RESEARCH PRODUCTIVITY IN AUSTRALIAN MANAGEMENT AND OTHER BUSINESS RELATED DEPARTMENTS FROM 2000 TO 2002

A REPORT FROM THE AUSTRALIAN AND NEW ZEALAND ACADEMY OF MANAGEMENT

INTRODUCTION

In late 2000, the Academy decided to undertake a survey of research productivity within Australian universities. Surveys were sent to the Head of School or equivalent person in the 100 relevant academic units within all Australian institutions. A total of 30 responses were obtained. In total, data on research activity were obtained on 226 management academics from 1997 to 1999, as well as information on the research support provided across the 28 responding units.

Given the interest the report generated, it was decided to undertake a follow-up survey that looked at 2000, 2001 and 2002. The present report initially outlines the results obtained in the second survey and then makes some comparisons with the results obtained in the earlier study.

THE RESPONDING ACADEMIC UNITS

As in the first survey, responding academic units were not large, with a median size of 21 full time staff in 2000, 22 in 2001 and 24 in 2002, suggesting management units increased moderately in size during the period. However, there were some large units, with more than 150 academics, although the majority of these were part-time staff. Management units remained effective in obtaining research grants as every unit reported at least one grant in the three years, with a median of 9 such grants over the reporting period. A significant amount of money was also raised through such grants, with the median amount raised exceeding $150,000 in each of the three years and the median value over the total three years close to $500,000. Some departments obtained in excess of a million dollars in such grants during the three year period,

suggesting some large-scale and long term research projects are now being undertaken in many of the responding academic units.

Responding academic units were again asked about the size of their doctoral programs. The results obtained are shown in Table 1. As can be seen from the table, doctoral programs continue to increase, especially through part-time enrolments. It is also clear that more people continue to enter doctoral programs than graduate, suggesting supervision and research student funding issues remain critical. As can be seen from the maximum enrolment figures, which show the largest programs reported, some such programs are very large, with one program having more than 100 doctoral students enrolled in each of the three years.

Table 1: Doctoral Programs – 2000 to 2002

	2000	2001	2002
Mean Enrolments			
Enrolled Full Time	11.88	13.35	13.44
Enrolled Part Time	28.12	29.67	33.89
Completed Degree	3.35	4.12	5.53
Maximum Enrolments			
Enrolled Full Time	50	67	63
Enrolled Part Time	125	123	138
Completed Degree	19	22	38

Responding academic units were also asked to indicate the influence of a number of criteria on promotion and tenure decisions within their university. The responses are shown in Table 2. As can be seen from the Table, overt research outcomes in the form of publications remain the most influential criterion, followed by teaching evaluations and the number of research grants obtained. Other criteria remain much less important, suggesting management academics who ignore the research imperative do so at their own risk.

Table 2: Influence of Promotion and Tenure Criteria (percentages) *

Criterion	0	1	2	3	4	5	Mean
Number of Publications	0	0	0	2	52	46	4.47
Number of Research Grants	0	6	6	12	58	18	3.76
Value of Research Grants	0	12	12	24	52	0	3.18
Teaching Evaluations	0	0	6	24	46	24	3.88
Internal Collaboration	6	29	35	24	6	0	1.94
External Collaboration	6	6	12	64	12	0	2.71
Professional/Discipline Service	0	6	29	47	12	6	2.82

* [0 = no influence; 1 = slight influence; 2=some influence; 3 = moderate influence; 4 = strong influence; 5 = very strong influence]

ACADEMIC STAFF OUTCOMES

Staff Profiles

As in the first survey, the remainder of the survey asked about the performance of individual staff. Information was obtained as to publications, successful research student completions and the amount of research funds raised. Relative workload allocations were also obtained by asking for information as to the percentage of total work hours spent on research, teaching and other duties. The remainder of the report outlines the results obtained from this section of the survey. As mentioned earlier, information was obtained for a total of 428 staff, whose academic qualifications varied as shown in Table 3. As can be seen from the Table, 63% of the staff had doctorates, while less that a quarter did not have a graduate research degree, suggesting that data were again obtained from more research oriented units. Consequently, it is likely that the research output data provided is upwardly biased as it would be expected that better qualified staff would be more research active and productive.

