

DEMOGRAPHY AND ACADEMIC STAFFING: AN INTERNATIONAL PERSPECTIVE



Paper prepared for
ACU Conference
Stellenbosch
South Africa
March 2004

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INTRODUCTION

The quality of a university's research and teaching activity are heavily reliant upon its ability to recruit, develop and retain academic staff that are able to not only be productive in their teaching and research but are at the forefront of innovation and change in their areas of specialisation. A neglected dimension of this task is its demography. University academic staff generally is not a demographic cross-section of the workforce and a knowledge of the demographic cross-section of the workforce and a knowledge of the demographic dynamics of a university's academic human resources can assist planners in ensuring the maintenance and enhancement of high quality teaching and research outcomes.

The present paper begins with an analysis of global demographic trends and discusses their implications for university staffing over the next two decades. It considers the differences between Europe, Africa, Asia, North America and Australia and focuses especially on the Australian situation. The second part of the paper presents the case of the changing demography of a single Australian situation. It shows how university records can be utilised to analyse the current demographic structure of the academic workforce and to project it ahead pointing out pitfalls and difficulties in the process. The extent to which such processes can be utilised to anticipate staffing problems, ensure continuity in high quality activities, minimise staffing disruptions, facilitate smooth succession and better plan recruiting are examined. The final section of the paper explains in detail the Human Resources implications of demographic change with particular reference to the higher education sector.

THE ISSUE

A prediction from Roderick Floud, President of Universities UK is that in the next decade an estimated 230,000 new academic staff will need to be recruited in New Zealand, Australia, Canada, the United States and the United Kingdom (MacLeod 2002).

In the UK alone an additional 19,000 academics are required over the next 10 years for replacement purposes and a further 17,000 if government plans to encourage 50% of potential students to enrol in Universities are realised. In Canada the federal government in 1997 recognised the need to strengthen the research and technology capabilities of its universities, colleges, research hospitals and other not-for-profit organisations with a capital investment of \$C3.65 billion (Strangway, 2004). Part of this program are initiatives to attract academics and discourage the brain drain to the USA. The federal government has allocated \$C900 million to establish 2,000 research professorships by 2004/5. In Ontario alone 13,500 new faculty staff will be required as a result of retiring professors and increased student demand for higher education. (*ACU Survey 2001-2003 P.3.*)

It is clear that the next few decades will see an increase in the demand for scientists, technologists and academics in More Developed Countries (MDCs). However, this is occurring at a time when:

- (a) There is an increasing realisation that increasing the quantity of national human resources is absolutely crucial for improvements in national prosperity.
- (b) Retirements will reach unprecedentedly high levels as the baby boom generation begins to enter their 60s.
- (c) New entrants to the academic and scientific workforces are at low levels due to reductions in fertility and students being diverted into non-research/academic careers.

This is not only the case in MDCs but also in many Less Developed Countries (LDCs) where the added problem of brain drain has had an impact. Accordingly, many countries will face challenges with respect to recruiting academics and scientists over the next few decades. This paper explores the demography behind these challenges firstly by reviewing impending demographic change in a

cross-section of countries. Secondly, it examines the changing demographic profile of a single Australian university and examines some of the human resource implications of that profile.

THE AGEING POPULATION

Every country in the world is ageing in the sense that the proportion of its population aged 65 years and above is anticipated to increase over the next three decades (United Nations, 2003). Table 1 shows that in MDCs the number of persons aged 60+ already outnumbers those aged less than 15 and will be double that number in 2050. However, Table 1 also indicates that in LDCs the aged population is increasing faster than the youth population so that by 2050 they will be more or less equal in number. Table 2 shows that in all areas of the world the aged population will not only grow faster than the number of children but also than the number in the workforce ages.

Table 1: Changes in Proportion of Population Aged Less Than 15 and 60+, 1950-2050

Source: *United Nations, 2003, 16-17*

	Percent Aged 0-14			Percent Aged 60+		
	1950	2000	2050	1950	2000	2050
World	34	30	20	8	10	21
MDCs	27	18	16	12	19	32
LDCs	38	33	21	6	8	20

Table 2: Average Annual Growth Rates of the Total Population and the Population in Broad Age Groups, by Major Area, 2000-2050 (Medium Variant) (Percentage)

Source: *United Nations, 2003*

Major Area	Age Group				Total Population
	0-14	15-59	60+	80+	
World	-0.04	0.72	2.29	3.39	0.77
More developed regions	-0.26	-0.32	1.06	2.24	0.04
Less developed regions	-0.01	0.92	2.79	4.20	0.91
Least developed countries	0.99	2.19	3.24	3.90	1.84
Africa	0.78	1.98	3.03	3.85	1.64
Asia	-0.28	0.63	2.61	4.06	0.70
Latin America and the Caribbean	-0.36	0.70	2.98	4.09	0.78
Europe	-0.62	-0.71	0.81	2.08	-0.28
North America	0.30	0.49	1.65	2.39	0.70
Oceania	0.06	0.66	2.02	2.83	0.78

It is useful to examine the outlook for a range of different countries with respect to ageing. Table 3 shows a range of countries and the proportions of their population aged 65 years and over. In the developed nations, 2050 will see over a quarter of the population aged 65+ while in LDCs the current levels previously in MDCs will apply in 2050. All nations are going to experience an ageing of their population and it is in LDCs that the highest rates of growth of the aged population will occur.

Table 3: Selected Countries: Percent of Population Aged 65+, 1995, 2000 and Projected 2050

Source: *United Nations, 2003*

Country	1995	2000	2050
PNG	2.7	2.3	8.8
India	4.5	4.9	14.4
Malaysia	3.9	4.1	15.7
Indonesia	4.3	4.8	16.9
China	6.1	6.8	22.9
New Zealand	11.5	11.8	22.9
USA	12.3	12.3	20.8
Canada	12.0	12.6	25.7
Sweden	17.5	17.4	27.1
UK	16.0	15.9	23.3
Australia	11.9	12.3	23.9
Switzerland	14.9	16.0	30.7
Netherlands	13.2	13.6	24.7
Japan	14.6	17.2	36.5
Greece	15.6	17.5	33.2
Italy	16.6	18.1	34.4
Hong Kong	9.7	10.7	29.6

In the following section the changes in the age distribution of a number of countries over the 2000-2020 period will be examined. It is important to point out that the trends depicted are almost certainly likely to occur. This is particularly true of the ageing trend since the aged population of 2020 has already been born – they are just not all aged yet. We can readily predict the numbers who will move into the older ages from examining the current number of people aged in their 40s and 50s in the countries.

Figure 1 depicts the age structure of several developed countries in 2000 and the anticipated structure in 2020. It can be readily seen that there is a substantial redistribution likely to occur between the working age and older age groups over the next twenty years. The pattern is especially marked in Hong Kong where fertility is low and there is little net immigration. Also, in South Africa the fertility differences between the three main groups in the population have resulted in a younger age structure than the other countries in Figure 1. Nevertheless, it is clear that significant ageing will occur in South Africa.

Figure 2 depicts the likely shifts in the age structure of a number of African nations. In these countries the age structures are quite young in 2000, reflecting high fertility and high mortality. There will be a substantial reduction in the proportion of their population who are in the childhood ages in 2020. However, most of the growth will be in the workforce ages. While there is a growth of the older population the key issue in these countries is the massive growth which will occur in their

workforces and the great pressure this will place on local labour markets and is also likely to lead to more outmigration. In some of these countries the devastating impact of HIV/AIDS on their adult populations are also in evidence.

Figure 3 shows the age pyramids in 2000 and 2020 for some Asian and West African nations as well as Jamaica. In these countries the impacts of declining fertility are more in evidence than is the case in Figure 2.

