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Price and Value of Electronic Journals: A Survey at the Indian Institute of Science

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This article analyzes the most used scholarly electronic journals at a multi-disciplinary research institute in India, the Indian Institute of Science (IISc). Analysis of the top thirty journals at IISc shows that two-thirds of these journals belong to non-profit/society publishers and one-third to for-profit/commercial publishers. There is a remarkable difference between the prices that for-profit/commercial publishers charge libraries for scholarly journals and the prices that non-profit/society publishers and university presses charge. This price difference does not appear to reflect a difference in quality as measured by the number of recorded citations to a journal/impact factor and use of journal.

Introduction

Researchers use journals for the journals' inherent value – as perceived by the researchers. Generally, researchers do not categorize journals based on the type of publisher. However, an attempt is made here to analyse the top thirty journals used at the Indian Institute of Science (IISc), located in Bangalore, India. The objective is to find any relation between use and value.

The Indian Institute of Science is an institute of higher learning and is one of the oldest and finest centres of its kind in India. It has a high international standing in the academic world as well. The Institute had electronic access to around 6000 journals from different publishers in 2004. The Institute subscribed to all electronic journals from the following six publishers: Elsevier, Springer-Verlag, ASCE (American Society for Civil Engineering), IEEE, ACM Press, Institute of Physics in the UK and USA. In addition, users had access to science and technology journals in specialized areas from more than one hundred publishers all over the world. Internet facilities are available in all departments and researchers have 24-hour access to electronic journals.

The data presented in this article has been extracted from a user study of scholarly journals carried out by the author at the Indian Institute of Science in 2004. That study had sought to investigate scholarly journals usage in a multi-disciplinary institute in order to see usage pattern across different subjects [1]. The respondents were asked to list the titles of journals that they use regularly to identify the most used journals and to see how the journals were being used. From the total 562 journal titles mentioned by the Institute's users, the top 30 journals were further analyzed for this study.

Literature review

The first study regarding differences between commercial and non-profit publishers appeared in the literature two decades ago. In 1986, Henry Barschall looked at the cost of a small sample of physics journals (20 titles), as well as an even smaller number of philosophy and mathematics journals. Barschall (1986) employed a methodology previously used by the American Mathematical Society and others: comparison of costs per 1000 characters. He concluded that:

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> While one would expect journals published by not-for-profit publishers to be less expensive than those published by commercial publishers, the cost-per-character ratio of over 40 between the most expensive commercial [at $0.31 per 1000] and the least expensive not-for-profit publication [at $0.007] is larger than one might have expected. We found the variation to be similar for mathematics and physics journals.

Two years later, Barschall conducted another study using a much larger sample of over 200 physics journals. The results of this second study confirmed the results of the earlier study (Barschall 1988).

Loughner published a study in 1999 of the library budget at the University of Georgia. He concluded from the data he had gathered that a larger and larger proportion of library budget was going to a small number of major publishers. The library spent 76% of its science journal budget for publications from the top ten publishers. This was up from 54% in 1990. The list of the ten publishers that it spent the most money with in 1990 and 1999 included Elsevier, Springer, Wiley, Harcourt, Taylor & Francis, Blackwell, Kluwer, Plenum, Gordon Breach and Marcel Dekker (Loughner 1999).

In "Free Labor for Costly Journals?", Bergstrom reported on a price comparison of economics journals from non-profit and commercial publishers. The results showed that the six most-cited economics journals listed in the *Social Science Citation Index* were all non-profit journals and the library subscription prices for these journals averaged about $180 per year. Only five of the twenty most-cited journals were owned by commercial publishers, and the average price of these five journals was about $1,660 per year. The average price per page (calculated by dividing 2001 prices by the number of pages published in the year 2000) of the commercial journals was about six times as high, and the average price per citation was about sixteen times as high as for the non-profit journals. The differences in prices and cost-effectiveness between non-profit and commercial journals were similar for less prestigious journals (Bergstrom 2001).

Pricing studies by librarians show that the pattern found in economics is common to many disciplines. Commercial journals are more expensive than journals published by professional societies, but the most-cited and influential journals are almost universally those published at lower cost by professional societies. For example, Wilder (1998) found that about 50 percent of all citations in chemistry came from journals published by professional societies, but expenditure on these journals constituted only about 25 percent of library subscription costs for chemistry journals.