Table 3: Highest Academic Qualification

	Frequency	Valid Percentage
Bachelors Degree	12	3
Honours Degree	12	3
Postgraduate Diploma	6	1
Coursework Masters	43	10
Research Masters	79	19
Professional Doctorate	2	1
PhD	259	63
Not Provided	15	
Total	428	

Academic rank was also obtained and the results are shown in Table 4. As can from the table, most staff members were lecturers (30%), although there were significant numbers from all levels, including professors (19%), suggesting responses were obtained from a broad cross section of management academics.

Table 4: Academic Rank

Academic Rank	Frequency	Valid Percent
Associate Lecturer	37	9
Lecturer	127	30
Senior Lecturer	126	29
Associate Professor	49	12
Professor	81	19
Missing	8	
Total	428	

Publications

Research output was measured in terms of journal papers, refereed conference papers, research books and, in the second survey, book chapters. Average output over the three years surveyed is shown in Table 5. As can be seen from the table, research

output has remained generally small. On average, management academics produced less than one journal article and less than one refereed conference paper a year over the three years. There was a small, although statistically insignificant, increase in the number of journal articles produced and a small, but significant increase in conference papers across the three year period. Very few research books were produced, with 44 such publications being reported. As in the first study, the low figure arose from a dichotomy within the sample. Twenty three percent of staff members produced no research output over the three year period, while an additional fourteen percent produced only conference papers. On the other hand, ten percent of management academics produced 6 or more journal papers, ten percent of academics produced 6 or more conference papers, five percent of management academics produced 2 or more book chapters and ten percent of management academics produced at least one book during the three year period. The highest output over the three year period was a total of 66 publications (35 journal articles, 28 conference papers, 1 book and 2 book Chapters). Two other respondents produced over 40 outputs during the three year period (one produced 26 journal articles, 1 conference paper, 1 book and 26 book chapters while the other produced 16 journal articles, 24 conference papers, 4 books and 2 book chapters). Clearly, output remains skewed within the management research community.

Table 5: Research Output - 2000 to 2002

	2000	2001	2002
Journal Articles	0.58	0.74	0.88
Refereed Conference Papers	0.56	0.67	1.10
Research Books	0.04	0.07	0.05
Chapters in Research Books	0.15	0.16	0.18

Average publications over the three-year period were also computed for each of the three types of publications and for “total publications”, which was merely a sum of the four types of publications. The results are shown in Table 6, which also provides a set of relevant percentile scores in each case. These results confirm the earlier comments about the relatively low output and the skewed nature of research output in

the management area in Australia. However, the percentile scores again show that those at the top end of the range are very productive researchers, with the top one percent producing an approximately five journal articles a year, seven conference papers a year and one book a year, while those in the top ten percent produced approximately two journal articles, two conference papers a year and one book over the three year period.

Table 6: Average Annual Output during the Period 2000 to 2002

	Journal Articles	Conference Papers	Books	Book Chapters	Overall
Mean	0.73	0.77	0.05	0.16	1.72
Median	0.33	0.33	0.00	0.00	0.67
Variance	1.54	1.76	0.04	0.30	6.78
Skewness	3.69	3.00	4.79	9.93	3.32
Minimum	0.00	0.00	0.00	0.00	0.00
Maximum	11.67	9.33	1.67	8.67	22.00
Bottom 25%	0.00	0.00	0.00	0.00	0.33
Bottom 50%	0.33	0.33	0.00	0.00	0.67
Top 25%	1.00	1.00	0.00	0.00	2.33
Top 10%	2.00	2.00	0.07	0.33	3.87
Top 5%	3.20	3.67	0.33	0.67	4.93
Top 1%	5.91	6.48	1.24	2.00	12.72

An analysis of publications by academic rank was also undertaken. The analysis of variance produced a significant result, suggesting professorial level (associate and full professors) staff produced significantly more publications overall, as well as journal articles, books and book chapters. Average publications by rank, shown in table 7, make the differences in publications clear. As would be expected, senior academics are more productive. However, this raises the important issue as to how productivity can be increased in less senior ranks. There is an apparent need for programs to assist junior academics in this regard as there is no guarantee that present junior staff will increase productivity without assistance.

