

Full Length Research Paper

Scholarly publishing in Muslim countries with special reference to research in neuroscience by Turkish Scholars

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Research potential of Turkish scholars in Neuroscience and their Social Networks are highlighted in this paper. Turkey's contribution to the world's scientific literature during the period 2000 to 2010, has been taken for this study. The analysis has been done on research potential of Turkish Scholars, publication pattern in neuroscience and existence of social net works. The findings show that there is a gradual growth in the research productivity by Turkish Scholars and they prefer to publish their research findings in journals from United Kingdom, Netherland and United States. Also the Turkish Scholars have the international level social network linking many countries, of which USA, Germany and France have the major share.

Key words: Turkish Research Productivity, Neuroscience, Scholarly publishing, Bibliometrics.

INTRODUCTION

Scholarly communication is a continuous process involving continuous discussion, writing, sharing and seeking information from other scholars in their field. Communication involving the exchange of results of research is a crucial aspect of science and its development which results in the development of the country. Science communication is facilitated by periodicals, popularly known as journals. Scientific productivity studies have been made from different angles. Impact of social change on scientific productivity, relationship of publication output on scientific recognition, identification of elites in different disciplines, occurrence of discoveries in different cultures etc. are some of the approaches made in this line.

An interesting study of scientific productivity made three decades back is that of Yuasa. Yuasa made a statistical study of the scientific achievements in various countries that showed the shifting of the

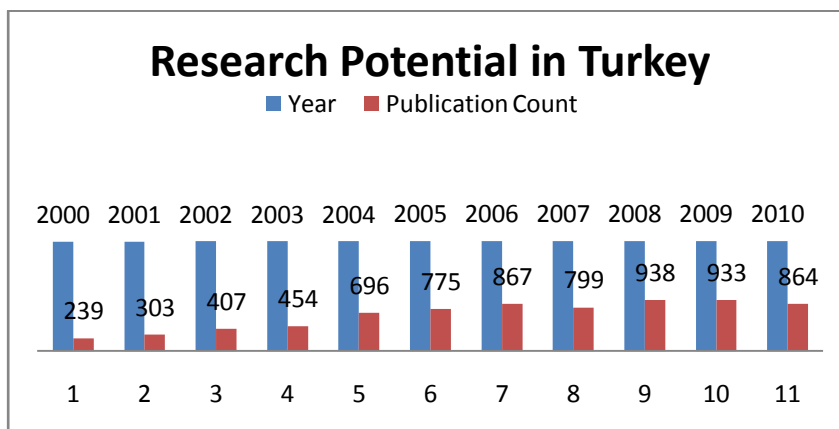
world scientific dominance from one country to another. He found out that this dominance shifted from Italy to Britain, then to France, from France to Germany and finally to USA in the 20th Century. In this study we are highlighting the scholarly publication of Turkish Scholars in Neuroscience during the period 2000 to 2010.

Turkey – A Model for other Muslim countries

The US President Obama, in a message sent to an Italian newspaper mentioned that "The fact that it [Turkey] is a democracy and a country that is mostly Islamic makes it a critically important model for other Muslim countries of the region."² Ramzy Baroud recently wrote an article presenting Turkey as a "regional model" for the neighboring countries in the Middle East.

NEUROSCIENCE

Neuroscience is a vast field of study that encompasses the workings of the nervous system. Neuroscience dawned as a scientific discipline in the middle of the

Table1: Research Potential in Turkey

Year	Count
2000	239
2001	303
2002	407
2003	454
2004	696
2005	775
2006	867
2007	799
2008	938
2009	933
2010	864

20th century. Later neuroscience emerged as a technology that can describe the workings of the nervous system. Neuroscientists study all aspects of the nervous system that starting from the evolutionary development of the nervous system to the study of biochemical signals transmitted by nerves. Research on Neuroscience include the study of healthy nervous systems as well as pathology. Neurosurgeons perform delicate surgical operations on the brain, while the specialists in the field of neuroscience study and analyse how people learn, think and perform all the tasks.

METHOD

This study aims to investigate the scholarly publishing pattern of the Turkish scholars in the field of Neuroscience. Data has been downloaded from Thomson Reuters' ISI Web of Science (WoS) for the period from 2000 to 2010. A total of 7275 unique records were downloaded each record containing information about the author name(s), publication year, publication count, language, place of publication.

The investigation has been done based on the following research questions:

What is the Research Potential of Muslim Countries especially by Turkish scholars

What is the scholarly publication pattern of Turkish Scholar in the field of Neuroscience?

Do the Turkish scholars have any social networks connecting various countries of the world

REVIEW OF LITERATURE

Umut Al and Zehra Taşkın found that there is increasing trend of multiple authorship in the global scientific literature. Also they observed that though

their study covered a period of 40 years, 80% of the total publications belong to the period 2000 onwards

ZAINAL and ZAINAB analysed biomedical and health sciences publication productivity from Malaysia. They analysed the publication pattern like growth, authorship and collaboration pattern, core journals used, and citations obtained. Their research identified that the main contributions in biomedical and health sciences by Malaysian scholars were journal articles (73.3%). The other findings were 63.3 per cent of the total contributors have published only one article during the study period and team research was preferred by them. The study has enabled the librarians and information professionals to identify active researchers and active research areas in the field of biomedical and health sciences.

