

THE GRADUATE LABOUR FORCE: GENDER AT WORK

Virginia Rapson

Today more young women than young men have tertiary qualifications and they are just as likely as young men to find work which uses these qualifications. They are, however, less well paid. Even women who work full-time and who have no children earn less than their male equivalents. Male graduates are more likely to become managers and this explains part, but not all, of the earnings gap.

BACKGROUND

An earlier analysis in *People and Place* charted the success of women relative to men in higher education during the 1980s and their subsequent position in the labour force by 1991.¹ The paper found that, although women still lag in enrolment in some higher education courses in non-traditional fields such as engineering, in aggregate there are now considerably more young women with tertiary credentials than young men. Young women were also converting their credentials into professional and administrative/managerial positions at similar rates to young men. The labour-force participation rates of male and female graduates aged 20-24 with bachelor degrees (or higher) in 1991 were also similar. In addition, these young women were less likely to be unemployed than the young men and, of graduates who were employed, 66 per cent of men and 61 per cent of women were successful in finding administrative, managerial or professional work.

By way of background, Table 1 shows the highest qualification level of men and women by age group for 1991. The remarkable progress of younger women in surpassing their male counterparts in attaining degrees is evident. Table 2 shows that degree-qualified women are more likely than less qualified women to remain in the labour force, even when they enter the age groups when they commonly would have to care for young children. Poole and Langan Fox consider Australian women's career outcomes in terms of the role of the individual within a particular historical-social context and suggest that qualifications (but not current job status) are influential in determining career commitment.² The findings in Table 2 are consistent with this view.

Qualifications appear to influence an individual's commitment to a career but are they sufficient to overcome gender-related problems in the workplace? Do women in different family situations in fact experience different work outcomes and do women who are not trying to manage couple or childrearing responsibilities compete on even terms with similarly qualified males? Unpublished ABS data are used to examine two age cohorts: those who are relatively new to the workforce (aged 20-29 years) and those who have had a chance to establish their careers (aged 30-39 years).

DATA

The present paper analyses unpublished data collected by the Australian Bureau of Statistics' (ABS) Training and Education Experience survey in mid 1993. Households in this survey were selected at random using a sample similar to that of the monthly population survey, which is described in *The Labour Force, Australia*.³ The Training and Education survey included all persons aged 15-64 years who had worked as wage or salary earners in the previous 12 months as well as those who, at the time on the survey, were employers, self-employed, unemployed or marginally attached to the labour force. It does not include people who had not been in the labour force over the previous 12 months and so gives no information on the characteristics of these people. The sample covered some 12,600 dwellings and yielded approximately 24,500 completed interviews.⁴ The ABS then extrapolated the information obtained from the sample to the general population. The value of the survey lies in the great range of data which it offers on qualification levels,

employment situation, income and related factors.

Table 1: Level of highest post-school qualification by sex and selected age groups, 1991 (numbers and percentages)

	Males			Females		
	20-24 yrs	25-34 yrs	35-44 yrs	20-24 yrs	25-34 yrs	35-44 yrs
Degree+ ^a	38,719	163,175	174,734	49,071	163,859	139,328
Diploma ^b	16,994	59,962	73,476	39,643	118,612	123,652
Skilled voc. ^c	117,187	333,212	288,042	23,720	42,545	31,843
Other/none	503,714	797,390	738,292	554,930	1,044,476	985,298
Total	676,614	1,353,739	1,274,544	667,364	1,369,492	1,280,121
Degree+	5.7	12.1	13.7	7.4	12.0	10.9
Diploma	2.5	4.4	5.8	5.9	8.7	9.7
Skilled voc.	17.3	24.6	22.6	3.6	3.1	2.5
Other/none	74.4	58.9	57.9	83.2	76.3	77.0
Total	100.0	100.0	100.0	100.0	100.0	100.0

Table 2: Labour-force participation rates by qualification level, sex and age, 1991

	Males			Females		
	20-24 yrs	25-34 yrs	35-44 yrs	20-24 yrs	25-34 yrs	35-44 yrs
Degree+	90	95	97	90	84	84
Diploma	92	96	97	92	80	83
Skilled voc.	97	97	96	87	70	73
Other/none	83	88	88	72	60	66
Total	86	92	92	75	65	70

^a Degree + refers to bachelor degree or higher and postgraduate diplomas

^b Diploma refers to undergraduate and associate diplomas.