Table 7: Publications by Academic Rank

Rank	Journal Articles	Conference Papers	Books	Book Chapters	Overall Publications
Associate Lecturer	0.26	0.43	0.00	0.01	0.70
Lecturer	0.42	0.60	0.01	0.04	1.07
Senior Lecturer	0.61	0.81	0.05	0.11	1.58
Associate Professor	1.01	0.96	0.07	0.29	2.33
Professor	1.51	1.10	0.14	2.33	3.20

A further analysis was undertaken to determine the relevant percentiles for management academics employed in the various academic ranks. The results are shown in Table 8. As can be seen from the table, there are large differences in the percentile results, suggesting that more senior academics are more productive, but that there are also large differences within most of the academic ranks and that, for example, a total of 4 publications a year would be excellent (top 1%) for an associate lecturer, but would be only about average for a professor (not in the top 25%). Clearly such academics have had very different research opportunities and these opportunities need to be taken into account when assessing research performance.

Table 8: Average Annual Output during the Period 2000 to 2002 by Academic Rank

Academic Rank	Journal Articles	Conference Papers	Books	Book Chapters	Overall
Associate Lecturer					
Mean	0.26	0.43	0.00	0.16	1.72
Minimum	0.00	0.00	0.00	0.00	0.00
Maximum	2.00	2.67	0.00	0.33	4.00
Bottom 25%	0.00	0.00	0.00	0.00	0.33
Bottom 50%	0.00	0.33	0.00	0.00	0.33
Top 25%	0.33	0.50	0.00	0.00	0.67
Top 10%	0.73	1.40	0.00	0.00	2.13
Top 5%	1.40	2.07	0.00	0.03	3.70
Top 1%	2.00	2.67	0.00	0.33	4.00
Lecturer					
Mean	0.42	0.60	0.01	0.04	1.07
Minimum	0.00	0.00	0.00	0.00	0.00
Maximum	4.33	8.67	0.67	0.67	13.00
Bottom 25%	0.00	0.00	0.00	0.00	0.00
Bottom 50%	0.00	0.33	0.00	0.00	0.33
Top 25%	0.67	0.67	0.00	0.00	1.33
Top 10%	1.33	1.73	0.00	0.33	2.67
Top 5%	1.87	2.53	0.00	0.33	4.93
Top 1%	4.24	7.92	0.57	0.57	11.79
Senior Lecturer					
Mean	0.73	0.77	0.05	0.16	1.72
Minimum	0.00	0.00	0.00	0.00	0.00
Maximum	5.67	6.00	1.33	2.00	11.00
Bottom 25%	0.00	0.00	0.00	0.00	0.33
Bottom 50%	0.33	0.33	0.00	0.00	0.67
Top 25%	1.00	1.00	0.00	0.00	2.00
Top 10%	1.67	2.47	0.13	0.33	4.13
Top 5%	2.33	4.13	0.33	0.67	5.70
Top 1%	5.32	5.91	1.25	1.74	10.83

Associate Professor					
Mean	0.73	0.77	0.05	0.16	1.72
Minimum	0.00	0.00	0.00	0.00	0.00
Maximum	8.33	6.67	1.00	3.33	12.00
Bottom 25%	0.33	0.00	0.00	0.33	0.33
Bottom 50%	0.67	0.33	0.00	1.33	1.33
Top 25%	1.33	1.33	0.00	3.00	3.00
Top 10%	2.67	3.33	0.33	7.00	7.00
Top 5%	3.67	4.17	0.67	9.83	9.83
Top 1%	8.33	6.67	1.00	12.00	12.00
Professor					
Mean	0.73	0.77	0.05	0.16	1.72
Minimum	0.00	0.00	0.00	0.00	0.00
Maximum	11.67	9.33	1.67	8.67	22.00
Bottom 25%	0.33	0.00	0.00	0.00	0.67
Bottom 50%	1.00	0.33	0.00	0.00	2.00
Top 25%	2.33	1.33	0.17	0.67	4.33
Top 10%	3.87	3.20	0.33	1.00	7.47
Top 5%	5.30	4.67	0.97	1.93	10.27
Top 1%	11.67	9.33	1.67	8.67	22.00

Research Degree Completions

Information was also obtained on research degree completions and the results obtained are shown in Table 9. As can be seen from the Table, very few research students graduated over the three year period. Again there was a dichotomy, as eighty two percent of staff members had no research student completions during the period from 2000 to 2002, while less than ten percent of academics supervised more than two successful research students. One respondent was reported to have supervised fourteen successful research theses. This further highlights the issue of research supervision that was discussed in the first report. There are still very few experienced research supervisors in the management area and this may be affecting the completion rates of such students. It is an important issue that needs considerable discussion and it may be that ANZAM should consider playing a role in improving this aspect of the management area's research effort.

