



Higher Education Research in Muslim Societies

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Global research is expanding at an unprecedented rate. Researchers from diverse countries are increasingly contributing to science worldwide. Among them are researchers in Muslim societies. In modern-day science, where research production is measured by scientific publication numbers, citation influence and other alternative metrics, higher education research in Muslim societies can be best positioned as emerging.

This paper discusses the 15 highest-publishing research systems among Muslim societies. These 15 systems published 5.15 percent of all Web of Science (WoS) papers globally in the last three decades (1,702,039 articles out of a global total of 33,026,981), although their combined population represents 14.16 percent of the world's total population. In other words, these research systems had a slow start. However, research in Muslim societies is increasingly picking up pace as some of these systems are now the fastest growing in the world.

There are significant variations among Muslim societies in terms of research productivity. Among the 15 countries, only Turkey and Iran published more papers than the

Abstract

Global research is pluralizing. Muslim societies are now among the fastest-growing science systems in the world, despite a slow start. This article discusses higher education research in Muslim societies regarding their growth, international/domestic research collaborations, citation recognition, and research area focus. The article also highlights several challenges, including relatively low attention to humanities research, to which the rich Muslim culture can contribute significantly, and focusing on short-term wins through double affiliations in some systems.

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world average of 206,684, with 483,735 and 408,463 papers, respectively. They are followed by Egypt, Saudi Arabia, Malaysia, and Pakistan. The latter four systems had a relatively similar number of papers published in the last three decades (ranging between 100,000-200,000). These six systems differentiate themselves from the others in terms of system size, as the others had significantly fewer publications in the last three decades.

Striking Growth Rate

Although Muslim societies are mostly below the world average in terms of system size by research publications, their growth rate is striking. Some of them, including Indonesia, Malaysia, and Iran, have the highest growth rates in the world, as a recent study by Marginson shows. Their growth rates are much beyond that of China, a system repeatedly heralded as fast-growing.

An important indicator to assess the volume of research contributions from societies is research intensity, defined as the total number of publications divided by population. According to this metric, while Muslim-majority systems underpublished till the late 2010s, this trend began to change in the late 2010s, when nine out of the 15 selected Muslim societies started demonstrating research intensity higher than the world average. Qatar, Saudi Arabia, the United Arab Emirates, Iran, and Turkey were the most research-intensive among Muslim societies in 2020.

This increasing trend, combined with the significant population Muslim societies represent globally (approximately one-fourth of the globe, according to a report by Pew Research Center), paints a promising picture of increased scientific contributions from researchers in Muslim societies to global science.

International and Domestic Research Collaborations

The connectivity of published research, as measured by coauthorships, can also be important in understanding the nature of science systems. Muslim-majority systems tend to demonstrate higher proportions of international research collaborations and lower proportions of domestic research collaborations when compared to the world averages.

There could be two explanations for this. One explanation repeatedly used in the literature is that relatively small and emerging systems collaborate more internationally than domestically because they have fewer authors to collaborate with domestically. To illustrate, the United Arab Emirates, Saudi Arabia, and Qatar had respectively 83 percent, 80 percent, and 80 percent of their papers published with international collaboration, while the world average is 27 percent. Supporting this argument, Turkey and Iran, being larger systems, had international research collaborations levels closer to the world average (28 percent and 34 percent, respectively).

Another explanation is that domestic collaborations could be less visible in global science due to language and database coverage matters. Domestic research publications do not have to be in English, and such publications tend to be less visible globally.

Scientific Influence

The quantity of scientific publications can only show part of the picture. Scientific influence, as measured by citation-related data, can provide further perspective on how Muslim-majority systems are faring.

Among the examined Muslim societies, scientific influence is higher in well-funded and smaller systems, such as those in the Gulf region. What they lack in size, they compensate for in citation recognition, as they have more than 40 percent of their publications in the top quartile of journals. Also, Qatar, Saudi Arabia, and the United Arab Emirates all have higher-than-world-average percentages of documents with top 10 percent citations, respectively 16 percent, 14 percent and 12 percent.

This finding at the surface level can be considered as a strength. However, discussions in the relevant literature about the distortions caused by global rankings and funding of double affiliations of overseas-productive scholars should also be considered. Such practices happen even in the most established systems; however, the systems in the Gulf area have both the means (they are well-funded compared to others) and the motivation (desire to go up quickly as emerging systems) to do so.

Research Area-Related Analysis

Research area-related analysis of publications can provide a more nuanced picture of the contribution of Muslim societies to global research. The data indicate that Muslim societies have an increased focus on STEM areas, which is congruent with global trends. However, the attention given to humanities research is consistently lower across the top 15 Muslim societies compared to the global average. To illustrate: approximately 4 percent of research worldwide is on humanities, while the average figure for the research conducted in Muslim societies for humanities research is approximately 1 percent in the last three decades, according to WoS data.

There could be two main reasons behind this. First is that humanities research of Muslim-majority systems could be less visible in the international databases because they are not published in English or in the Anglo-American method of sharing research, which is journal articles. This is probably a strong reason; less visible does not mean nonexistent.

The second reason could be linked to the relationship between humanities research and the freedom levels of a research system (see seminal works by Martha Nussbaum). Variation within Muslim-majority countries that can be seen in my data supports this argument to some extent: countries with higher levels of freedom as measured by the Economist Intelligence Unit and Freedom House tend to have relatively higher levels of publications in the humanities category. This latter argument needs further investigation, but the early findings indicate this direction.

Conclusion and Challenges

Muslim-majority research systems are dynamic and largely emerging systems. They are on the rise in terms of the number of scientific publications, even after accounting for the global increase in research publications. Some of these countries have the fastest-growing science systems globally. However, there are certain challenges ahead. These science systems have varying levels of scientific influence as measured by citation recognition. Citation recognition naturally takes time to accumulate. In this regard, a challenge is the tendency to seemingly speed up the development of citation recognition through paid double affiliations, especially by smaller and well-funded systems. As rapidly emerging science systems, Muslim societies should focus on sustainable capacity building (i.e., cultivating talent and system-policy improvements) rather than short-term wins. Also, the subject area analysis indicates a lower proportion of humanities research. Humanities research is arguably the most culturally rich area, and Muslim societies have much to offer to global humanities research. ▲

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