^c Skilled vocational qualifications include trade certificates and apprenticeships.

Source: Census 1991, customised matrix, unpublished

To limit the influence of extraneous factors such as recognition of overseas qualifications on the outcomes,⁵ only persons who had an Australian degree or higher qualification were

selected for analysis in the following tables. People who had only overseas qualifications were excluded. However, some of those selected may have had overseas qualifications as well as their Australian undergraduate degree, higher degree or postgraduate diploma.

Because the Training and Education survey excluded people absent from the workforce for more than 12 months, and because the present analysis excludes people who had only overseas qualification, the survey data used here are not directly comparable to the census data used in Tables 1 and 2. Nevertheless, the survey allows further analysis of the relative outcomes for men and women who are, or have been recently, attached to the labour force. It is possible to document the experience of those women (and men) who were in the workforce, whether presently employed or seeking work, as well as those who were in the workforce at some time during the previous 12 months. The survey has an advantage over other published data sources in that the data are provided in unit record form and it is possible to formulate cross-tabulations across all variables. The only limitation is statistical reliability when cell size becomes small. The ABS cautions the use of cells which contain population estimates of fewer than 8,000.⁶

OUTCOMES

Number of graduates and fields of study

The survey confirms the 1991 census findings about the educational achievements of younger women. The data show that women aged 20-29 are clearly winning the tertiary-education stakes relative to their male counterparts. (See Table 3.) Despite the slightly lower labour-force participation rates for tertiary-educated women than tertiary-trained men, the survey records more graduates among women aged 20-29 than among men aged 20-29. Women are also progressing across most areas of professional study. Across the fields of study it is apparent that, in the 20-29 year age group, there are proportionally more women than men in all fields than there are in the 30-39 year age group. Men still dominate the engineering and computing fields but younger women are increasingly qualified in fields such as business and administration, law, science and mathematics which are dominated by men in the older age group.

Work

Professional work

A quick glance at the bottom row of Table 3 suggests that there is no glass ceiling. When it comes to success in finding employment in administrative/ managerial and professional jobs, there is little overall difference between the men and the women within the two age groups shown. Both sexes in the older age group achieve higher levels of success in finding work in these occupations than the younger age group. Female success in the 20-29 year old age group is partly due to the relatively high proportion (compared to men) with qualifications in the society and culture, health and education fields of study. In these fields a higher percentage of women find professional work than men. Nevertheless, the employment achievements of young women are not limited to these areas. Young women with qualifications in the natural and physical sciences are just as successful as similarly qualified young men in obtaining administrative or professional jobs. However, the success of women with qualifications in these fields is counterbalanced by the 20-29 year-old women with business and administrative qualifications who fall well short of men in achieving professional and administrative positions. Women aged 30-39 with such qualifications come a little closer to matching their male counterparts.

Table 3: Graduates with Australian qualifications and in the labour force within the last 12 months by field of qualification, gender, age, and type of occupation, 1993

Main field of highest qualification obtained	Estimated number of graduates with Australian degrees or higher	Percentage who are female	Percentage who have an administrative/managerial or professional ^b occupation with main period employer ^c	Percentage who are operating own business
--	---	---------------------------	---	---

(and subfields ^a)	20-29 yrs		30-39 yrs		20-29 yrs		30-39 yrs		20-29 yrs		30-39 yrs			
	Males	Females	Males	Females	20-29yrs	30-39yrs	Males	Females	Males	Females	Males	Females		
Business & administration	21,940	15,358	36,285	19,823	41	35	61	45	70	60	4	0	14	13
Health (incls para prof)	8,258	25,275	21,429	39,360	75	65	71	80	66	78	20	3	34	14
Education	14,531	31,451	24,527	45,022	68	65	74	76	80	82	0	2	10	8
Society & culture	22,008	40,449	40,504	37,992	65	48	38	44	69	67	5	4	19	11
(Law)	*(3,320)	*(5,055)	*(7,793)	*(5,144)	(60)	(40)	(46)	(69)	(47)	(96)	(0)	(12)	(52)	(4)
(Soc Sci, Arts, Hum'ties)	(13,943)	(31,592)	(24,251)	(29,145)	(69)	(55)	(33)	(40)	(71)	(59)	(5)	(4)	(12)	(14)
Natural & physical sciences	25,736	19,802	35,300	15,122	43	30	63	63	74	60	9	0	6	4
(Science, maths)	(12,980)	(14,493)	(24,212)	(13,431)	(53)	(36)	(55)	(53)	(67)	(55)	(8)	(0)	(6)	(4)
(Computer, info. science)	(12,756)	*(5,310)	(11,589)	*(1,691)	(29)	(13)	(71)	(89)	(91)	(100)	(8)	(0)	(6)	(0)
Engineering	15,317	*1,702	23,857	*870	10	4	78	100	74	100	0	0	12	63
Other fields	8,509	9,768	11,840	2,217	53	16	56	37	73	50	0	0	24	37
Total ^d	116,299	143,805	193,742	160,406	55	45	61	60	72	72	5	3	16	11