Figure 1: Age-Sex Composition of the Population of Australia, Canada, United Kingdom, Hong Kong, South Africa and New Zealand, 2000 and Projected 2020

Source: *United Nations, 2003*

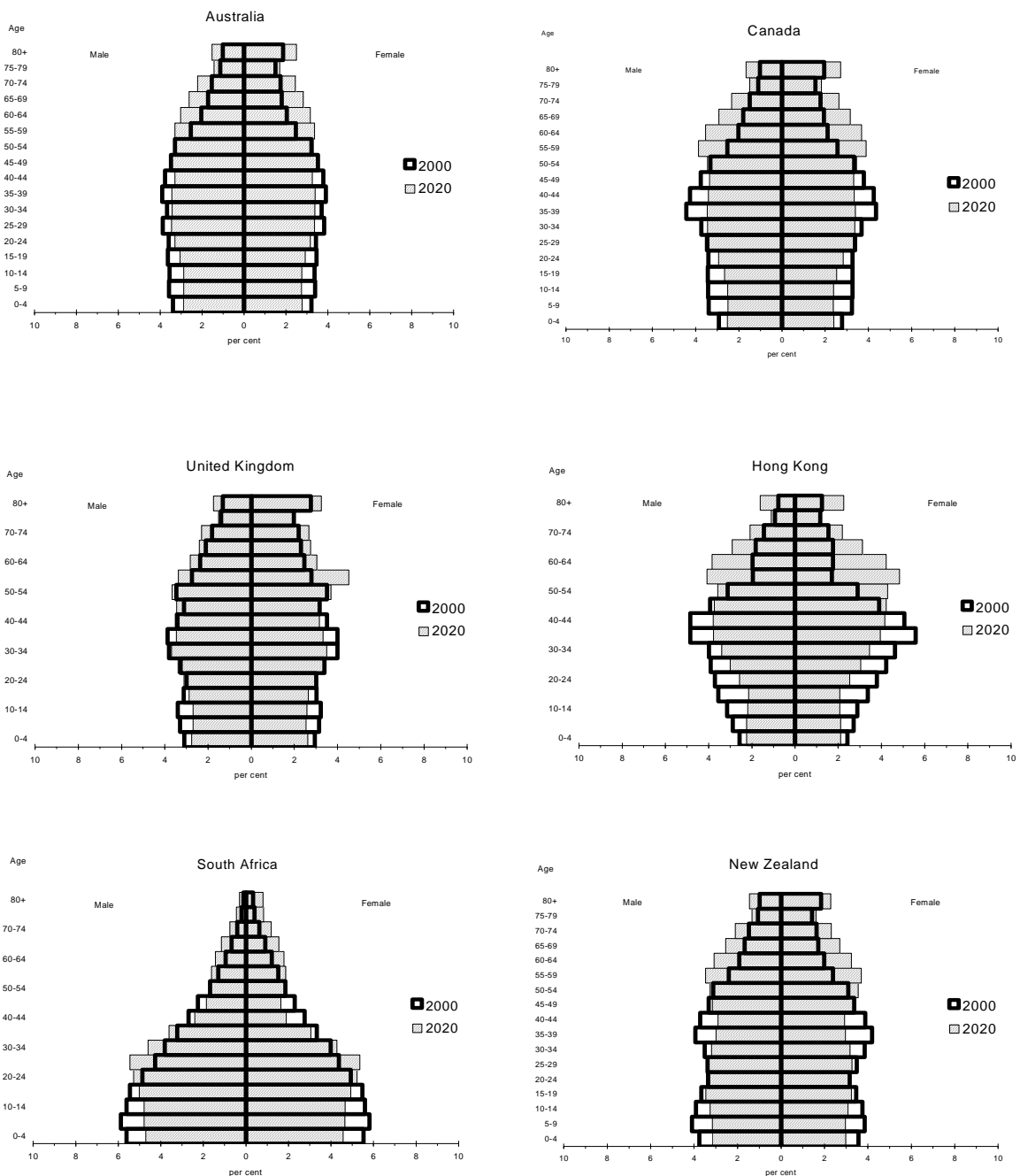


Figure 2: Age-Sex Composition of the Population of Kenya, Botswana, Zimbabwe, Tanzania, Uganda and Cameroon, 2000 and Projected 2020

Source: *United Nations, 2003*

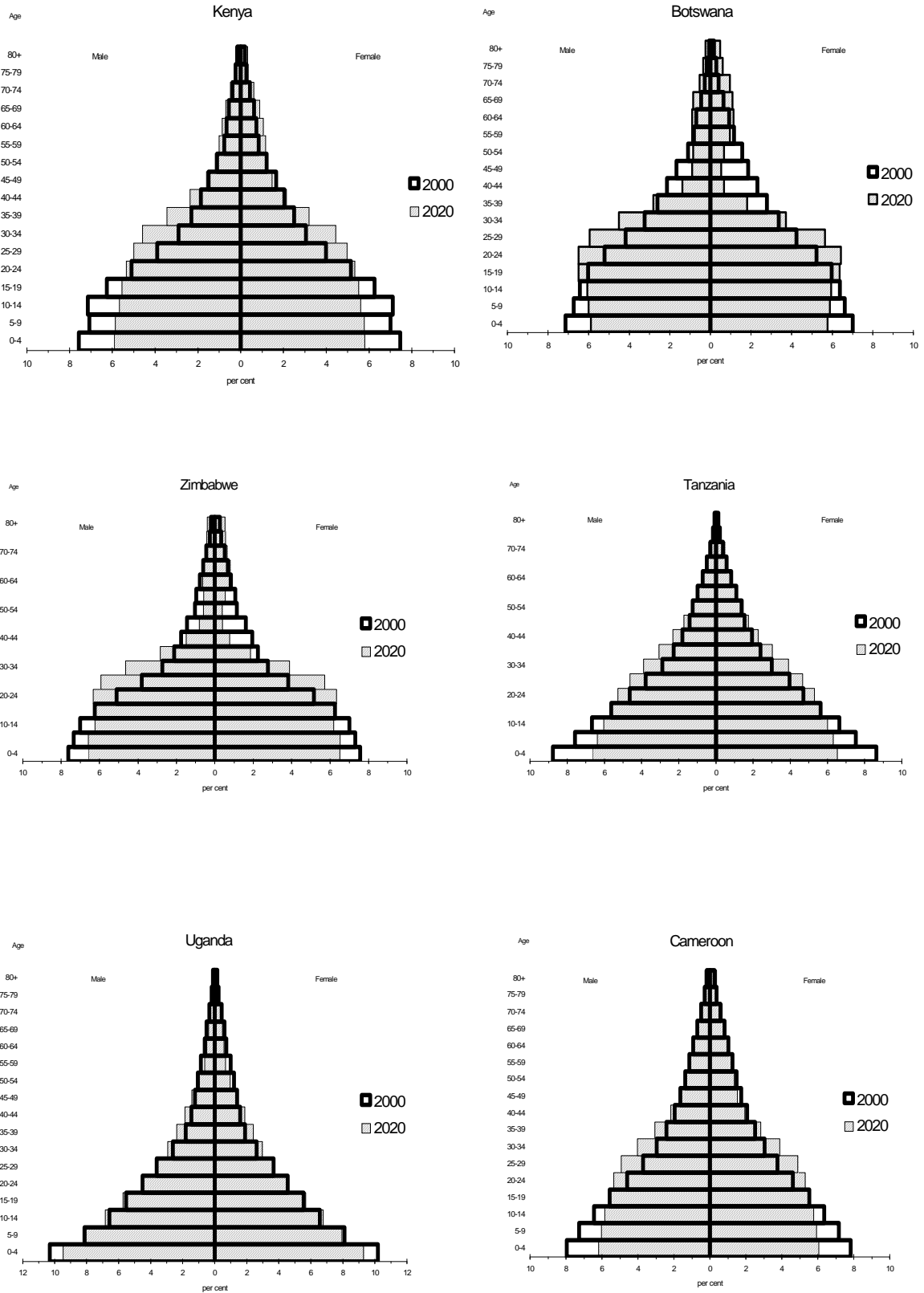
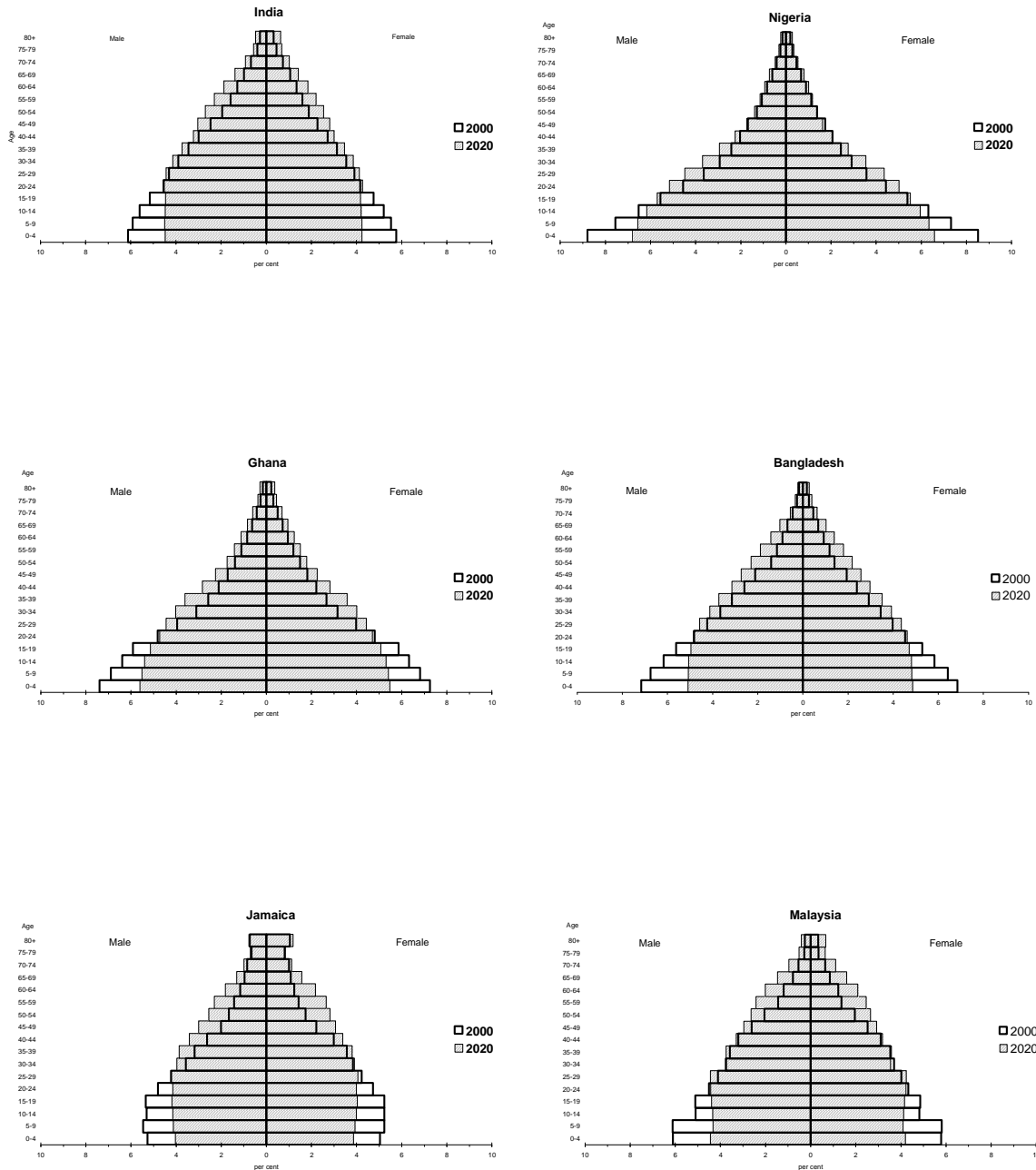


