

EJOR history and geography in figures

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Short Communication

EJOR history and geography in figures

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Abstract: Some statistics on the first ten years of EJOR's life are given. Apart from growth, no trends are apparent, so that the figures are aggregated over time. Some assumptions about the authorship and the readership of EJOR are verified. Small countries without a national journal, with a language more akin to English, tend to contribute more articles per capita. North-Americans are not starting to dominate EJOR. The distribution of EJOR to other parts of the world is relatively larger than the contribution of articles received from them.

Keywords: Professional, history, geography, measurement

1. Introduction

The editorial policy of the *European Journal of Operational Research* given on the inside front cover of each issue, states that EJOR is intended to strengthen advances in Operational Research "by publishing high-quality, original papers that contribute to the practice of decision making, within or beyond Europe, ...". "The language will be English and attention will be paid to the quality of presentation. However, EJOR actively seeks to publish papers from non-native English speakers and therefore provides free assistance with improvements to the English of otherwise acceptable papers."

Every article is in English, which is good for the communication of all with all, but this forms a huge and lasting entrance barrier for those who are less well versed in the language.

Four factors may positively influence the number of contributions to EJOR from a given country:

(1) The size of the population—more heads and hands can do more OR; this is why our results are given per capita, if applicable.

(2) The income per capita—performing OR

and publishing about it will have an income elasticity above unity; in reviewing our results by country one should keep in mind which countries are 'rich' and which 'poor'.

(3) The circumstance of a country being small and not having an alternative outlet for publications by way of a strong, national journal with international circulation.

(4) A native language that is English, or related to English—the more closely, the better.

Statistics have been derived for all articles published in EJOR so far. We will now present the results and see if they confirm our expectations.

2. Results

At first, statistics were compiled per annum. Table 1 gives the time series.

The only series showing a clear trend refer to the size of EJOR. In ten years it has increased five-fold. (The size of EJOR is adapted to the backlog of accepted articles; it could very well stabilize or be reduced, depending on the number of submissions.)

The average article length is quite high (9.0

Table 1
EJOR statistics over time

	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	Total
1. Number of volumes	1	1	1	2	3	3	3	4	4	5	27
2. Number of articles	43	49	48	91	135	134	111	166	160	201	1138
3. Number of pages, gross	412	465	512	858	1250	1268	1255	1678	1674	2185	11 557
4. Number of pages, net	348	394	497	742	1099	1123	1102	1521	1514	1956	10 296
5. Average article length (pp.)	8.1	8.0	10.4	8.2	8.1	8.4	9.9	9.2	9.5	9.7	9.0
6. EURO share (%)	79.1	71.4	60.4	68.1	63.7	64.2	58.6	57.2	63.1	60.2	62.7
7. North-America share (%)	18.6	26.5	27.1	25.3	26.7	25.4	35.1	31.9	27.5	32.3	28.8
Multiple authorship (%)											
8. One author	58.1	61.2	43.8	47.3	54.1	59.7	54.1	48.2	44.4	47.8	50.9
9. Two authors	34.9	26.5	43.8	39.6	36.3	30.6	36.9	38.6	42.5	35.3	36.8
10. Three or more authors	7.0	12.2	12.5	13.2	9.6	9.7	9.0	13.3	13.1	16.9	12.3
11. International authorship (number of papers)	0	3	4	7	12	7	7	14	12	16	82

Explanation of rows: (3) is the total number of pages published; (4) is the net number of pages devoted to articles; (5) = (4)/(2); (6) is the percentage of all articles whose first author is from a EURO member country; (7) is similar for North-America; (8) is the percentage of all articles having one author; etc.

pages of about 750 words = about 6750 words), but is not increasing. EURO member countries maintain their majority share. There is no evidence of increased authorship by North-Americans nor does there seem to be a change in multiple authorships. The number of international authorships increases per annum but not per volume.

It was thus decided to aggregate the figures over EJOR's first ten years.

Table 2 gives aggregate statistics for every country of the first author of any EJOR paper. If a country has a ratio of unity in the last column of Table 2, it performs relatively to its population as well as the overall world average; if the ratio is higher, it performs better. However, one should realize that the world average is depressed by large, low-performing countries like China and India.

The EURO subtotal relative performance average is 4.0 times as high as the world average. The USA (3.4) performs relatively worse than EURO and Japan (0.5) much worse, but Canada (6.7) performs better than the EURO average.

In Table 3, the analysis is repeated for the EURO member countries, ranked by the ratio EJOR share/population share, which is equivalent

to the number of articles per capita.

Israel is also a phenomenon in other respects. Denmark, the Netherlands, Finland and Belgium are small countries. Finnish is a non-Indo-Germanic language. The Finns must learn English letter by letter, an achievement that will be appreciated by anyone who has tried to learn and write a language belonging to a different family from his own. The languages of Denmark, the Netherlands and Belgium (Flanders) are Germanic, close to English. The U.K. has the natural but unjust advantage of being English-spoken. Greece, Norway, Sweden and Austria are small countries without a strong international journal of their own.

Germany and France perform below average. Probably because they have strong national journals with an international flavour. Portugal, Italy and Spain have Romanic languages, which are more remote from English than the Germanic ones. For Poland, Yugoslavia, Turkey and Egypt, apart from language, income per capita could play a part.

Let us finally cast an eye on Table 4. It compares where EJOR 'comes from' and where EJOR 'goes'. The share of contributions from the EURO member countries exceeds their share of subscrip-

tions. For North-America it is about even. But the Far East has a much smaller contribution share than its subscription share. We attribute this to

the language barrier: it is still more difficult to write English, than to read English, for non-Indo-Germanic language speaking people.