KIRA et al analysed the research productivity (Quantity and Quality) in the field of tobacco control by scientists in New Zealand. The primary objective of this paper was to investigate New Zealand's (NZ) Tobacco Control research capacity along with the quantity and quality of publications. They found that there had been an increase in number of publications, impact factor of publications and number of authors. The results of the study show an encouraging trend in NZ Tobacco control research, with an increase in research productivity, quality, and in research capacity. The reason for this trend was due to the government policies and funding. Table 1.

MOLATUDI et al studied the practices of bioinformatics research in South Africa using bibliometric techniques. The study focused on common concepts related to biological data organisation, retrieval and analysis; the development and application of tools and methodologies in biological computation; and related subjects in genomics and structural bioinformatics. They found that research in bioinformatics by South African scholars had grown by 66.5% between 2001 and 2006. However, the South

Sl.No	Name of the Core Journals	Publication Count
1	EUROPEAN JOURNAL OF NEUROLOGY	350
2	EUROPEAN NEUROPSYCHOPHARMACOLOGY	312
3	JOURNAL OF CLINICAL NEUROSCIENCE	284
4	TURKISH NEUROSURGERY	278
5	EPILEPSIA	272
6	JOURNAL OF NEUROLOGY	212
7	NEUROMUSCULAR DISORDERS	206
8	JOURNAL OF CHILD NEUROLOGY	193
9	ACTA NEUROCHIRURGICA	183
10	MULTIPLE SCLEROSIS	164

Table 2: identification of journals by Turkish in neuroscience

African share of world production is not on par with comparator countries, Brazil, India and Australia.

Table 1 shows that there is gradual growth in the Turkish research productivity in Neuroscience during the study period 2000 to 2006. There is slight decline in the productivity during the years 2007, 2009 and 2010. Though there is decline in the years 2007, 2009 and 2010 the average growth rate works out to 0.11 showing that every year the research in Neuroscience by Turkish scholars will grow by 10 per cent. An application of Time series analysis shows that the estimated publication count in the years 2015 and 2020 would be 1398 and 1766

Core Journals identified by Turkish Scholars in Neuroscience

Bradford's Law serves as a general guideline to librarians in determining the number of core journals in any given field. As per this law, all the scientific journals relevant to a given subject are assigned ranks according to the number of articles they carry on the subject and then the journals are grouped into 3 parts each containing the equal number of articles. The first part is called as Core of journals on a subject containing the highest ranking journals that covers one-third of all the articles. Relatively these journals are few in number than the other two parts.

The total number of journals that have contributed to research productivity in 'Neuroscience' is 168 of which 10 are core in nature (Table 2). Among the journals 'EUROPEAN JOURNAL OF NEUROLOGY' and 'EUROPEAN NEUROPSYCHOPHARMACOLOGY' from United Kingdom and Netherlands respectively, ranks first and second of the total output. The third ranked journal 'JOURNAL OF CLINICAL NEUROSCIENCE' is from United States. Here it is to be noted that the Turkish Neurosurgery from Turkey is in the fourth place which mark the high confidence level

among the Turkish scholars. The number of journals do not fall in line with Bradford's law

Turkish Research by Geographical Distribution

More number of research papers of Turkish Scholars in Neuroscience are attracted by journals from USA, England and Netherlands. Of the total research papers, only a limited number (5.59 per cent) are published in journals from their own country. A study of Social networks of Turkish Scholars in Neuroscience research shows that 86 per cent of the total research are of collaborative effort. These social networks are at National and International level. At the international level major collaboration is with USA and Germany. Other collaborating countries are England, Canada, Japan, Netherlands, Australia, Switzerland, Israel etc. Turkey is turning to be a model for other Muslim Countries and hence efforts are being made by Turkish scholars to have international research collaboration with other countries (table 3).