Figure 3: Age-Sex Composition of the Population of India, Nigeria, Ghana, Bangladesh, Jamaica and Malaysia, 2000 and Projected 2020

Source: *United Nations, 2003*



In India, the second largest nation in the world with 1/6 of the globe's population, it is clear that there will be a significant growth in the proportions of the population who are in the working and in the older ages at the expense of children. Similar patterns are evident for Malaysia and Bangladesh.

THE ACADEMIC WORKFORCE IN AUSTRALIA

Over the next 3 decades Australia faces both a substantial growth in its aged population and an increase in the proportion they make up of the total population. Associated with this is an ageing of

the workforce. However, Figure 4 overlays the age structure of Australia's academic workforce with that of the total Australian workforce and three things are striking:

- The academic workforce is older than the total workforce.
- It is concentrated in a few age groups in a pattern known by demographers as age heaping.
- Males outnumber females, especially in the older ages.

The older age structure is a function of the fact that Australian universities underwent massive growth of academic staff in the 1960s and 1970s due to the passage of the large post-war baby boom cohorts through the late teens and early twenties age groups over that period. However, not only is the age structure of the academic workforce certainly old but it has got older over the last few years.

Figure 4: Age-Sex Structure of Total Academic Staff and the Total Australian Workforce, 2000

Source: Hugo, 2002

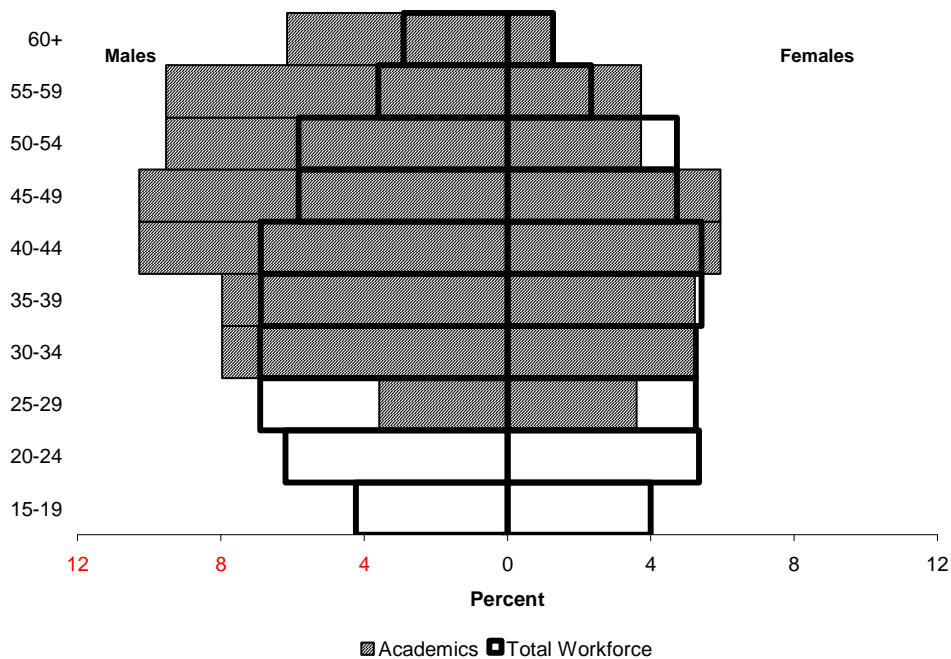


Figure 5 indicates that over the 1996-2000 period there was growth in the older ages and a decline of workers in their 20s.

A number of elements flow from the three defining features of the contemporary academic workforce. Firstly, with respect to the mature age structure. Much is said about the negative aspects of an older workforce and the arguments are presented in Table 4. It is often suggested that productivity declines with age and that the areas of expertise of some older staff may be less relevant than they were when they were recruited and some new areas of significance cannot be taught by older staff. It is suggested that some older workers may be less amenable to change than younger staff.