* Estimate too small to be reliable, subject to high relative standard error

^a The survey gives data for two classifications of field of qualification. The subfields shown are part of the alternative classification.

^b Health percentage includes para-professional occupations so as to include nursing

^c Main period employer is the employer for whom the respondent worked the most weeks for salary during the last 12 months and need not be the current employer.

^d All numbers are estimates by the ABS. The data in this table are estimates reflecting responses from all people included in the sample survey, that is both those in the labour force at the time of the survey as well as those who had been in the labour force over the previous 12 months (but were not at the time of the survey).

Apart from those who find administrative/managerial and professional work with an employer, a substantial proportion of graduates operate their own businesses, especially in the 30-39 year age group. These are more likely to be men than women. This is particularly true for those aged 30-39 with qualifications in the fields of health and law.

However, the achievement of professional and administrative/ managerial employment by itself does not fully convey the relative progress of men and women. There are at least two other dimensions.

Part-time work and family status

Regardless of age, the men are more likely than women to be employed full-time (see Table 4). The higher level of part-time employment for young women aged 20-29, together with their low unemployment rate, suggests that the high unemployment rate of young men may reflect a greater reluctance to settle for part-time work.

Table 4: Graduates by current labour force status, 1993

Gender and age	%	%	%	%	Labour force ^a	
	working full time	working part time	employed	unemployed	%	No.
Males 20-29	76	12	88	12	100	114,016
Males 30-39	94	4	98	2	100	191,517
Females 20-29	66	27	93	7	100	137,280
Females 30-39	59	36	95	5	100	150,518

^a These totals differ from those in Table 3 because they exclude those who were not in the labour force at the time of the survey.

Table 5: Graduate labour force, percentage with jobs, and with full-time and part-time jobs by age of youngest child

Age of youngest child	Employed		Employed full-time		Employed part-time		Total labour force	
	Males	Females	Males	Females	Males	Females	Males	Females
Aged 20-29 years								
Children aged 0-14	82	97	82	49	0	48	9,073	12,335
No chdn aged 0-14	89	93	75	68	13	25	104,943	124,945
Aged 30-39 years								
0-4	99	96	96	32	3	65	82,603	55,550
5-14	100	95	97	59	3	36	29,680	32,711
Children aged 0-14	99	96	96	42	3	54	112,283	88,261
No chdn aged 0-14	96	94	90	84	7	11	79,234	62,257

Conflicting work and parental roles do not appear to account for the high part-time rates for young women shown in Table 4. In 1993, 59 per cent of all births were to mothers aged under 30 years.⁷ However, few of the degree-qualified respondents aged 20-29 (ten per cent of females and eight per cent of male respondents) had started families. Female graduates who had started families could have withdrawn from the labour force earlier and so not be included in the survey, but the participation rates in Table 2 suggest that they would only be a small proportion of all female graduates.

As only nine per cent of the female graduates aged 20-29 who were in the labour force had children aged 0-14, the higher female part-time rate for 20-29 year old women is clearly not due solely to child-rearing responsibilities. But the situation is different for the women aged 30-39, where nearly 60 per cent of those in the labour force have children aged 0-14 years and only 42 per cent of this group work full-time (see Table 5).

By contrast, as Table 5 indicates, men with family responsibilities are more likely to be employed full-time than those without children.

Income levels for full-time workers holding degrees

Participation in full-time work is a key influence on achievement and performance in the workplace. So what are the family characteristics of the women who remain in the full-time work-force and how successful are these women in comparison with men? To answer these questions the focus narrows to those who were working full-time with their main period employer (that is the employer with whom they had worked the most weeks for wages or salary over the previous 12 months) or who were operating their own business at the time of the survey.

