differential response rates for men and women. A comment on the questionnaire that part of its purpose was to examine female under-representation in senior ranks at universities would be very likely to have induced a considerably higher response rate amongst women than men. Their results are consistent with response rates of, say, 24 per cent or so amongst women and 10 per cent amongst men, a difference which seems quite plausible in a survey of this nature. We assume by its absence from the publication that the researchers do not have information on the number of surveys distributed by gender and in the absence of such information it is difficult to conclude that this particular finding arises from anything other than a response rate differential.

A more reasonable way of estimating the ratio of female appointments to the professoriate is to examine the official census data on numbers of senior staff by gender for each year from 2004 to 2009, published by DEEWR. The data, shown in Table 4, indicate that, between 2005 and 2008 (the period of the Diezmann and Grieshaber study) the number of academics at levels D and above grew by 1779 (from 8759 to 10538). Over this period, growth in female employment at levels D and above was 698, while growth in male employment at these levels was 1081. Hence female employment growth accounted for 39 per cent of the growth in total employment at these levels over the period 2005–2008 – well below the Diezmann and Grieshaber estimate that 50 per cent of new professors and associate professors are female – and 41 per cent over the whole period 2004–2009.

Table 4: Numbers and growth in female employment, levels D and E, Australian universities, 2004–2009

Source: DEEWR Table 2.9, various years

Year	Numbers employed at D+ level				Growth in D+ level			
	Female	Male	Persons	Female share	Female	Male	Persons	Female share
2004	1656	6550	8206	20%				
2005	1881	6878	8759	21%	225	328	553	41%
2006	2115	7119	9234	23%	234	241	475	49%
2007	2398	7711	10109	24%	283	592	875	32%
2008	2579	7959	10538	24%	181	248	429	42%
2009	2921	8362	11283	26%	342	403	745	46%
movement from 2005–2008					698	1081	1779	39%
movement from 2004–2009					1265	1812	3077	41%

However, the true proportion of new professors and associate professors who are female is going to be well below 39 per cent. This is because many of the people appointed or promoted to positions at that level are replacing people who have exited, that is they have retired or moved on to another industry. Females will account for much less than 39 per cent of these exits, as they only represented 21 per cent of the professoriate in 2005, rising to 24 per cent in 2008. So at best, they would represent 21–24 per cent of exits, but in all likelihood they would represent a lower proportion, as men are likely to be closer to retirement age. In 2005, 23 per cent of the male professoriate were aged 60 or over, compared to just 16 per cent of the female professoriate. Thus it is necessary to take account of exits and their gender composition in estimating the proportion of new members of the professoriate who are female. We conducted 10 simulations with various assumptions about the rate of exits and the share of females among exiting professors. An example of one such simulation is in Table 5. Summaries of the ten simulation outcomes are available on request. The parameters varied between simulations are (a) the proportions of employees in levels D and above who exit the profession; and (b) the gap between female and average exit rates each year. These simulations showed that the proportion of new entries into the professoriate over the period 2004–2009, was very likely to be within the range 26 per cent to 33 per cent, with the average estimate around 29 per cent.

Table 5: Simulation of exits and entries based on census data, levels D and E, Australian universities, 2004–2009, assuming 10 per cent aggregate exit rate and 1 per cent gap between female and average exit rates

Year	Assumed exits				Resultant entries			
	Female	Male	Persons	Female share	Female	Male	Persons	Female share
2004	157	663	821	20%				
2005	179	697	876	21%	382	991	1374	28%
2006	202	721	923	23%	413	938	1351	31%
2007	230	781	1011	24%	486	1313	1798	27%
2008	247	806	1054	24%	411	1029	1440	29%
2009	281	847	1128	26%	589	1209	1799	33%
Total 2005–2008	679	2309	2988	23%	1309	3280	4589	29%
Total 200–2009	1139	3853	4992	23%	2281	5481	7762	29%

Note: Sums may not equal the totals of their components due to rounding.

We found it impossible to create a credible scenario in which there was a 1:1 female: male ratio for new entries to the professoriate. To contrive that result, one has to assume that a majority of exits from the professoriate were female, even though they accounted for only 21–24 per cent of members of the professoriate, a clearly implausible assumption. We must prefer the findings derived from the census data to the uncertain findings from a sample survey with unknown response rates.

Overall, these data indicate that women are not only underrepresented in the professoriate, they are also underrepresented in movements into the professoriate. Indeed, their share of entries into the professoriate, something around 29 per cent, is well below their share of the feeder group, Level C academics, of whom 40 per cent were female in 2009.

Conclusions

By disaggregating the data by gender our analysis has confirmed that vertical segregation by gender in both academic and professional and administrative staff continues. Women are the majority of professional and administrative staff in all levels up to HEW level 9. From HEW level 10 and above, that is the most senior professional and administrative positions, there are fewer women. There are also large variations between universities in their representation of women at the top of both the general and academic streams. Female representation amongst full professors in one university is as little as a quarter of that in another university. Universities underperform on gender equity when benchmarked against the Australian Public Service. The low number of women appointed to senior positions – both general and academic – in universities requires more detailed investigation. Our study also refutes the idea that new appointments to the professoriate are evenly balanced by gender – women are still substantially underrepresented in movement into senior academic positions.

Our research is at the preliminary stage but already we have identified issues needing further exploration. These include the differences in employment patterns between senior academic women and senior professional and administrative women based on university type, and consideration of the changing environment for both academic and general staff, for example, the increasingly ‘entrepreneurial’ climate and the impact of the Excellence in Research for Australia (ERA) process.

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