Figure 5: Age-Sex Structure of Total Academic Staff, 1996 and 2000

Source: Hugo, 2002

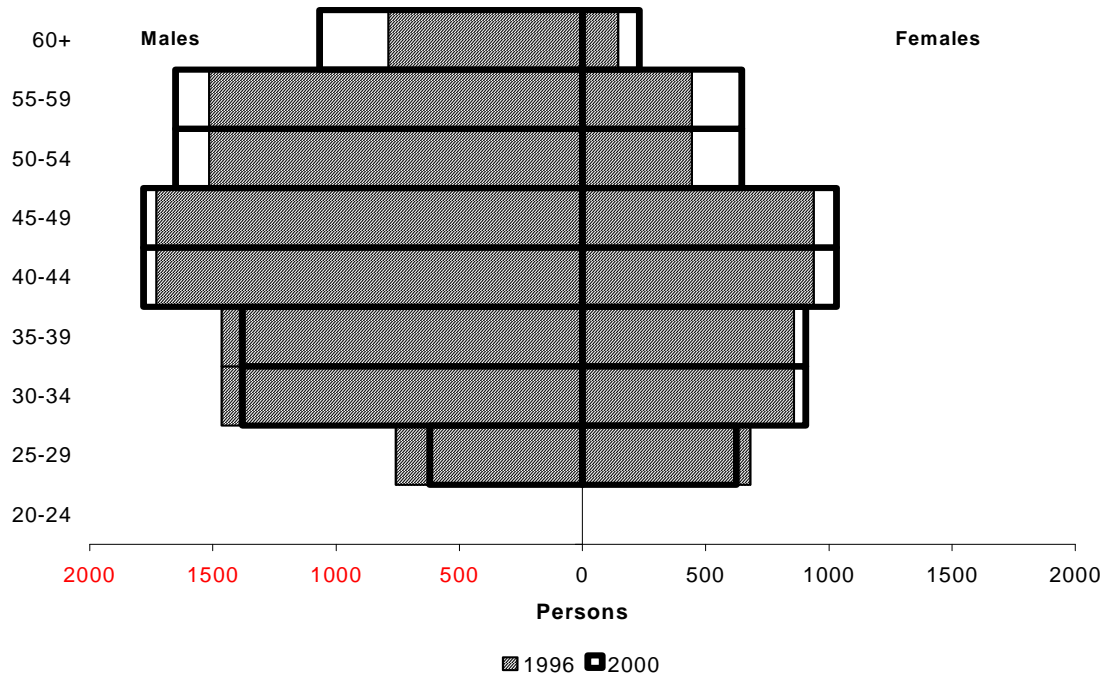


Table 4: Negative Aspects of An Ageing Workforce

Declining productivity
Growing mismatch with new teaching/research areas
Generational succession problems
Increasing inability to adapt to change
Problems in relating to students
High cost profile
Difficult to introduce equity initiatives
Lack of opportunity for young academics
Loss of potential high quality young academics to other areas
Loss of potential high quality young academics to overseas

They are more expensive in that they are generally at higher salary levels than younger staff. There may be a lack of opportunities for younger academics so they may move elsewhere or move into non-academic careers. While all of these issues are contestable, there is some evidence to support them. Less often we discuss the positive aspects of an older workforce. Table 5 indicates some such areas. Undoubtedly more experienced academics often will be more able to handle large teaching loads than new graduates. Indeed, the increase in teaching loads in Australia in the last decade or so may have been dependent to some extent on the high average level of experience in the academic workforce. Also, there are many high performing older academics.

Table 5: Positive Aspects of An Ageing Workforce

<p>Able to handle increases in workload</p> <p>Experience, perspective</p> <p>High levels of performance in some areas</p>
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Perhaps the greatest problem in the Australian academic age structure is not so much the preponderance of older academics but a lack of balance in the age structure of the workforce or the age heaping in the academic profile. As Table 6 indicates, there are several negative aspects of age heaping in a workforce profile. There are considerable problems that can arise in continuity in academic programs if there is a substantial loss of staff at a single point in time. There are real advantages to having a judicious balance between older and younger workers. It also allows a much greater chance that new ideas and opportunities can be continually introduced.

Table 6: Negative Aspects of Age Heaping in a Workforce

<p>Succession/Continuity Problems</p> <p>Lack of Balance Between Experienced/ Inexperienced Workers</p> <p>Problems in a Continual Introduction of New Ideas/Approaches</p> <p>Lack of Administrative Flexibility</p>

THE UNIVERSITY OF ADELAIDE STUDY

The University of Adelaide is typical of Australian universities in that its academic workforce has a mature age structure. Table 7 shows that the Academic Staff in 2000 had a median age of 47.1 and more than a third of the staff were aged 50 or more.

Table 7: Selected Australian Universities: Age Distribution, 2000

	Percent Aged Less Than 40	Percent Aged 50 and Over	Median Age
Curtin University of Technology	27.2	38.9	46.7
Edith Cowan University	17.8	45.1	48.7
Monash University	38.3	30.5	43.8
Murdoch University	30.3	34.4	45.6
Australian National University	31.4	35.6	45.6
University of Adelaide	29.7	38.2	47.1
University of Melbourne	38.1	29.5	43.7
University of NSW	30.8	35.7	48.7
University of Queensland	39.8	29.7	43.4
University of Sydney	31.1	38.0	46.1
University of WA	35.9	30.2	44.2

This is evident in Figure 6, which compares the current University of Adelaide's academic staff's age-sex composition to that of the national academic workforce at the 2001 census. It is apparent that Adelaide's staff is somewhat older than the national academic workforce. Accordingly, the University's administration undertook a staff-profiling project with the following objectives:

- Inform the members of VCC of the anticipated age, gender and classification distributions of staff by 2008, based on previous trends and if no major interventions are implemented by management.
- Assist Faculty and Division program and staff planning by disaggregating this information to the School and Division level, where there are sufficient staff for the model to be applied.
- Identify the HR issues from the changing profile, highlighting areas of risk and identifying potential interventions at University and Faculty level.
- Pilot the application of the demographic model to assist in human resources planning and policy in The University of Adelaide.

The study sought to anticipate the changes in the academic workforce over the next five years taking into account two categories of staff as follows:

- Academic tenured (564 persons in 2003- 72.7% males)
- Academic contract (474 persons in 2003- 63.9% males)

A cohort component projection technique was used. Male and female staff by age were "aged" forward five years for each category taking into account rates of attrition to establish what the likely loss of staff will be over that period as a basis for assessing the recruitment challenge to the university. The methodology employed was as follows:

- Divide the 2003 staff in the four groups into five-year age-sex groupings.
- Establish the age-sex specific rates of attrition in recent years (averaged over three years 2000-2002) excluding redundancy packages offered to staff.
- Apply these attrition rates annually to the existing age-sex structures for the 5-year period 2003-2008.
- Sum the projected age-sex groups to provide totals for each year.

The overall results are presented in Figure 7 and Table 8 indicating a decline in academic tenured staff. For academic contract staff there was a more gradual decline. However a more sophisticated analysis needs to be made of the contract staff that factors in:

- The length of existing contracts.
- The rate at which people leave contracts before they are completed.
- The rate of renewal of contracts.
- The rate at which fixed term contract positions are made into continuing positions.

Figure 6: Composition of Age-Sex Structure of Academic Staff of the University of Adelaide, 2003 and all Australian Academic Staff, 2001

Source: *The University of Adelaide and ABS 2001 Census*

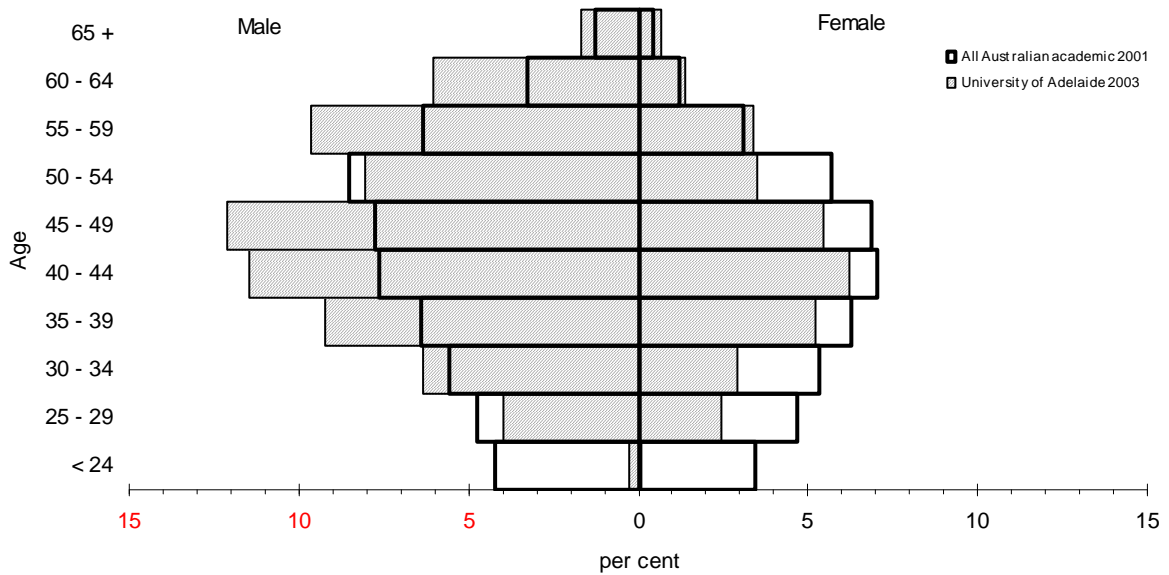


Figure 7: Projected Numbers of Academic Staff by Type of Employment, 2003-2008

Source: *The University of Adelaide, Human Resources 2003 and GISCA projections 2008*