Another price study published by Bergstrom and Bergstrom in 2004 revealed a startling difference between the prices that university libraries must pay for academic journals from commercial publishers and the prices they pay for journals from professional societies and university presses. For example, in the fields of economics and ecology, the average institutional subscription price per page charged by commercial journals is about five times that charged by non-profit journals. These price differences do not reflect differences in quality as measured by number of recorded citations to a journal. For commercial journals the average price per citation is about fifteen times that for non-profit journals. Similar price differentials were found across a wide variety of scientific disciplines. These price differences had increased rapidly in fifteen years. The average real (adjusted for inflation) price per page for journals from commercial publishers had increased by 300% since 1985, while that of non-profit economics journals had increased by 50 percent (Bergstrom and Bergstrom 2004).

A report on a study in *Publishers Weekly* stated:

> While many university libraries face severe budget cuts, large commercial publishers in the academic journal market have enjoyed increasing profits. In 2002, for instance, revenue rose 26% and operating profit increased to 25% for Elsevier, the largest journal publisher in the science, technology, and medical field. (Sales and Earning 2003)

Pricing studies across subjects/disciplines were also reported in the literature. For example, Kean has conducted annual pricing studies for eighteen years. In the 18th Annual Study of Journal Prices for Scientific and Medical Society Journals, published in 2005, he reports that for the 251 journals studied, which were predominantly scientific and medical journals representing many different subject fields, the average U.S. institutional subscription price was $326.11. The average price per issue was $43.83 and the average journal had 7.44 issues per volume year. The pricing trends differed by discipline. For example, chemistry and physics titles, with an average 2005 price of $1,879.56, continue

to be more expensive than other subject categories surveyed (Kean 2005).

Methodology

The top thirty journals at the Indian Institute of Science (IISc) were identified and ranked by the number of researchers who reported using them.

In the present study *price per issue* has been considered for analysis. The Average Subscription Price per Issue (ASPPI) has been computed based on the following formula:

ASPPI = Annual Subscription Price of a Journal ÷ Number of Issues Per Year

The annual subscription prices in US dollars ($) have been collected from the 2004 price lists. It may be noted that the US dollar has been considered for all calculations in this study and only institutional subscription prices have been considered for analysis. The exception is the *EMBO Journal (The European Molecular Biology Organization Journal)* for which the 2003 subscription price has been used for analysis. Until 2003, Oxford University Press had published the *EMBO Journal*. Since January 2004, the Nature Publishing Group (NPG) has been publishing the *EMBO Journal* alongside its sister journal the *EMBO Reports*, which the Nature Publishing Group had published since January 2003. Beginning in 2004, a subscription to the *EMBO Journal* (24 issues/year) will by default include 12 issues of *EMBO Reports*. This means that a separate subscription price for the *EMBO Journal* in 2004 is not available.

Impact factor is one of the famous quantitative tools for ranking, evaluating, categorizing and comparing journals. Since 1975, impact factors for journals have been computed by the Institute of Scientific Information (ISI), producers of the *Science Citation Index*® and the *Social Sciences Citation Index*®, and published in its *Journal Citation Report (JCR)*®. Impact factors do change from year to year, so impact factor from two different years have been considered for better analysis. The impact factor of the top thirty journals used at IISc has been collected from the *Journal Citation Report (JCR)*® for the years 2001 and 2004.

The journal titles are shown in ranked order of use in Table 1, together with the name of their publishers, the 2004 annual subscription price, the number of issues per year, the Average Subscription Price Per Issue (ASPPI) and the impact factor for 2004.

As seen in Table 1, the most used journal at the Indian Institute of Science was *Nature,* which also had a high impact factor (32.182) in 2004. The next most used journal was *Science* with an impact factor of 31.853. The third one was *PNAS (Proceedings of the National Academy of Sciences of the United States of America)* with an impact factor of 10.5 in 2004.

Comparison between most used journals at the Indian Institute of Science (IISc) in India and the Max Planck Society (MPG) in Germany

The findings of this research in India are similar to an earlier study in Germany, a survey carried out at the Max Planck Society (MPG) in 1999 (Rusch-Feja and Siebeky 1999). Both studies were carried out in a basic research organization similar to an academy of sciences. Both studies were cross-disciplinary and cross-organizational so the results of both studies may be seen as having exemplary character as they were not restricted to certain subjects/disciplines. Moreover, both studies were focused on scholarly electronic journal usage among different publishers. For these reasons, a comparison between the top journals in these two studies is made here. To make a comparison of the two studies, the most used journals at the Max Planck Society and the Indian Institute of Science are presented in Table 2.