Table 6: Graduates in full-time work^a by field of qualification by age and weekly income

	Total full-time with main employer or who have own business		Per cent who earn more than \$720 per week	
	Males	Females	Males	Females
Aged 20-29				
Business & Admin	14,878	9,483	49.2	11.3
Health	*6,309	13,935	67.8	23.4
Education	9,415	21,666	6.1	10.4
Society & Culture	10,956	20,296	20.6	14.8
Natural & Phys. Science	18,838	14,323	33.5	23.1
Engineering	10,170	*	27.1	*
Total ^a	76,070	86,124	34.2	15.0
Aged 30-39				
Business & Admin	32,451	14,882	84.3	56.9
Health	18,528	20,650	69.1	49.3
Education	21,389	27,683	66.4	44.2
Society & Culture	33,241	24,702	52.4	54.0
Natural & Phys. Science	32,534	8,516	73.7	40.2
Engineering	21,694	*	89.3	*
Total ^b	170,810	98,905	71.3	49.3

^a With main period employer or with own business

^b Total includes other fields. Differences between totals in Tables 6,7 and 8 derive from estimating procedure.

Due to the constraints of the survey data, the indicator of income success used here to compare men's and women's incomes has been set at \$720 or more per week, a level which is well above the average full-time wage of \$680 for all men and \$546 for all women in May 1993.⁸ Table 6 indicates that the female graduates were less likely than male graduates to be in better paid jobs. More than 70 per cent of the 30-39 year-old full-time male employees and those who operated their own businesses earned more than this amount compared to some 50 per cent of similarly aged women. For the younger graduates the disparity is even

higher with more than twice the proportion of men (34 per cent) as compared to women (15 per cent) earning more than \$720 per week. The latter finding is not surprising given that males have dominated the high paying fields of dentistry, medicine, business and engineering. The crucial issue from the point of view of this analysis is whether this pattern holds when we control for field of study.

Table 6 also shows the high income earners as a share of full-time employees and own business operators by main fields of qualification. Although care is needed in reading too much into the table because of the small number of respondents in some cells, the data will allow some conclusions.

If the work situation were free of gender influences we would expect men and women to be earning similar income if working full-time. But this is not the case. For men aged 30-39, high proportions of those with qualifications in business and administration, engineering and the sciences (including computer science) are in the higher income group. Only women with qualifications in the field of society and culture do better than males as regards income but for men this is the lowest paying field of qualification. Likewise, younger (20-29 year-old) men do better than women apart from those with qualifications in the field of education.

Table 7: Graduates with full-time jobs (or own business) by age, income, family status^a and presence of children aged 0-14

	Number		% earning >\$720/wk	
	Males	Females	Males	Females
Aged 20-29 yrs				
Married with children	*7,100	*6,658	*69.9	*11.0
Married no children	18,004	25,398	46.0	22.9
Neither married nor parent	50,281	51,627	24.0	11.5
Total ^b	76,070	86,123	34.2	15.0
Aged 30-39 yrs				
Married with children	104,568	40,535	77.9	43.8
Married no children	30,307	21,009	60.7	51.7
Neither married nor parent	33,562	29,214	62.7	51.6
Total ^b	170,812	98,905	71.3	49.3

* Cell size too small to be reliable.

^a Survey does not specify whether husband/wife (married) includes de facto partners.

^b Totals include sole parents and not stated family status.

Links between family status and income

There is no doubt that family circumstances mediate women's participation in the workforce. But what can be said about the relationship between family status and incomes of those women who do continue with full-time work? Do women who enter family relationships perhaps compromise their careers for their male partners or children? Unfortunately the limitations of the sample preclude any analysis which controls for field of qualification by

family type but aggregate analysis by family type for full-time workers is possible.

The results are shown in Table 7. In the younger age group, the size of the sample with young children is too small to be reliable. Of the other women aged 20-29, wives without children do better than single women. Yet in the 30-39 year old female cohort there is no difference between these two groups. As expected, married women with children are less likely than other women to be earning high incomes.

But the data also show that even single women in established careers fail to reach the same income levels as men. The presence of children contributes to an explanation of differences between the various groups of women, but it cannot offer a simple explanation for differences between men and women for the sizeable numbers of women in both the 20-29 and 30-39 age groups who are not married and who do not have children.

The relationship between family status and income appears to be highly significant for men. For them, the presence of young children correlates with high incomes. In the 30-39 age group, only 63 per cent of single men and 61 per cent of husbands with no children were high earners compared with 78 per cent of the husbands who had young children.