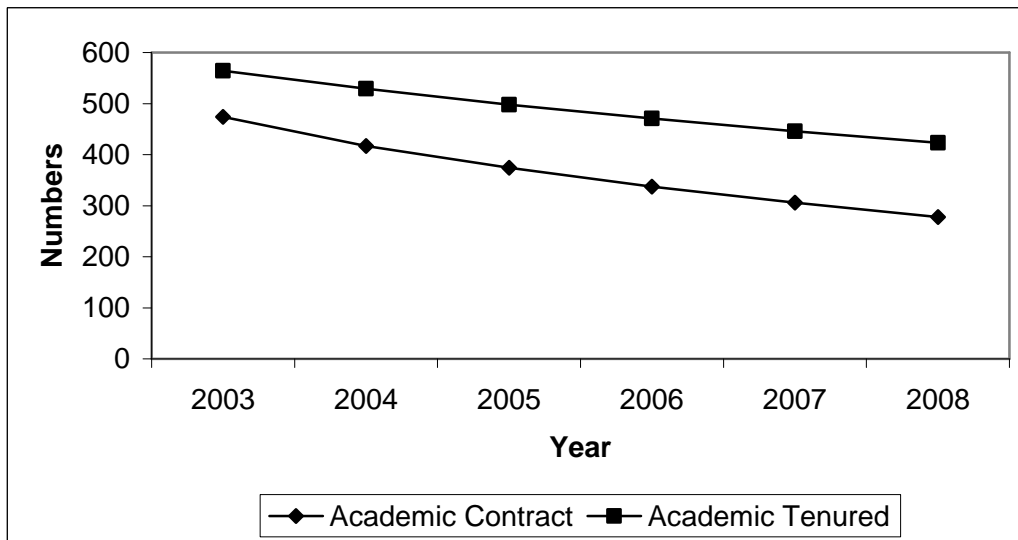


Table 8: Projected Numbers of Male and Female Academic by Type of Employment, 2003 to 2008

Source: *The University of Adelaide, Human Resources 2003*

ACADEMIC CONTRACT			
Year	Males	Females	Total
2003	303	171	474
2004	268	149	417
2005	242	133	374
2006	219	118	337
2007	199	107	306
2008	181	97	278

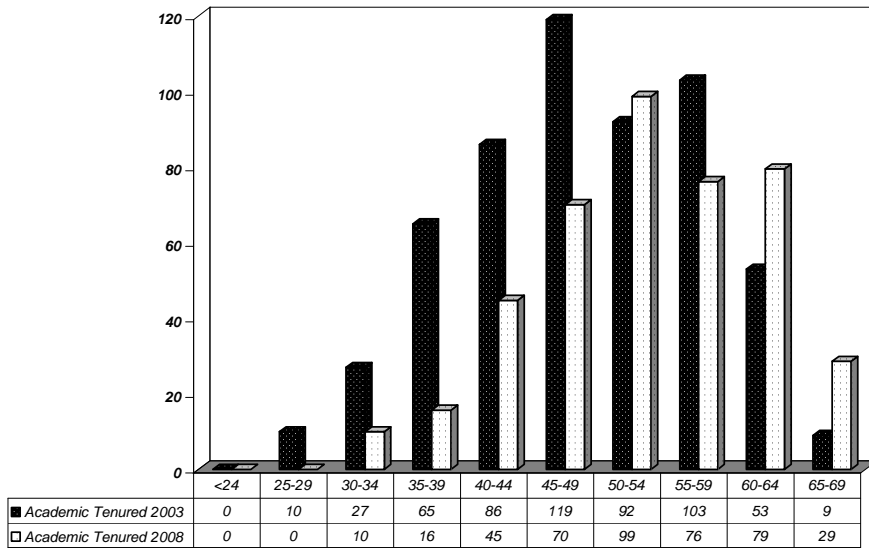
ACADEMIC TENURED			
Year	Males	Females	Total
2003	410	154	564
2004	384	145	529
2005	361	138	498
2006	340	131	471
2007	322	125	446
2008	304	119	423

Examining the academic tenured staff overall it is evident that there will be a reduction of 141 staff or 25% over the next five years if current attrition rates are maintained. This 141 is made up of 106 males and 35 females, representing a reduction of 25.8% of males and 22.7% of females. For those on academic contracts there is a more substantial decrease from 474 to 279 persons, a decline of over 40% made up of 122 males (a 40.3% reduction) and 74 females (a 43.3% reduction). It is clear then that the recruitment task is substantial.

Figure 8 depicts the likely shift in the age composition of the academic tenured staff in the next five years. The dark columns reflect the current age structure and the impact of the rounds of redundancies in recent years is apparent in that the structure is not as mature as it was in the late 1990s. Nevertheless in 2003 some 46% of academic staff were aged over 50 with only 18% aged under 40. With an ageing of the workforce forward to 2008, it is likely that there will be an even greater concentration in the 50+ age group, a high 66.8% with only 6% aged under 40. It is difficult to assess however the impact of the abolition of compulsory retirement at age 65 years. It is apparent in looking at the age profile with almost a quarter likely to be aged 50-54 years in 2008 and a further 36% aged 55-64 years that more needs to be known about retirement intentions.

Figure 8: Academic Tenured Staff Profile by Age, 2003 and Projected 2008

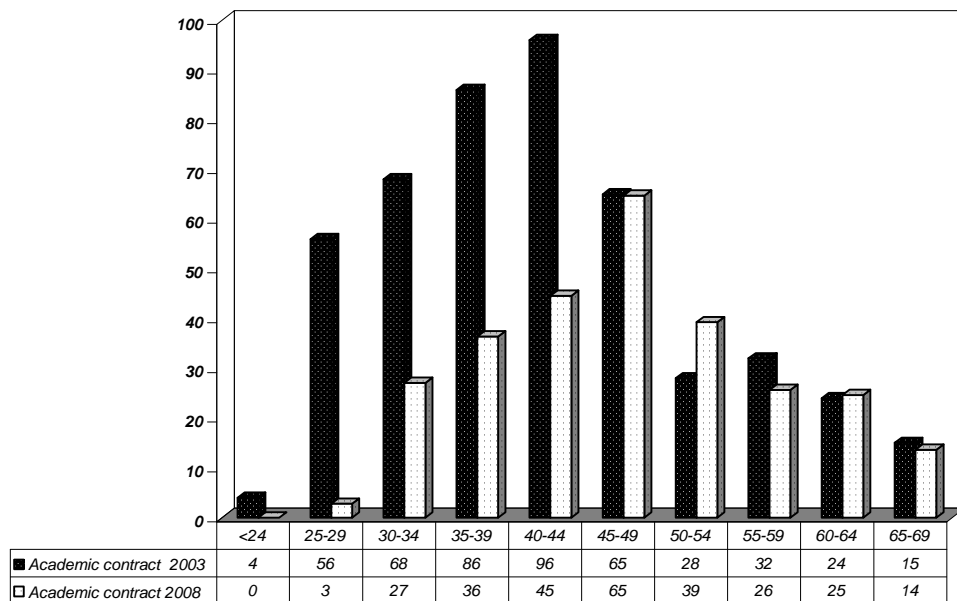
Source: *The University of Adelaide, Human Resources 2003 and GISCA Projections 2003*



It is apparent from Figure 9 that the academic contract staff is substantially younger than the tenured staff, as would be expected from the practice of offering fixed term contracts on the basis of recent funding availability. In 2003 only 21% were aged over 50 with a high 45% under 40. As would be anticipated the attrition rates are higher than for academic tenured staff and an ageing of the group results in the proportion aged over 50 increasing to almost 40% in 2008 and that under 40 decreasing to 24%.

Figure 9: Academic Contract Staff Profile by Age, 2003 and Projected 2008

Source: *The University of Adelaide, Human Resources 2003 and GISCA Projections 2003*



In examining the age-sex profiles and the rates of attrition it is important to acknowledge the significant imbalance in the numbers of males and females amongst academics.