Comparison between the top twenty titles used at the MPG and those used at the IISc shows that four of the first six journals are common between the two studies. Interestingly, *Nature* is the most used journal in both studies, whilst *Science* is also in the top five in both lists. *Nature* is a weekly international journal and one of the world's top scientific journals. *Nature* publishes peer-reviewed research in all fields of science and technology on the basis of its originality, importance, interdisciplinary interest, timeliness, accessibility, elegance and surprising conclusions. *Science* is also one of the world's leading journals of original scientific research, global news and commentary. It seems that journals which focus on science in general, like *Nature* and *Science*, are being used by the IISc researchers regardless of their discipline.

Table 1: The Top Thirty Titles Used at the IISc

SN	Title of Journal Ranked by Number of Users	No. of Users	Name of Publisher	Number of Issues Per Year	2004 Subscription Price US$	Price per Issue US$	2004 Impact Factor
1	Nature	71	Nature Publishing Group	51	1,200	23.53	32.182
2	Science	53	American Association for the Advancement of Science	51	585	11.47	31.853
3	PNAS	31	National Academy Sciences	26	2,950	113.46	10.50
4	JACS (J of Am. Ch. Soc.)	28	American Chemical Society (ACS)	51	3,244	63.60	6. 903
5	Physical Review Letter	26	American Physical Society (APS)	52	3,260	62.69	7.22
6	JBC (J of Biological Chemistry)	22	American Society For Biochemistry and Molecular Biology (ASBMB)	52	1,950	37.5	6.482
7	Physical Review B	15	American Physical Society (APS)	48	6,625	138.02	3.08
8	Applied Physics Letter	14	American Institute of Physics (AIP)	52	2,255	43.36	4.31
9	Biosystems Engineer and Biochemistry	14	European Society for Agriculture Engineering (Elsevier)	12	864	72	0.496
10	JAP (J of Applied Physics)	14	American Institute of Physics (AIP)	A 12 B 12	{ 3,360	{ 140	A 1.452 B 2.215
11	JMB (J of Molecular Biology)	12	Elsevier (Academic Press)	50	5,620	112.40	5.542
12	J of Fluid Mechanics	11	Cambridge University Press	24	1,695	70.63	1.853
13	Angewandte Chemical International Edition	11	John Wiley & Sons, Ltd.	24	4,090	170.42	9.161
14	JCP (J of Chemical Physics)	10	American Institute of Physics (AIP)	48	4,785	99.69	3.11
15	Int. J for Num. Meth. in Engg.	09	Wiley InterScience	36	7,440	206.66	1.501
16	AIAA Journal	09	American Institution of Aeronautics and Astronautics (AIAA)	12	1,120	93.33	0.870
17	ALCHE	08	American Institute Of Chemical Engineering	12	1,140	95	1.761
18	Cell	08	Cell Press	26	1,068	41.07	28.389
19	IEEE Trans. On Signal Processing	08	IEEE	12	1,075	82.69	1.76
20	The EMBO J (Eu. Mo. Bio.)	07	Nature Publishing Group	24	1,425	59.37	10.456
21	JOC (J of Organic Chemistry)	07	American Chemical Society (ACS)	26	2,204	84.77	3.462
22	Int. J of Solids & Structures	07	Elsevier	52	6,703	128.90	1.378
23	J of Physical Chem. A& B	07	American Chemical Society (ACS)	A 51 B 51	{ 4262	{ 41.78	A 2.639 B 3.834
24	Physical Review E	07	American Physical Society (APS)	12	2,580	215	2.35
25	Acta Materialia	06	Elsevier	18	2,758	153.22	3.490
26	J of Sound and Vibration	06	Elsevier	50	6,058	121.16	0.828
27	Biotechnology & Bioengg.	06	Wiley InterScience	25	4,995	199.80	3.316
28	Physics of Fluids	06	American Institute of Physics (AIP)	12	1,965	163.75	1.76
29	Physical Review A	06	American Physical Society (APS)	12	2,410	200.83	2.90
30	Physical Review C	06	American Physical Society (APS)	12	1,885	157.08	3.13
Total				1,008	91,571	90.84	-