Occupational status

Apart from family situation, one other clue to the different income levels of men and women who work full-time lies in the higher average weekly income of managerial workers compared to professional workers. Women employed in full-time managerial positions in 1993 earned an average of \$654 per week, well behind male managers' average earnings of \$872. Professional positions (non-managerial) were less lucrative, but the difference between male and female earnings was less, professional women earned \$697 compared to male professionals who earned \$798.⁹ (These figures are for the total labour force, regardless of age.)

Table 8: Graduates aged 30-39 in full-time work^a by income and occupational status

	Number		% earning >\$720/wk	
	Males	Females	Males	Females
Own business operator	24,401	12,261	63.4	25.8
Employee — occupation	30,635	8,419	89.6	72.2
Admin/managerial	90,974	58,218	73.3	51.8
Professional	8,577	10,717	40.5	57.0
Para-professional	16,227	9,289	53.8	34.7
Other				
Total ^a	170,814	98,904	71.3	49.3

^a With main period employer employees or own business

Table 8 shows only the 30-39 age group because there were very few administrative/managerial employees aged 20-29. In the 30-39 year-old group, a far higher proportion of men (18 per cent) than women (nine per cent) are in managerial positions and these men are more likely to be on higher salaries than the women. Women are more likely than men to do professional (59 per cent) and para-professional (11 per cent) work than men (53 per cent and five per cent respectively).

Apart from the para-professional group (which, for women, would mainly involve nursing), men are more likely than women to be earning high incomes across all types of work. However, men in management are the most likely to be well paid.

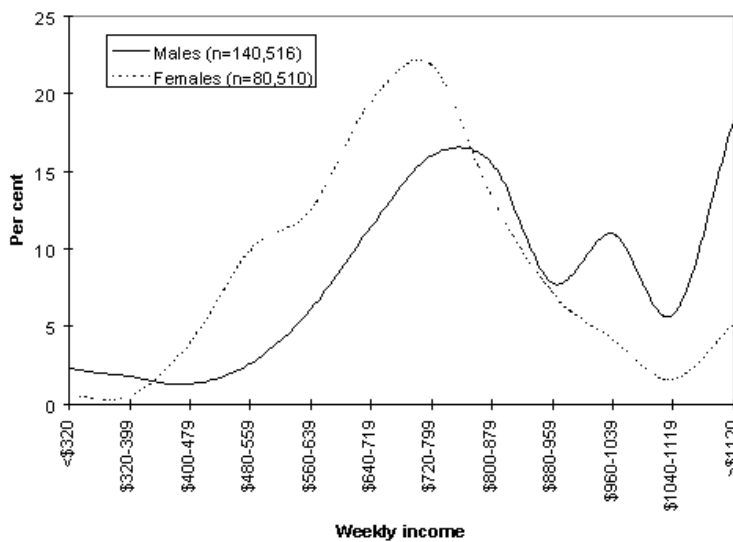
Income distribution

In the above discussion, high income has been defined rather austerely. Another aspect of income inequality is shown in Figure 1 which shows the income distribution of all tertiary-educated full-time employees aged 30-39. Not only do a lower percentage of women aged 30-39 earn more than \$720 per week, very few of them reach the positions which are rewarded by even more lucrative salaries. These are the domain of men.

CONCLUSION

Young women have made remarkable progress in higher education; the number gaining tertiary credentials now exceeds that of young men. They are also just as successful as young men in converting their qualifications into professional and administrative/managerial work. But when it comes to income they are not doing as well as men. By the time women enter their 30s, family responsibilities intervene. Though some female graduates leave the workforce, a high proportion remain in the workforce but work part-time. However, women who stay in the full-time workforce and care for young children do remarkably well compared to similar women without children. But family status could also be an intermediary variable shaping women's choices in their professional or managerial career paths. Poole and Langan-Fox found that women thought that the issue of whether to have children or not, and when to have them, was of great significance to their careers.¹⁰ The question of whether family status impedes women from achieving very high-paying positions could not be addressed by this data set.

