

# Innovation systems in Malaysia: a perspective of university—industry R&D collaboration

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**Abstract** Collaborative research and development (R&D) activities between public universities and industry are of importance for the sustainable development of the innovation ecosystem. However, policymakers especially in developing countries show little knowledge on the issues. In this paper, we analyse the level of university–industry collaboration in Malaysia. We further examine the fundamental conditions that hinder university–industry collaboration despite the government’s initiatives to improve such linkages. We show that the low collaboration is a result of an R&D gap between the entities. While the universities engage in basic and fundamental R&D, the private sectors involved in incremental innovation that requires less R&D investments. The different nature of the industries’ R&D requires closer cooperation between firms namely buyers, suppliers and technical service providers and not the universities. Among others, the lack of an intermediary role, absorptive capacity and collaborative initiative by the industry also contribute to the problem. The study suggests that the collaborative activities can benefit both if deliberate and effective efforts on reducing

the R&D mismatch are made between the universities and industry. Likewise, proper institutional arrangements in coordinating these activities are required. This result seems to reflect the nature of many developing countries’ national innovation systems, and therefore, lessons from Malaysia may serve as a good case study.

**Keywords** University–industry collaboration · Research and development · Policy implication · Commercialization

## 1 Introduction

In sustaining the national innovation systems, the agents in particular the universities and industry play an important role. One mechanism that drives the success of any research outcome is the collaborative work undertaken by the university and industry. Industrial linkages are a valuable source of resource especially for funding as well as knowledge on technology developments for the universities, vice versa, university linkages are important for innovative activities of the firms. Besides, it is found that the collaborative research programmes significantly influence national innovation systems especially in creating and strengthening networks which are essential for breeding innovation clusters (Liyanage 1995). There have been numerous studies highlighting the importance of universities as the providers of significant opportunities for developing new knowledge. The changing role of universities beyond teaching and research to commercialisation contributes significantly to innovation (Etzkowitz 1998; Leydesdorff and Etzkowitz 1996; Laredo and Mustar 2001). These complementary assets are important for the success of commercialisation and innovation. In addition, industrial linkages also create the so-called combinative

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