Figure 10 shows that the age–sex profiles for both academic contract and tenured staff are significantly male dominated and are expected to stay that way in 2008. The rates of attrition are relatively high among the small number of young tenured staff, most notably for females. It is interesting that the profile for the academic contract staff is very similar in respect to the high loss of those at the youngest ages and the fact that the loss of females appears higher than for males effectively ensuring the dominance of males in academic positions.

The study also undertook a disaggregated analysis for faculties and smaller units and the results are presented in Table 9. It will be noted that applying current rates of attrition to each faculty there are anticipated to be losses of between 27% and 50.8% in the faculties. It will be noted that the University faces a substantial recruitment task over the next few years. This extent of recruitment is one of the largest, which the University has faced over the post-war period. It represents both a challenge and an opportunity. It clearly offers a chance to restructure and phase out programs that may not be required anymore and bring in new areas considered to be needed. It means a significant change can be achieved without a program of forced redundancy. On the other hand it is a real challenge in an increasingly competitive recruitment situation.

Figure 10: Age and Sex Structure of Academic Contract and Tenured Staff, 2003-2008

Source: *The University of Adelaide, Human Resources 2003 and GISCA Projections 2003*

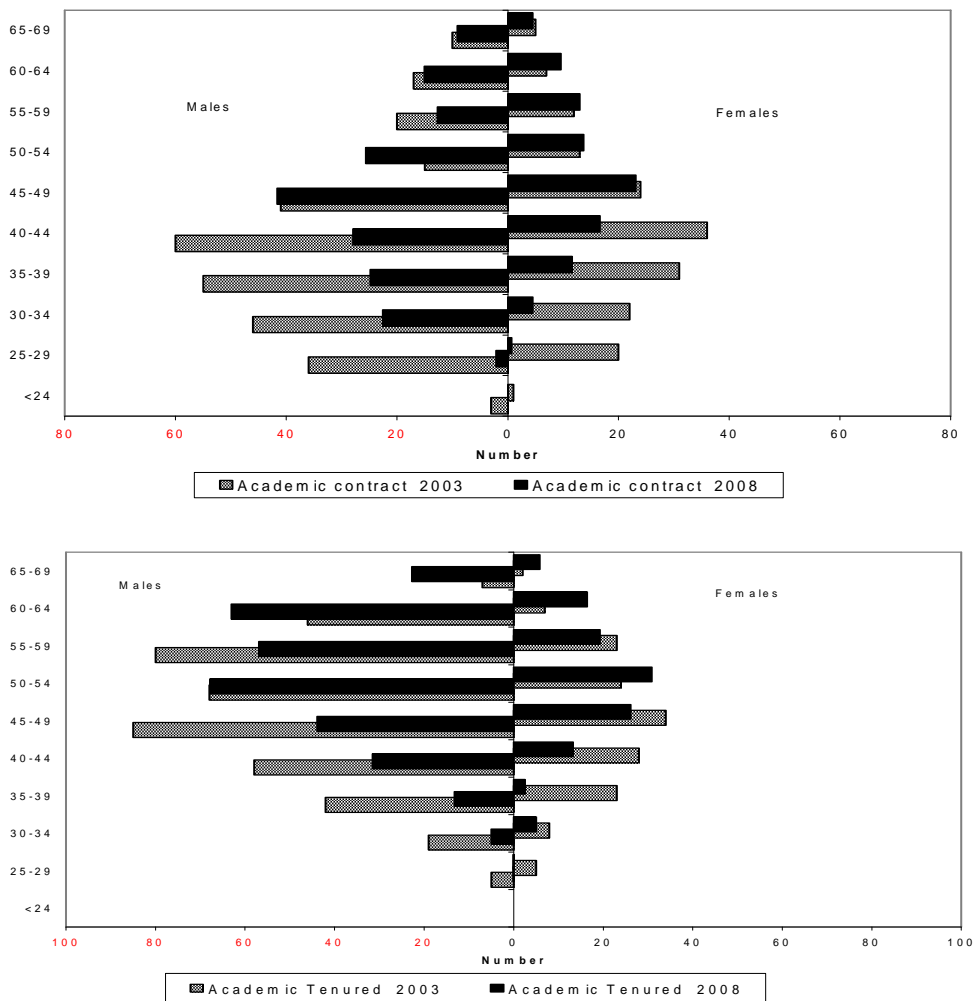


Table 9: The University of Adelaide: Number of Academic Staff by Faculty, 2003-2008

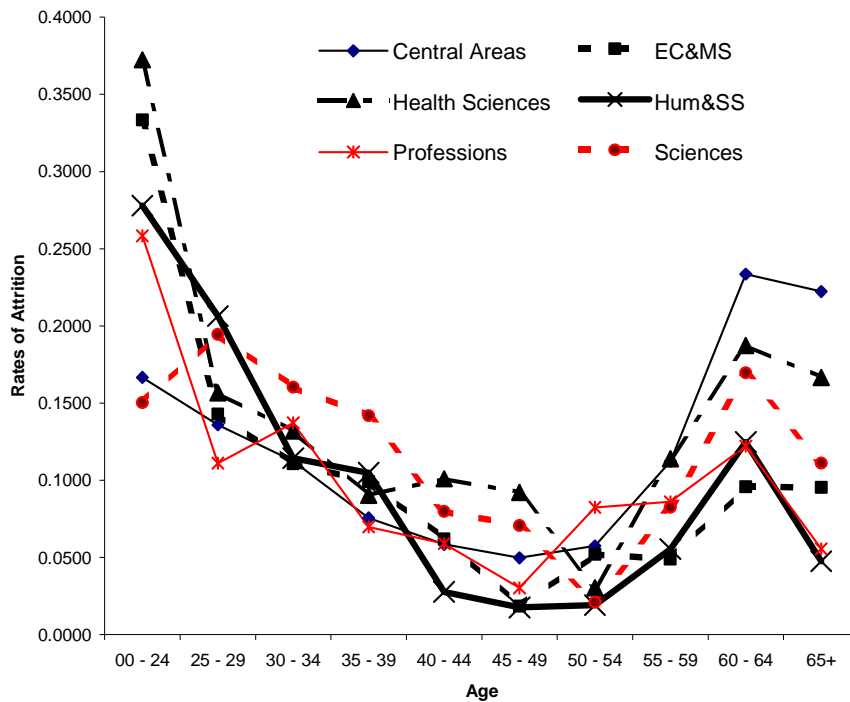
Source: The University of Adelaide, Human Resources 2003 and GISCA Projections 2003

	Academic 2003	Academic 2008	Academic Staff Percentage change 2003-2008
Sciences	329	162	-50.8
Health Sciences	276	149	-46.0
EC&MS	156	97	-37.5
HUM&SS	138	101	-27.0
Professions	114	80	-29.9

It also needs to be underlined that the distribution of attrition rates is a “U” shaped one as Figure 11 indicates. The two peaks of staff loss are firstly in the late 50s and early 60s and secondly in the 20s and early 30s. The retirement ages peak is interesting given the introduction of the government of a policy to increase the age at retirement (Costello 2004).

Figure 11: Age Specific Rates of Attrition By Faculty, 2001-03

Source: The University of Adelaide, Human Resources 2003



Projections were also made to provide estimates of likely changes in job classification of projected academic staff. Estimates were made for respective classification distributions in 2008 by taking the projected age structures for academic and the proportional age distribution of staff by classification level. The methodology employed was as follows:

- Take the projected academic staff numbers divided into five-year age groupings.
- Establish the age distribution of staff by classification level in 2003.

- Apply these to the respective age distributions by classification to the annual projected age distributions for academic and general staff for the 5-year period 2003-2008.
- Sum the estimated age groups by classification level to provide total for each year.

The age profile for academic staff according to level of appointment is shown in Figure 12.

There is a marked separation in the age composition of staff at Levels A and B, which is clearly much younger, and those at higher Levels. Some 61.8% of Level As are aged under 40 years, 40.2% of Level Bs, dropping to 15.3% of level Cs and a small 2.8 and 3.3% of Level Es and Ds respectively. Over half Level D and E academics are aged 55 years or more making them the largest group due for retirement within the next ten years or so. This compares to 26.8% of Level Cs, 10.8% of Bs and 6% of As. This suggests that few are likely to leave through retirement in the next 5 to 10 years and the bulk of them will hope to shift classification level through promotion as the older higher level academics leave.