Table 2
Aggregate statistics for all countries that contributed to EJOR

Country	(1) Number of articles	(2) EJOR share (%)	(3) Population (millions)	(4) Population share (%)	(5) EJOR share/population share
Australia	16	1.4	14.9	0.5	3.1
Austria	12	1.1	7.6	0.2	4.6
Belgium	52	4.6	9.9	0.3	15.2
Brazil	3	0.3	124.0	3.8	0.1
Canada	57	5.0	24.3	0.7	6.7
Chile	2	0.2	11.3	0.3	0.5
China	2	0.2	1000.7	30.5	0.0
Denmark	34	3.0	5.1	0.2	19.1
Egypt	2	0.2	43.5	1.3	0.1
Finland	26	2.3	4.8	0.1	15.6
France	44	3.9	54.0	1.6	2.3
German Dem. Rep.	2	0.2	16.7	0.5	0.3
Germany, Fed. Rep.	67	5.9	61.7	1.9	3.1
Greece	29	2.5	9.7	0.3	8.6
Hungary	15	1.3	10.7	0.3	4.0
India	22	1.9	685.2	20.9	0.1
Ireland	5	0.4	3.4	0.1	4.2
Israel	35	3.1	3.9	0.1	25.5
Italy	33	2.9	56.6	1.7	1.7
Japan	20	1.8	117.6	3.6	0.5
Korea, Rep. of	4	0.4	18.3	0.6	0.6
Kuwait	1	0.1	1.5	0.0	2.0
Malaysia	3	0.3	13.4	0.4	0.6
Mexico	5	0.4	71.2	2.2	0.2
Netherlands	94	8.3	14.2	0.4	19.0
New Zealand	3	0.3	3.2	0.1	2.7
Nigeria	1	0.1	79.7	2.4	0.0
Norway	11	1.0	4.1	0.1	7.7
Papua New Guinea	1	0.1	3.1	0.1	0.9
Poland	18	1.6	35.9	1.1	1.4
Portugal	9	0.8	9.8	0.3	2.6
Saudi Arabia	1	0.1	9.3	0.3	0.3
Singapore	1	0.1	2.4	0.1	1.2
South Africa	5	0.4	26.1	0.8	0.6
Spain	18	1.6	37.7	1.2	1.4
Sweden	16	1.4	8.3	0.3	5.5
Switzerland	9	0.8	6.4	0.2	4.1
Thailand	3	0.3	47.5	1.4	0.2
Turkey	6	0.5	45.4	1.4	0.4
United Kingdom	174	15.3	55.8	1.7	9.0
United States	271	23.8	229.8	7.0	3.4
U.S.S.R.	1	0.1	267.7	8.2	0.0
Yugoslavia	5	0.4	22.5	0.7	0.6
Total	1138	100.0	3279.1	100.0	1.0
EURO subtotal	714	62.7	511.0	15.6	4.0

Explanation of columns: (2) = $100 * (1)/1138$; (3) gives estimated population as of 1981, source: *The Europa Year Book 1985*; (4) = $100 * (3)/3279.1$; (5) = $(2)/(4)$. Any differences in column totals are due to rounding.

Table 3
Aggregate statistics for EURO member countries, ranked by number of articles per capita

Country	(1) Number of articles	(2) EJOR share (%)	(3) Population (millions)	(4) Population share (%)	(5) EJOR share/population share
Israel	35	4.9	3.9	0.8	6.3
Denmark	34	4.8	5.1	1.0	4.8
Netherlands	94	13.2	14.2	2.8	4.7
Finland	26	3.6	4.8	0.9	3.9
Belgium	52	7.3	9.9	1.9	3.8
United Kingdom	174	24.4	55.8	10.9	2.2
Greece	29	4.1	9.7	1.9	2.1
Norway	11	1.5	4.1	0.8	1.9
Sweden	16	2.2	8.3	1.6	1.4
Austria	12	1.7	7.6	1.5	1.1
Hungary	15	2.1	10.7	2.1	1.0
Ireland	5	0.7	3.4	0.7	1.0
Switzerland	9	1.3	6.4	1.2	1.0
Germany, Fed. Rep.	67	9.4	61.7	12.1	0.8
Portugal	9	1.3	9.8	1.9	0.7
France	44	6.2	54.0	10.6	0.6
Italy	33	4.6	56.6	11.1	0.4
Poland	18	2.5	35.9	7.0	0.4
Spain	18	2.5	37.7	7.4	0.3
Yugoslavia	5	0.7	22.5	4.4	0.2
Turkey	6	0.8	45.4	8.9	0.1
Egypt	2	0.3	43.5	8.5	0.0
Total	714	100.0	511.0	100.0	1.0

Explanation of columns: same as for Table 2.

Table 4
Percentage distribution of EJOR input and output

Area	(1) Input	(2) Output
EURO-pe	62.7	49.4
North-America	28.8	26.7
East-Asia	5.1	17.2
Rest of the world	3.3	6.6
	100.0	100.0

Explanation of columns: (1) is the percentage share in all EJOR articles by first author; (2) is the percentage distribution of EJOR institutional and personal subscriptions, as of 1985, by courtesy of North-Holland Publishing Company.

3. Concluding remarks

We have seen that EJOR publishes papers from 'within or beyond Europe' and that its circulation is world-wide. Its centre of gravity is the EURO Association area, but it may truly be called an international journal. In a future study, we intend to compare the degree of 'internationality' of EJOR and other 'international' journals.