Table 9: Average Research Degree Completions from 2000 to 2002

	2000	2001	2002
Masters Completions	0.04	0.05	0.05
Doctoral Completions	0.09	0.12	0.15

Income Generation

Information on research income generated was also obtained. The mean income generated by each academic was small (between $5000 and $7000 in each year). However, such an average hides the real situation as there seems to be more research funds being won by management academics. As in the first survey, less than a quarter of staff members (22 percent) raised research funds in any of the three years surveyed in the present study. The average grant over the second three year period remained at approximately the same level as in 1999 ($43000 in 2000, $56000 in 2001 and $55000 in 2002) compared to the $22000 in 1997. A total of more than $2,500,000 in research funds was reported for the 2000 to 2002 period, suggesting many well funded projects were being undertaken over this period.

A small positive correlation between research dollars obtained and publications was again found (0.30), suggesting that grants are still not a prerequisite for research outcomes in the management area. The stronger correlation between research dollars obtained and successful research student completions (0.54) was also maintained, which may be due to long-term research teams that include research students and the inclusion of research scholarships within many government grants (eg especially ARC linkage grants that a number of management academics have obtained in recent years).

Again a number of management academics were extremely active in the three areas. The respondent who had the maximum number of publications over the three year period (66) also supervised 8 successful research students and obtained $80,000 in grants. Another respondent had 44 publications, successfully supervised 5 research students and obtained $265000 in grants while a third had 54 publications,

successfully supervised 2 research students and obtained $200000 in research grants. It is clear that there are a number of extremely active management researchers in Australia.

Work Allocation

The survey also asked about staff member's work allocations by providing information on the percentage of total work hours allocated to teaching, research and other university duties over a "standard university year." The results are shown in Table 10. As can be seen from the table, there has been a small, but statistically insignificant, movement towards research in the period but teaching remains the major part of management academics' workload.

Table 10: Work Allocations (as a percentage) in the Period from 2000 to 2002

Academic Area	2000	2001	2002
Teaching	49	49	48
Research	30	30	31
Other Duties (eg Administration)	21	21	21

Management academics are still expected to spend about a third of their time on research related activities, although there is still considerable variability as there are a few academics who are not given any research allocation (less than five percent) while there are others who are given a workload allocation of more than 50 percent (less than ten percent). The inter-quartile range for the research work allocation remained at between 20% and 40%, suggesting that most management academics are still expected to spend a significant amount of their time on research related activities.

SOME COMPARISON WITH THE 1997 TO 1999 RESULTS

There were considerably more academics included in the second study than in the first (428 compared to 226) and from a somewhat different group of departments, which made comparisons problematic. However, there were a number of common departments across both periods (with 158 academics in the first period and 190 in the second period), making some comparisons possible. As the distributions were skewed, appropriate non-parametric statistics were used to examine the differences and the results obtained are shown in Table 11. As can be seen from the table, the number of books published, research student completions and external funds obtained did not change significantly. However, there were significant changes in the base research publications (journals and conference proceedings) across the two periods. The median scores were 1.00 and 0.33 for both journal articles and conference papers in the respective periods, suggesting that, at least within the common units, research publication has fallen. An examination of work allocations did not suggest that the reduction was due to a reduction in management academics' research allocation as there were no significant changes in this aspect of their work lives.

Table 11: Differences between 1997-1999 and 2000-2002 *

	Wilcoxon W (significance)	Kolmogorov-Smirnoff Z (significance
Journal Articles Published	0.00	0.00
Conference Papers Published	0.00	0.00
Books Published	0.40	0.37
Research Student Completions	0.20	0.20
External Research Funds Obtained	0.57	0.93

CONCLUSIONS

Overall it would seem that management research in Australia continues to have some very active researchers who are publishing, successfully supervising research students and obtaining very significant research money. However, there is a clear dichotomy, as more than twenty percent of the management academics surveyed produced no research output from 2000 to 2002. Clearly, even more work needs to be undertaken to determine why this is the case and whether this group is choosing to not participate or whether other issues are impacting on their research decisions.