Figure 12: Age Structure of Academic Staff by Classification Level, 2003

Source: *The University of Adelaide, Human Resources 2003*

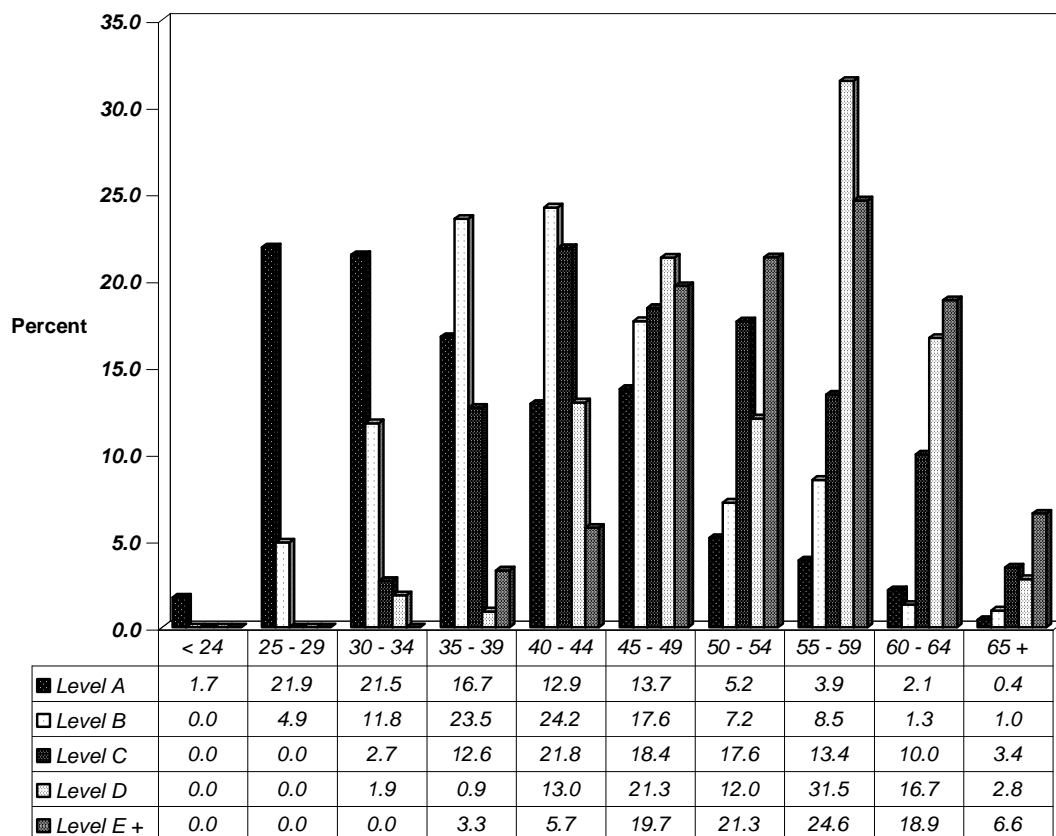
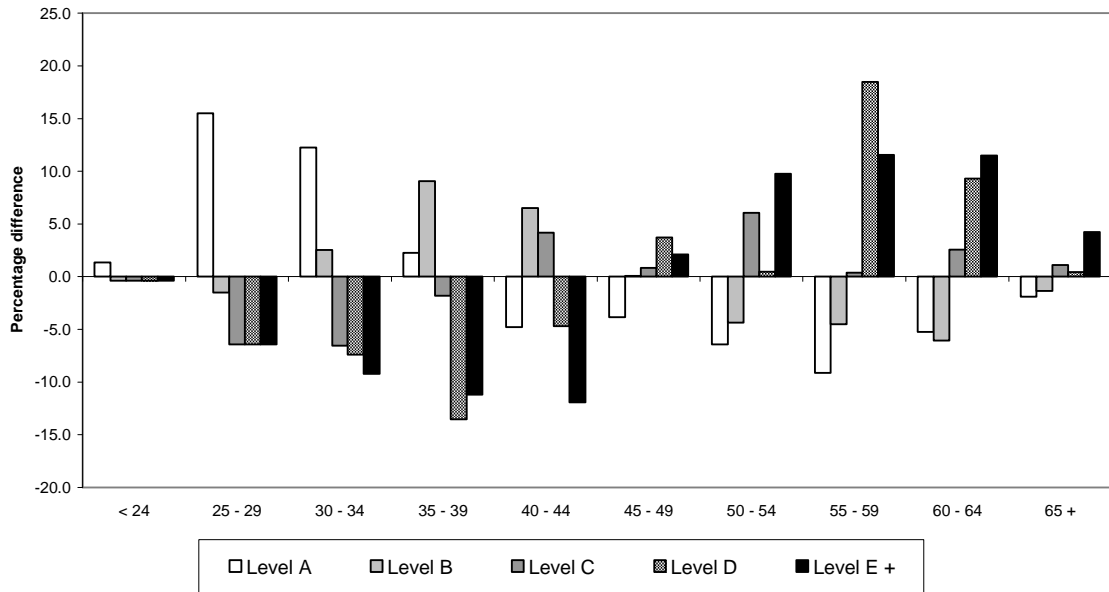


Figure 13 shows the percentage difference in the age distribution of the entire academic staff and each of the classification levels in 2003. There is a significantly older age structure for Level D and E staff when compared to that of Levels A and B.

Figure 13: Percentage Difference in Age Distribution of Academic Staff by Classification Level compared to Total Academic Staff in 2003

Source: *The University of Adelaide, Human Resources 2003*



In examining the changes estimated for academic staff by classification level shown in Figure 14, there are significant losses expected in Level A and B staff, with loss much less for Level C and indeed much the same or higher for level D and E staff by 2008. Table 10 shows the decimated age profiles of Level A and B staff with a higher retention of staff evident over 40 years of age. The age structure of staff at the higher classification levels is estimated to become older given ageing and much higher rates of retention among older staff.

Figure 14: Estimated Change in Numbers of Academic Staff by Classification Level, 2003 – 2008

Source: *The University of Adelaide, Human Resources 2003 and GISCA Projections 2003*

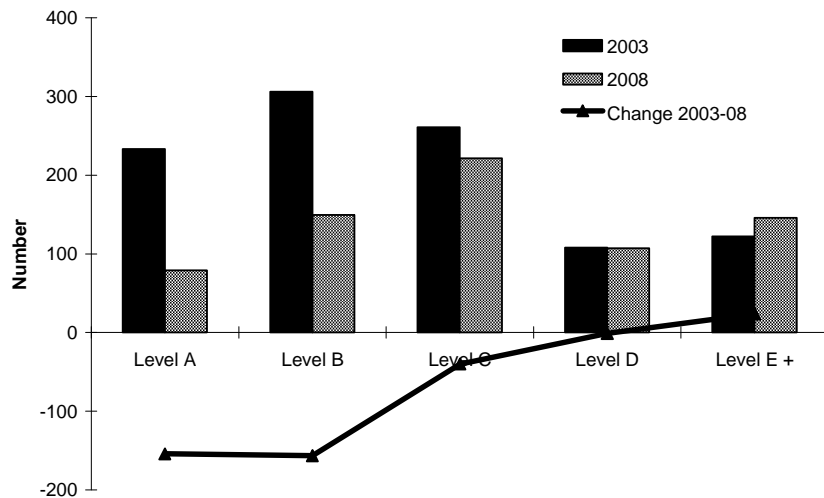


Table 10: Estimated Academic Staff Profile by Classification Level 2003-2008*Source: The University of Adelaide, Human Resources 2003 and GISCA Projections 2003*

Actual 2003	Persons					Total Academic
	Level A	Level B	Level C	Level D	Level E	
<24	4	0	0	0	0	4
25-29	51	15	0	0	0	66
30-34	50	36	7	2	0	95
35-39	39	72	33	1	4	149
40-44	30	74	57	14	7	182
45-49	32	54	48	23	24	181
50-54	12	22	46	13	26	119
55-59	9	26	35	34	30	134
60-64	5	4	26	18	23	76
65+	1	3	9	3	8	24
	233	306	261	108	122	1030

Estimated 2008	Persons					Total Academic
	Level A	Level B	Level C	Level D	Level E	
<24	0	0	0	0	0	0
25-29	1	1	0	0	0	3
30-34	10	18	8	0	1	37
35-39	9	21	16	4	2	52
40-44	16	27	24	11	12	89
45-49	14	25	52	15	29	135
50-54	9	27	36	35	31	138
55-59	7	5	35	24	31	102
60-64	4	13	39	13	35	104
65+	10	13	11	4	5	42
	80	150	221	106	146	702

By 2008 the University can expect an increase in tenured Professors and to maintain the same number of Associate Professors as in 2003. Given the projected turnover in staff at the lower levels the discipline leadership and mentoring role of people in those roles is likely to become even more important. In particular, Associate Professors and Professors must be willing and have the appropriate skills to provide this aspect of their role. Development programs and promotion criteria should highlight these skills. Where there are insufficient staff willing or skilled to undertake this role with junior staff, a cross-faculty mentoring program could be arranged to share the experience of skilled senior academics in relation to generic academic functions such as teaching and research grant submissions.

