

This file has been cleaned of potential threats.

If you confirm that the file is coming from a trusted source, you can send the following SHA-256 hash value to your admin for the original file.

046642d418217730aa9acd0ff6721af69e0e81518019a828489cc5909315d40d

To view the reconstructed contents, please SCROLL DOWN to next page.

## Quantity of Contributions of the Middle East to Linear Algebra

Mohammad Sal Moslehian, Department of Pure Mathematics,  
Ferdowsi University of Mashhad, P. O. Box 1159, Mashhad 91775, Iran.  
<http://profsite.um.ac.ir/~moslehian/>

Country	Population	Total papers	SIMAX	LAA	LAMA	NLAA	ELA	per million pop.	JOT
Israel	8,146,300	179	24	113	11	7	24	21.97	10
Iran	77,777,500	148	1	107	19	2	19	1.90	7
Turkey	76,667,864	46	5	26	7	4	4	0.60	6
Jordan	6,637,160	26	0	14	10	0	2	3.92	0
Saudi Arabia	30,770,375	16	0	11	5	0	0	0.52	1
Kuwait	4,044,500	9	3	4	0	2	0	2.22	0
Oman	4,055,418	6	0	5	0	1	0	1.48	1
Lebanon	4,822,000	5	0	3	2	0	0	1.04	0
Egypt	87,230,800	5	1	3	0	1	0	0.06	0
United Arab Emirates	9,446,000	4	1	3	0	0	0	0.42	2
Palestine	4,420,000	2	0	2	0	0	0	0.45	0
Qatar	2,077,357	1	0	0	1	0	0	0.48	0
Yemen	25,956,000	1	0	1	0	0	0	0.04	0
Cyprus	858,000	0	0	0	0	0	0	0	2
Iraq	36,004,552	0	0	0	0	0	0	0	0
Syria	21,987,000	0	0	0	0	0	0	0	0
Bahrain	1,348,000	0	0	0	0	0	0	0	0

A region consisting of countries mostly in southwest Asia is known as the Middle East. While most of its member countries have suffered in recent decades from some internal or external wars or conflicts, there are some active mathematicians in these countries working hard in the world of Linear Algebra.

The table shows how many papers were published in the years 2004-2013 by mathematicians with affiliations in the Middle East in the leading journals in linear algebra, i.e., SIAM Journal on Matrix Analysis and Applications (SIMAX), Linear Algebra and its Applications (LAA), Linear and Multilinear Algebra (LAMA), Numerical Linear Algebra with Applications (NLA) and Electronic Journal of Linear Algebra (ELA). The first and the second columns give the list of Middle East countries and their population based on Wikipedias data. The third column presents the total numbers of papers published from 2004 to 2013 in SIMAX, LAA, LAMA, NLAA and ELA (the next five columns show the number of publications in each of these journals). The data was obtained from Scopus.

As we can see, Israel and Iran top the list in number of total publications significantly ahead of other countries. Since the number of publications is often correlated to the population of countries (in fact, mathematicians), we present the number of paper publications of each country per one million population on the ninth column. As one observes, the situation of Jordan is rather unique – being fourth in the total number of publications, and second in the number of publications per one million people. It is worth noting that among 26 papers of Jordanian mathematicians, 15 papers were published by one mathematician. The situation is rather similar in some other countries, e.g., one may notice that all 5 papers of Lebanon were written by one person. Of course, this is a common face of the third world (developing) countries that any progress in such countries is often based on activities of a few numbers of its individuals not on the existence of any scientific traditions or systematic program.

In Operator Theory, which can be regarded as a sort of infinite dimensional linear algebra, one can see the same model of the situation of these countries as we examine the *Journal of Operator Theory* (JOT) and insert the numbers of paper publications of the Middle East countries in this journal in the period 2004-2013. Even the numbers of mathematics journals of high level in these countries obey a similar pattern. If we consider

the prestigious list “The Reference List of Journals” of MathSciNet we may observe that only three Middle East countries have journals on this list: Iran, Israel and Turkey.

The situation of Middle East countries brings to mind the saying “everything suits everything else” of Mozaffar ad-Din Shah Qajar, an incompetent king of Iran about 120 years ago, when people asked him about the poor economics, unbalanced social welfare, weak culture and political problems throughout the country. In other words, the scientific contribution of these countries is similar to the other components of their life.