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Nanotechnology Catch-up Policies in Iran

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This paper analyzes Iran's catch-up policies in nanotechnology development, using a qualitative approach. For this purpose, we investigated national strategic plans and the annual reports on nanotechnology development in Iran since 2005. We also carried out in-depth interviews with the managers and experts at Iran Nanotechnology Innovation Council (INIC) and the founders of some of the nanotechnology enterprises. The study shows that Iran has accomplished the successful implementation of a ten-year national nanotechnology development plan and is now running its second ten-year program. Supporting the academic researchers in these programs has accelerated the scientific catch-up process of the country. As a result, Iran was rocketed from the 58th place in 2000 to the world's 4th rank in publishing nano-articles in 2018.

The government's nanotechnology promotion programs have also facilitated the technological catch-up of the domestic nanotechnology firms so that about 205 Iranian nanotechnology-based small enterprises are producing more than 500 nano-products. The market of these products was growing at a compound annual growth rate (CAGR) of 104% from 2014 to 2018.

Most of the policy instruments to support the nanotechnology firms, including pre-commercial procurement, support for product promotion and supports for receiving certificates are classified as supply-side oriented policies. However, some demand-side efforts have been added to the government policy toolkit. Technology brokerage programs and subsidizing academic purchases are some examples.

This research shows that Iran, as a latecomer country, has successfully passed the stage of the scientific catch-up of nanotechnology and is going to be an active actor in nanotechnology commercialization. The technological catch-up model of the nanotechnology firms and enterprises in Iran is different from the conventional models advanced in the literature. The findings of the research are useful for other latecomers that would like to benefit from the technological windows of opportunities at the nanoscale to enhance the competitiveness of their industries.

Keywords: Nanotechnology, Commercialization, Catch-up, Iran

Biography:

Jahanyar Bamdad Soofi is an Associate professor in Allameh Tabataba'i University of Tehran-Iran, which is one of the best universities in human sciences. He had accomplished his PhD thesis in Université des Lille (institute d' Administration des Entreprise) in France in 1992.