In one Faculty it was suggested that discipline leadership within the Faculty had jumped a generation. The future career path of those staff enthusiastically taking on the academic leadership roles should be thought through. Will it be possible for them to maintain a research and teaching program as well as provide discipline leadership? Should the university identify a separate career path in academic leadership and build bridges between academic and academic management roles?

One area which emerged from the analysis was that despite efforts to improve the gender balance at The University of Adelaide, problems remain. Table 11 shows the sex ratios (males per 100 females) by age for each of the main employment areas of the University. While there are variations between faculties, males dominate, especially in the older and more senior areas.

Table 11: The University of Adelaide: Sex Ratios of Staff by Faculty, 2003Source: *The University of Adelaide, Human Resources, 2003.*

	Sex Ratios					
	Central Administration	EC & MS	Health Sciences	Hums & SS	Professions	Sciences
<24	144.4	60.0	14.3	100.0	25.0	12.5
25-29	62.5	450.0	24.4	0.0	33.3	86.2
30-34	48.1	287.5	41.3	50.0	137.5	121.9
35-39	57.9	240.0	97.1	46.7	90.0	122.0
40-44	51.7	388.9	60.3	115.4	77.8	166.7
45-49	50.0	209.1	118.9	100.0	78.6	174.2
50-54	56.4	250.0	106.3	72.2	166.7	139.1
55+	167.7	260.0	167.6	145.5	254.5	280.0
Persons	65.9	264.3	81.6	91.8	109.5	139.5

HUMAN RESOURCE IMPLICATIONS

The patterns outlined above present a number of human resources challenges but especially in two areas.

1. Retention of the ageing academic workforce

The reason that the matured aged worker is so important is that they represent the only remaining segment of the workforce in which participation rates can be increased. Female participation rates have increased steadily over the past 40 years and appear to have plateaued. Short of returning to the days of child labour, the mature aged worker must become a more critical part of the economy if we are to maintain a standard of living (Hudson 2004, P.3).

Notwithstanding there are a range of assumptions about mature aged workers, many of them negative that need to be addressed. There is evidence that mature aged workers have been disproportionately affected by workplace restructuring over the past decade in spite of data that shows older workers to be more skilled, have better work attitudes, lower turnover and better punctuality (Gordon 1995). Research undertaken internationally suggests older workers:

- Take less time off due to injury and illness. Many businesses have reported marked reductions in absenteeism when they have recruited older workers.
- Older workers have fewer accidents per employee hour.
- Strength of judgment and ability for critical thinking increase with age.
- There is no serious decline in memory or intelligence until 90 years or over. Life expectancy is now around 81 years in many societies.
- Older workers are often more engaged by task and work to improve their mastery.
- Productivity levels increase as people age.
- In simulated managerial tasks, both younger and older workers arrived at the right answers but did so by different processes. While older workers took longer to process information, they sought more information before making a decision, were more scrupulous in the use of information and were better able to accurately evaluate.
- The over 50s age group has been found to have the greatest take up of internet usage. Myths about older workers' adaptability to new technology are no longer valid.

Source: *"Achieving an Age Balance in the Workforce – The Australian Employers Convention"*

In the University sector lecturers in business management might be older than 50 but still relatively new to academia because of time spent in the business world. A predominantly older academic profile has a different meaning in a field such as mathematics, where the most original work is done early in one's career, than philosophy or other disciplines where senior members of the profession make the strongest contribution. The balance between older and younger academics matters more in rapidly changing disciplines (e.g. high energy physics, cellular biology and IT) (Kogan, *et al.*, 98).

Human Resources issues to consider in relation to older workers include:

- Education about misconceptions about ageing.
- Promote health, work and family balance.
- Managing increased health risk in relation to older workers.
- Ensure that training procedures cater for varying individual learning styles and needs.
- Restructuring work roles to enable staff, who might be prepared to work part time or to undertake part of their role, to remain in the workforce (e.g. creation of teaching only positions).
- Support mentoring and skills transfer from older to younger workers.
- Encourage both life long learning and flexibility and adaptability.
- Phased retirement.
- Flexible work patterns and changes in classification subsidized by subsidiary superannuation (e.g. allow staff who are not ready to retire and have valuable knowledge, to step down a classification to undertake less stressful work, while keeping their Superannuation at the higher level).
- Pre-retirement contracts (these provide some certainty as to when an academic will leave the workforce and allows for career planning and succession management)
- Stop incentivising early retirement through early retirement schemes
- Utilise the Association of Commonwealth Universities retired academics database.

2. Recruitment activities to attract younger worker

“It is clear that many of our present practices around the recruitment and retention of staff will have to change as the pool of new and freshly trained workers dries up. Forget about recruiting from overseas since such skilled labour will be in demand from many other ageing countries and there will simply not be enough to go around”

(Ruddock. 1999).

A crucial issue over the next few decades will be however to identify and recruit high quality younger academic staff. This is for the following reasons, among others:

- The lack of academic jobs in recent times has seen many graduates diverted out of the university system.
- The increased globalisation of knowledge and labour markets has seen many high quality graduates move to other countries.
- There is growing international competition for the “best of the best”.

Accordingly it is crucial to put in place a number of strategies to ensure recruitment of the best possible people. A number of possible approaches are:

- Earmarking high quality PhD students
- Use of new Immigration regulations

- Introduction of combined teaching/degree research positions (apprenticeships)
- Development of family friendly internal policies
- Improve the relationship with the alumni e.g. 'Bringing Them Back' – Identifying high quality former graduates in selected areas
- Improve start up grants, travel funds and relocation support
- Support for spouses (e.g. support groups, assistance in finding employment)
- Competitive remuneration and conditions of service
- Career pathing opportunities (e.g. link into skill audits, planning and review and leadership and development programs)
- Mentoring programs (The vocational nature of academic work means that they are more likely to continue an interest in parts of their discipline and may be prepared to mentor continuing staff.)
- Cultural awareness programs and bridging courses for staff where English is the second language
- For younger staff on fixed term contracts new employment packages could also be developed to link performance outcomes and the ability to generate an income stream, with ongoing employment.

CONCLUSION

Universities more than most other industries will be affected by demographic trends across the world. This can be partly attributed to the fact that academics epitomise the “knowledge worker” that is going to become increasingly in demand in the future but also because of the global nature of academia and the current demographic base in which they are moving from. Such a scenario provides both a threat and a challenge to institutions with Human Resource Managers playing an increasing role in both the attraction and retention of staff at both ends of the age spectrum. The template for doing this is quite simple:

- Develop a demographic model that identifies changes in the academic profile over a set period
- Audit the existing workforce over 45 to determine when they are likely to leave and what critical skills will be lost
- Determine what critical skills are for the future
- Determine what the skills gap will be
- Revise recruitment and staff development strategies to address the gap in the skills base.
- Develop supporting HR policies in support of the overall workforce planning strategy to attract and retain appropriate staff such as:
 - Flexible working arrangements
 - Flexible retirement options
 - Early Career Researcher support
 - Competitive remuneration

However, like most things, the challenges are in its implementation.

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