Table 2: The Top Twenty Titles Used at the MPG and the IISc

MPG			IISc		
Rank	Title of Journal	No. of Users	Rank	Titles of Journals	No. of Users
1	Nature	99	1	Nature	71
2	Cell	59	2	Science	53
3	JBC (Journal of Biological Chemistry)	42	3	PNAS (Proceedings of the National Academy Sciences)	31
4	PNAS (Proceedings of the National Academy Sciences)	37	4	JACS (Journal of American Chemical Society)	28
5	Science	28	5	Physical Review Letter	26
6	EMBO Journal (The European Molecular Biology Organization Journal)	25	6	JBC (Journal of Biological Chemistry)	22
7	Neuron	25	7	Physical Review B	15
8	Development	19	8	Applied Physics Letter	14
9	Nature Neuroscience	16	9	Biosystems Engineer and Biochemistry	14
10	Genes and Development	14	10	JAP (Journal of Applied Physics)	14
11	Biochemistry	13	11	JMB (Journal of Molecular Biology)	12
12	Journals of Neuroscience	12	12	Journal of Fluid Mechanics	11
13	Biophysical Journal	10	13	Angewandte Chemical International Edition	11
14	NAR (Nucleic Acid Research)	10	14	JCP (Journal of Chemical Physics)	10
15	Current Biology	10	15	International Journal for Numerical Methods in Engineering	09
16	Nature Medicine	09	16	AIAA Journal (American Institution of Aeronautics and Astronautics)	09
17	Molecular Cell	09	17	ALCHE	08
18	Nature Genetics	09	18	Cell	08
19	Journal of Cell Biology	09	19	IEEE Transaction on Signal Processing	08
20	JACS (Journal of the American Chemical Society)	08	20	EMBO Journal (The European Molecular Biology Organization Journal)	07

Table 2 shows that the following seven journals are common among top-twenty journals in both studies: *Nature, Science, PNAS (Proceedings of the National Academy Sciences of the United States of America), JACS (Journal of the American Chemical Society), JBC (Journal of Biological Chemistry), Cell* and *EMBO Journal (The European Molecular Biology Organization Journal).* It is interesting to have seven titles in common among the top-twenty journals in these two studies. An examination of the 2004 impact factors of these seven journals shows that they also have high impact factors according to the *ISI Journal Citation Report®* (See Table 1).

There are some differences among the other journals in the two studies. This may be because in the MPG study more responses were received from the Biomedical Section at the Max Planck Society while the present study received more responses from the Departments of Physics and Chemistry at the Indian Institute of Science.

Price and value of electronic journals: comparison and correlation

Table 1 reveals that three top journals at the Indian Institute of Science including *Nature*, *Science*, and *Cell* have impact factors above 20 in the *ISI Journal Citation Report®*. This confirms that journals with high impact factors are attracting researchers in India as much as all over the world.

Table 1 indicates that the most expensive journal among the top-thirty used at IISc was *The International Journal for Numerical Methods in Engineering*, which is published by the for-profit publisher Wiley InterScience. The *price per issue* in 2004 for this journal was US$206.60 and the impact factor was 1.501. The least expensive journal was *Science* which is published by the not-for-profit publisher, the American Association for the Advancement of Science. The *price per issue* for this journal was US$11.47 while its impact factor was 31.853. In or-

Table 3: For-profit/Commercial-Publisher Top-Thirty Journals at the IISc

	Title of Journal Ranked by 2004 Impact Factor	No. of Users	Name of Publisher	2004 Sub. Price US$	Price per Issue US$	2001 Impact Factor	2004 Impact Factor
1	Nature	71	Nature Publishing Group	1,200	23.53	27.955	32.182
2	Cell	08	Cell Press	1,068	41.07	29.219	28.389
3	The EMBO J (Eu. Mol. Bio)	07	Nature Publishing Group	1,425	59.37	12.459	10.456
4	Angewandte Chem. Int. Ed	11	John Wiley & Sons, Ltd.	4,090	170.42	8.255	9.161
5	JMB (J of Mole. Biolo.)	12	Elsevier (Academic Press)	5,620	112.40	5.826	5.542
6	Acta Materialia	06	Elsevier	2,758	153.22	2.658	3.490
7	Biotechnology & Bioengg.	06	Wiley InterScience	4,995	199.80	2.037	3.316
8	Int. J for Num. Meth. in Engg.	09	Wiley InterScience	7,440	206.66	1.239	1.501
9	Int. J of Solids & Structures	07	Elsevier	6,703	128.90	1.073	1.378
10	J of Sound and Vibration	06	Elsevier	6,058	121.16	0.821	0.828
11	Biosystems Engineering	14	Elsevier (European Society for Agr. Eng.)	864	72	0.736	0.496
Total				42, 221	114.73	-	-

der to obtain a more realistic comparison of price, the top-thirty journals have been categorized by type of publisher, shown in Table 3 and Table 4. The total subscription price for each group has also been calculated.