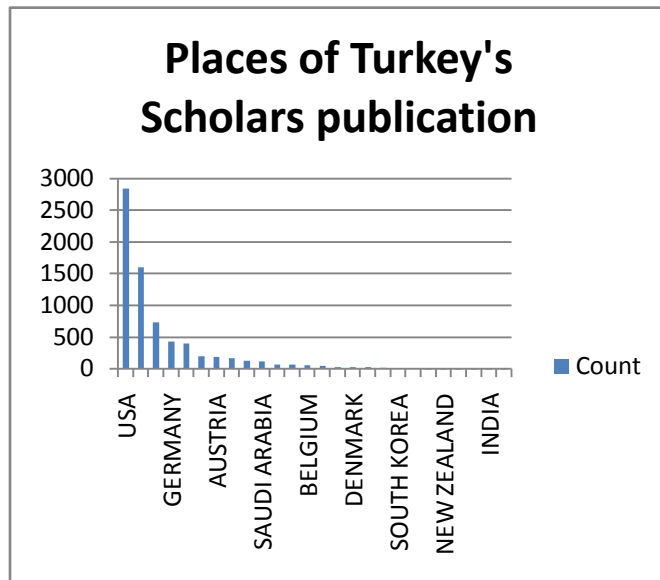
Collaborative Research

Team research is a phenomenon of growing interest from a research policy perspective as well as for deepened understanding the social and cognitive mechanisms that shape the scientific practice of today. John Ziman discussed that the organizational units of modern science are not individuals, but groups. It is also reflected that collaborative research is replacing solo research as found by Kumaravel, in his Scientometric analysis of Genetic Engineering research output. This is true in the case of Neuroscience research by Turkish scholars since 86 per cent of the total output are of collaborative effort (table 4).

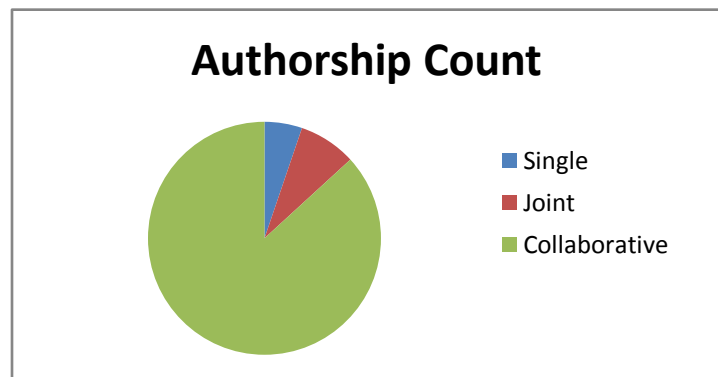
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Table 3: research by geographical distribution

Places of publication	Count	Percent
USA	2852	39.2
ENGLAND	1609	22.12
NETHERLANDS	739	10.16
GERMANY	439	6.03
TURKEY	407	5.59
SCOTLAND	198	2.72
AUSTRIA	194	2.67
SWITZERLAND	175	2.41
CANADA	133	1.83
SAUDI ARABIA	123	1.69
FRANCE	74	1.02
JAPAN	72	0.99
BELGIUM	58	0.8
IRELAND	53	0.73
ITALY	32	0.44
DENMARK	27	0.37
POLAND	27	0.37
AUSTRALIA	26	0.36
SOUTH KOREA	14	0.19
U ARAB EMIRATES	7	0.1
CROATIA	5	0.07
NEW ZEALAND	4	0.05
NORWAY	3	0.04
HUNGARY	2	0.03
INDIA	1	0.01
MALAYSIA	1	0.01
Total	7275	100



Authors	Count	Percent
Single	380	5.22
Joint	580	7.97
Collaborative	6315	86.8



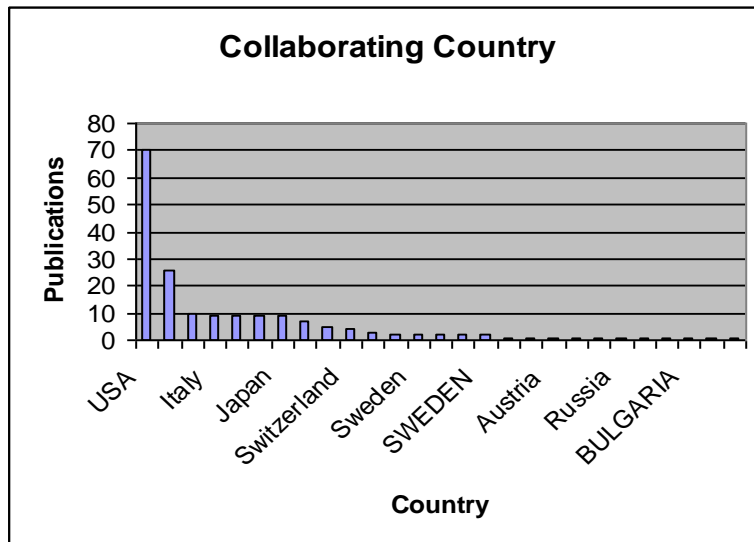
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collaboration with other countries.

CONCLUSION

To summarize, we have seen how Islamic countries, especially Turkey is competing in scientific research

Social Network of Turkish Scholars



Social network with the places	Number of Collaboration
USA	70
Germany	26
France	10
Italy	9
England	9
Canada	9
Japan	9
Netherlands	7
Australia	5
Switzerland	4
Israel	3
Denmark	2
Sweden	2
Belgium	2
South korea	2
Sweden	2
Greece	1
Spain	1
Austria	1
Oman	1
Iran	1
Russia	1
Wales	1
Hungary	1
Bulgaria	1
Norway	1
Cyprus	1

especially in the field of Neuroscience. As a result of this study it could be said that the inclining trend of collaborative authorship both at the national and international level exists in Neuroscience research also. Collaborations at both national and international levels would especially help the novice researchers to increase their research abilities and to produce more quality publications.

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