Figure 1: Income of graduates aged 30-39, full-time employees only



This raises the question of why single women unencumbered by family responsibilities are not achieving as well as men. While single women are sometimes regarded as suffering fewer career restraints than married women with children, Poole and Langan-Fox claim that single women face more constraints than are at first apparent.¹¹ They also found that a number of unmarried women had unresolved role conflicts regarding their future family/work roles and concerns about their 'biological clocks'. Therefore men and women face not only different types of choices regarding their careers, but the timing of these choices was more crucial for women.¹²

One explanation for the lower incomes recorded by women lies in the rational/ economic decision-making perspective. This claims that it is rational for families to give priority to the husband's career because the sex-differentiated labour market gives greater monetary rewards to men. Employers' rational economic decision-making is therefore based on the assumption that women's labour-market attachment is weaker than men's. Consequently, employers fear their investment in training is more likely to be wasted on women as women are more likely to leave jobs.¹³ Thus the interaction of women's family/work role conflicts, both real and potential, together with employer decision-making, acts to foreclose women's career choices. Such a process would explain the existence of a glass ceiling. Is it operating?

The release of data from the 1996 Census next year will allow exploration of some of the unanswered questions implicit in this analysis. The Census data will provide more recent information and enable investigation into the intersection of characteristics such as family status, field of qualification, labour-force status, occupation and income which the present data precluded. The Census will also provide data on the workforce experience of more of the large number of young women who have attended university since 1987 when the number of women first exceeded the number of men enrolled in higher education.

Women's achievement in higher education has been a recent phenomenon and as the large cohort of tertiary-trained women moves through the workforce they will be operating in a new context where job opportunities and attitudes to family/work commitments have changed. Whether these women can benefit from new types of jobs in fields such as human resources, marketing and information technology remains to be seen.

Nonetheless, the existing analysis does show that, even though women are taking advantage of educational opportunities, they have not been able to glean the same advantages as men once they are in the labour force. Women's work-force experience does not match their initial educational achievement.

POLICY IMPACTS

Social policies such as equity programs have encouraged more women to enter higher education. However, some social policies may have unforeseen impacts which are inequitable. The data examined here show that over a lifetime female graduates can be expected to earn far less than their male counterparts. This is partly because of their tendency to fragmented and/or part-time labour-market participation, but it is also related to their failure to secure higher paying jobs. The recent changes to HECS (which introduced higher payments in a tiered structure for different fields of study and lower thresholds for repayments), together with women's lower income over their lifetime, mean that the costs of higher education are proportionally much higher for women. But the success of women in higher education has been a key factor in improving their economic well-being and social mobility. In future, as school leavers weigh up the benefits of higher education courses against the costs, will female enthusiasm for tertiary credentials diminish?

Alternatively, it may well be that, given their already high investment in tertiary education (\$9,900 to \$33,000, for undergraduate courses commenced in 1997), tertiary-trained women will minimise the conflicts inherent in the work/family nexus by raising fewer children.

References

- 1 B. Birrell, I. Dobson, V. Rapson and T. F. Smith, 'Female achievement in higher education and the professions', *People and Place*, vol. 3, no. 1, 1995, pp. 43-54
- 2 M. E. Poole and J. Langan-Fox, *Australian Women and Careers*, Cambridge University press, Melbourne, 1997, p. 227
- 3 Australian Bureau of Statistics (ABS), *The Labour Force, Australia*, Catalogue No. 6203.0
- 4 The sample differs somewhat from that of *The Labour Force, Australia* in the way which it includes and excludes certain people. See ABS, *Training and Education Experience, Australia*, Catalogue No. 6278.0, 1993, p. 49.
- 5 See B. Birrell and L. Hawthorne, *Immigrants and The Professions*, Centre for Population and Urban Research, Monash University, Melbourne, 1997, pp. 75-78.
- 6 The estimates are based on the information obtained from the occupants of a sample of dwellings. Because they are subject to sampling variability the estimates may differ from those that would have been obtained if all dwellings had been included in the survey. See ABS, *Training and Education Experience, Australia*, op.cit., p. 52.
- 7 ABS, *Australian Women's Year Book 1994*, Catalogue No. 4124.0, p. 23
- 8 ABS, *Average Weekly Earnings, States and Australia*, August 1993, Catalogue No. 6302.0

9 ABS, *Australian Women's Year Book 1994*, op. cit., p. 99

10 Poole and Langan-Fox, op.cit., p. 222

11 *ibid.*, p. 225

12 *ibid.*, p. 222

13 *ibid.*, pp. 38-39

Back to [Contents Vol. 5 No. 2](#)

Back to [People and Place Home Page](#)