The journals in Table 3 and 4 are also ranked by their impact factors in 2001 and 2004. Comparison between impact factors in 2001 and 2004 shows that the impact factors of twenty of the top-thirty journals have increased since 2001. However, while the impact factors of these journals have differed between these years, overall the impact factors of the top-thirty journals have not substantially increased since 2001, except in the case of *Science* and *Nature*. The impact factor of *Science* increased from 23.329 in 2001 to 31.853 in 2004 and the impact factor of *Nature* rose from 27.955 in 2001 to 32.182 in 2004.

The impact factor of scholarly journals appears to be an important parameter for researchers at the Indian Institute of Science (IISc) in determining which journals to use. Table 3 and 4 reveal that the top-thirty journals at this institute have high impact factors in the *ISI Journal Citation Report*®. Journal impact factor is becoming an increasingly important parameter for evaluating journals all around the world. Moreover, publishers of journals use the impact factors to describe the importance of their journals among the research community. In most cases, the latest impact factors of journals are mentioned in the publishers' websites to show their prestige and importance. However, there are some debates regarding the suitability of impact factor for considering quality of journals. For example, Hoeffel (1998) commented that:

> Impact Factor is not a perfect tool to measure the quality of articles but there is nothing better and it has the advantage of already being in existence and is, therefore, a good technique for scientific evaluation. Experience has shown that in each specialty the best journals are those in which it is most difficult to have an article accepted, and these are the journals that have a high impact factor. These journals existed long before the impact factor was devised. The use of impact factor as a measure of quality is widespread because it fits well with the opinion we have in each field of the best journals in our specialty.

Table 3 and Table 4 show that non-profit/society publishers publish two-thirds of top-thirty journals and for-profit/commercial publishers publish only one-third of top-thirty journals. The ratio of top- thirty journals publication between society and commercial publishers is 63:36.

These tables show that non-profit/society publishers publish nineteen journals from the top-thirty journals at the Indian Institute of Science while for-profit/commercial publishers publish

Table 4: Non-profit/Society-Publisher Top-Thirty Journals at the IISc

SN	Title of Journal Ranked by 2004 Impact Factor	No. of Users	Name of Publisher	2004 Sub. Price US$	Price per Issue US$	2001 Impact Factor	2004 Impact Factor
1	Science	53	American Association for the Advancement of Science	585	11.47	23.329	31.853
2	PNAS (Proceedings of the National Academy Sciences)	31	National Academy Sciences	2,950	113.46	10.896	10.50
3	Physical Review Letter	26	American Physical Society (APS)	3,260	62.69	6. 668	7.22
4	JACS (J of Am. Chemical Society)	28	American Chemical Society (ACS)	3,244	63.60	6.079	6.903
5	JBC (J of Biological Chemistry)	22	Am. Soci. For Biochem. & Mol. Biology (ASBMB)	1,950	37.5	7.258	6.482
6	Applied Physics Letter	14	American Institute of Physics (AIP)	2,255	43.36	3.849	4.310
7	Journal of Physical Chemistry A& B	07	American Chemical Society (ACS)	{ 4,262	{ 41.78	A 2.630 B 3.379	A 2.639 B 3.834
8	JOC (J of Organic Chemistry)	07	American Chemical Society (ACS)	2,204	84.77	3.280	3.462
9	Physical Review C	06	American Physical Society (APS)	1,885	157.08	2.695	3.13
10	JCP (J of Chemical Physics)	10	American Institute of Physics (AIP)	4,785	99.69	3.147	3.11
11	Physical Review B	15	American Physical Society (APS)	6,625	138.02	3.070	3.08
12	Physical Review A	06	American Physical Society (APS)	2,410	200.83	2.810	2.90
13	Physical Review E	07	American Physical Society (APS)	2,580	215	2.235	2.35
14	JAP (J of Applied Physics)	14	American Institute of Physics (AIP)	{ 3,360	{ 140	A 1.722 B 1.984	A 1.452 B 2.215
15	Journal of Fluid Mechanics	11	Cambridge University Press	1,695	70.63	1.912	1.853
16	ALCHE	08	American Institute of Chemical Engineering	1,140	95	1.793	1.761
17	IEEE Trans. on Signal Processing	08	IEEE	1,075	82.69	1.239	1.760
18	Physics of Fluids	06	American Institute of Physics (AIP)	1,965	163.75	1.799	1.760
19	AIAA Journal	09	Am. Institution of Aeronautics & Astronautics (AIAA)	1,120	93.33	0.773	0.870
Total				49, 350	77.10	-	-

only eleven journals. Among these 11 journals, 5 journals are published by Elsevier, 2 journals by Wiley InterScience, 2 journals by Nature Publishing Group and Cell Press publishes only one journal. Table 3 shows that the following three non-profit/society publishers published 12 of the top journals at IISc: American Physical Society – 5 journals, American Institute of Physics – 4 journals and American Chemical Society – 3 journals.

