



ISSN-Printed	2195-8432
ISSN-Online	2195-8440
ISSN-CD ROM	2195-8459

Science and Technology Development in the Sharia-based Economic System

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Abstract

History recorded that there was a period of time when muslims were triumphant in science and technology, known as the Islamic golden age. Not only muslims were preserving knowledge and translating works from foreign languages, such as India, China, Greece and Persia, they were also advancing and extending science and technology. The era was strongly supported among others by the application of the sharia-based economic system that allowed the governments to have stable national economic conditions as well as healthy scientific environments.

In this paper, we will first review the history of science and technology in the medieval Islamic era. As it is a wide subject indeed (see, e.g., [1,2,3]), it will be impossible to discuss the history in great details within half an-hour. Because of the time-constraint we will concentrate on a tiny part of it, particularly in mathematics. We will discuss how algebra, that is commonly known among muslims as the contribution of Al-Khawarizmi, and geometry shaped the culture and art of that time, their importance in the development of modern mathematics [4,5,6], and their relation to the so-called quasicrystals that won the Nobel Prize in Chemistry 2011 [7].

The second part of the paper will be on the relevance of the sharia-based economic system for science and technology development. In relation to the first part of the talk, We will first briefly discuss how the economic system drove the development of science and technology in the medieval time and how it is still an important drive. On top of that, as a major (if not the most important) supporting factor in the development of science and technology, we will review the current economic crisis [8,9] (as a particular example, in the UK) and its effects on research funding due to worldwide budget cuts by major government funders of research. The sharia economic system that can be an alternative towards strong and stable financial supports will also be discussed.

Finally, we will review science and technology policy in several countries, including UK and Indonesia, and the current national research management worldwide. Research management under the application of sharia economics will be posed as open questions.

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