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Gauging the value of research periodicals

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INTRODUCTION

For years academic librarians and the academic communities have suffered the remorseless march of inflation in periodicals prices, with well-known effects on library budgets. Under these pressures there have been many initiatives and speculations about alternative means of scholarly communication, and about electronic alternatives to costly print subscriptions. Yet surprisingly little of the debate has actually focused back on the true value of these expensive materials, and whether that value can be demonstrated by any performance indicators or quality benchmarks for the end product that they support, the academic output of the community that they are bought for.

In 1998 the libraries of the '94 Group of research universities decided to try and determine what correlation existed between expenditure on periodical subscriptions in 1996/97, research volume (as measured by the number of Category A research staff), and the HEFCE's Research Assessment Exercise gradings for 1996.

DATA ANALYSED

Each member library submitted the following details within subject groupings for the year 1996/97:

- Periodicals expenditure
- Number of subscriptions
- Number of Category A research staff (from RAE submission)
- RAE grading

The data were then used to calculate:

- Total expenditure at each institution against total number of research staff. (This is different from the figure in the SCONUL analysis as it excludes generalist items and subscriptions in areas not being researched.)
- Total expenditure per member of research staff
- Within ten of the most common subjects:

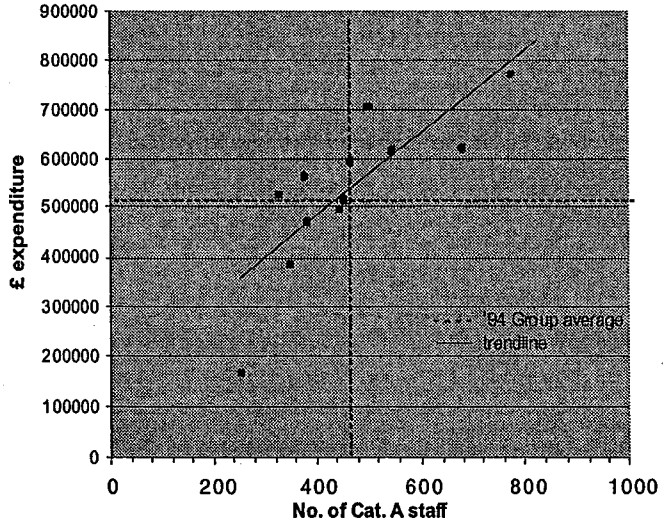
Expenditure, number of subscriptions and number of research staff correlated with RAE gradings

Expenditure per member of research staff in each subject.

RESULTS

Total expenditure on periodicals (excluding expenditure on generalist and 'non-research' items) by twelve of the '94 Group libraries is shown below in Figure 1, along with the number of Category A research staff at each institution.

Figure 1: £ expenditure against no. of research staff



Total expenditure per researcher (all subjects) ranged from £665 to £1,596. However, the bulk of the responses lay within the £900 - £1,300 range, with an average figure of £1,171; a figure that might prove useful to anyone presented with the challenge of estimating for the establishment of a totally new UK research library! Interesting comparisons suggest themselves: a per capita investment equivalent to a new desktop PC each year for each active researcher?

Naturally, the range of costs within particular subjects was far greater. The table for Physics is produced below, showing a range of per capita expenditure from £1,194 to £4,794, with only a weak correlation between expenditure levels and RAE outcomes, (which makes Physics an exception as a science subject - see Table 2).

Table 1: Results of Physics subject grouping

University	£ Expenditure	No. of subscriptions	No. of Category A staff	RAE grade	£ Expenditure per Cat. A researcher
A	35302	47	21	4	1681
B	9207	7	7	3	1315
C	58484	55	49	5	1194
D	65480	67	27	4	2425
E	30512	38	17	4	1795
F	86399	78	21	3	4114
G	41175	49	18	4	2288
H	not available	52	not available	4	not available
I	74296	100	not available	4	not available
J	80732	81	28.3	3	2853
K	19108	9	8	4	2388
L	87129	84	31	4	2811
M	76712	68	16	4	4794
Correlation (with RAE grade)	-0.041	0.011	0.522		

Table 2 displays the results of correlating expenditure, number of subscriptions and Category (Cat.) A staff with RAE grades in ten subject areas, and indicates the strength of the correlation in each case. Whether the correlation signifies a positive or negative relationship is also identified. The ten subject areas listed represent those which most of the '94 Group institutions researched. Unfortunately, too few of the '94 Group institutions worked in many of the other subjects, so similar correlations could not be analysed with any confidence.

Table 2: Expenditure, no. of subscriptions, and Cat. A staff correlated with RAE grades

(Key: weak=0-0.25, medium=0.25-0.45, strong=0.45-0.60, very strong=0.60 and over. E.g. a very strong and positive correlation existed between the no. of Psychology researchers and the RAE grade awarded)

Subject grouping	£ expenditure	No. of subs	Cat. A staff
Biological Sci. & Biochem.	Medium pos	Medium pos	Strong pos
Psychology	Medium neg	Medium neg	V.Strong pos
Chemistry	V.Strong pos	Medium pos	Medium pos
Physics	Weak neg	Weak pos	Strong pos
Maths, Stats & Computer Sci.	V.Strong pos	V.Strong pos	V.Strong pos
Engineering	V.Strong pos	V.Strong pos	Medium pos
Law	Weak neg	Weak neg	Medium pos
Social Sciences	Medium pos	Strong pos	Weak pos
English Lang. & Lit.	Medium neg	Medium neg	Weak pos
Education	Weak neg	Strong neg	V.Strong neg

As might be expected by anybody who reads the *Times Higher Education Supplement*, overall size, as measured by the number of active research staff, was by far the best predictor of RAE grade. With regard to periodical expenditure, a clear distinction was noticeable between science/technical/medical-based subjects and other subjects, the correlation between expenditure levels and RAE outcomes in science subjects being most often positive, whereas in non-science subjects this survey demonstrated that there was often a negative correlation.

In the light of these results, however, certain problems encountered whilst undertaking the study should be mentioned. Two key difficulties arose from the way in which the data were recorded. Firstly, the RAE subject groupings often contained a range of subject grades. In these instances only the highest recorded grade in the group was used in the calculation. Secondly, interdisciplinary titles or those 'shared' by different departments may have been counted in more than one RAE grouping. Alternatively, titles assigned on a faculty basis may in certain cases be excluded from the subject groupings.

Further complications arose from the possible incorporation of expenditure on electronic resources into the expenditure figures; and whether the '94 Group libraries opted to include periodicals acquired through exchange arrangements in their responses.

We were also interested to see if any differences could be discerned between those libraries operating some form of subject librarian structure and those not, but the survey only confirmed that nearly every '94 Group library operated a subject librarian system, so no comparisons could be made here. It would be truly interesting to examine any possible correlation between libraries using subject specialists for selection and those who don't, with levels of expenditure and quality outcomes. However, this work will have to wait for another sample group to be surveyed.