Table 3 and Table 4 show that the Indian Institute of Science has spent $42,221 for subscription to 11 top commercial-publisher journals among the top-thirty in 2004 and at the same time spent $49,350 for the 19 society-publisher journals. It can be also observed from Table 3 and Table 4 that the *price per issue* of for-profit/commercial-publisher journals (11 journals) is $114.73 and the *price per issue* of non-profit/society-publisher (19 journals)

Table 5: Subject-Based Prices of the Top-Thirty Used Journals at the IISc

	For-profit Publishers of Top-Thirty				Non-profit Publishers of Top-Thirty			
	No. of Titles	Budget in 2004 ($ US)	Average Price ($US)	Price per Issue ($US)	No. of titles	Budget in 2004 ($ US)	Average Price ($US)	Price per Issue ($US)
Science-General	1	1,200	1,200	23.53	2	3,535	1,768	46
Physical & Chemical	5	27,049	5,410	150.27	16	43,865	2,742	85.84
Biological Science	5	13,972	2,795	102	1	1,950	1,950	37.5
Total	11	42,221	3,838	114.73	19	49,350	2,597	77.10

is $77.10. This means commercial-publisher journals are about 1.4 times more expensive than non-profit/society-publisher journals.

This result is close to the findings of a broad study conducted by the author. She had made a comparison between the top four commercial publishers (Elsevier, Taylor & Francis, Kluwer and Blackwell) and the top four non-profit/university publishers (Oxford University Press, Cambridge University Press, IEEE and the American Psychological Association) by average subscription price in 2003. The results had shown that the *average price* of the commercial publishers was 2.8 times higher than that of the non-profit/university publishers. In addition, the *price per issue* of the commercial publishers was 1.8 times higher than that of the non-profit/university publishers (Galyani Moghaddam 2006). The findings of the present study verify that in 2004 this was still the case.

Further analysis has been carried out on top-thirty journals at the Indian Institute of Science. The journals were categorized based on three broad categories: Science-General, Physical and Chemical Sciences, and Biological Sciences. Table 5 shows this subject-based price analysis. In addition, the Average Subscription Price (ASP) and the Average Subscription Price per Issue (ASPPI) have been calculated and shown in Table 5.

Table 5 seems to demonstrate that Physical and Chemical Sciences are the most costly disciplines (in term of scholarly journals) at the Indian Institute of Science among top-thirty journals, both for for-profit publishers and not-for-profit publishers as well. However, the price analysis for the top-thirty journals used at the Indian Institute of Science is based on a small number of journals in some disciplines and it is difficult to draw generalisations.

Conclusion

This study of the top thirty journals used at the Indian Institute of Science shows that the journals with a high impact factor in the *Journal Citation Report*® are attractive for researchers in India as well as all over the world.

Impact factors have long been considered as qualitative tools to measure scholarly journals' value. However, comparison between publishers of the top journals shows that there is a considerable difference between the prices that for-profit/commercial publishers charge to libraries for scholarly journals and the prices that professional societies and university presses charge. This price difference does not reflect higher impact factors or a difference in use or perceived value.

The study shows that the Indian Institute of Science spent $49,350 (54%) for 19 society-publisher journals and in the same time has spent $42,221 (46%) for subscriptions to 11 commercial-publisher journals in 2004. Although the commercially published journals are more expensive, researchers at the Indian Institute of Science appear to use scholarly journals that are being published by non-profit/society publishers more regularly. According to the present study, two-thirds of the thirty most used journals at the Indian Institute of Science (IISc) belong to society publishers and one-third to commercial publishers. This suggests that it might be useful to spend more on subscriptions to scholarly journals from professional societies. Comparison with the study undertaken in

Germany suggests that the results from IISc may not be an isolated example, and there may be general lessons that can be drawn from these studies.

The librarians at the Indian Institute of Science were very interested to learn about the results of the present study. They agreed that the results of the study would help them to make better decisions regarding the Institute's scholarly journal subscriptions.

Note

1. The result of that study is being refereed for publication elsewhere.

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