

University Incubation System for Research Commercialisation: The Case of Taiwan and Malaysia

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This article examines the performance of university research commercialisation in Taiwan and Malaysia and specifically discusses the role of incubation intermediaries. Through case study and patent analysis, this article draws lessons from Taiwan and further discusses the mechanisms in place for the successful commercialisation of university research. Lessons from the case offer insights for Malaysia on how university incubation intermediaries can be reorganised to promote better commercialisation outcomes. The Taiwanese experience illustrates that in the right institutional settings—and particularly with the presence of innovative science and technology parks—university incubators tend to promote favourable commercialisation outcomes. More importantly, the ability of university incubators to source for external knowledge and risk capital support positions them to be more effective as intermediaries. Other key success factors include establishing an adequate intellectual property management system and having adequate human resources equipped with intellectual property knowledge. This article further deliberates policy implications.

Keywords: National innovation systems, innovation intermediaries, entrepreneurial university, university incubator, university start-ups

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Introduction

University inventions have higher risk for potential investors due to their uncertain commercial value. Instead of venturing directly into established markets, they are better suited for the concept of new start-up firms (Swamidass, 2013). These start-up firms require a wide range of support systems to aid their survival. As such, the university incubation (UI) system is designed for, and adopted by, most entrepreneurial universities as a vehicle to provide start-up firms with a variety of physical facilities, resources and services to help them increase their survival rate. From a policy perspective, understanding of the concept of incubator heterogeneity, which acknowledges the specific features of incubators in order to assess performance (see Barbero et al., 2012), would lead to an improved incubator policy response by the government.

This article aims to assess Malaysia's UI system as well as the challenges that Malaysia faces. It also studies Taiwan's keys to success that can serve as lessons to further strengthen the competencies of Malaysia's UI system. This article provides insights into aligning the policies and internal structures of universities through the concept of innovation intermediaries. In the realm of innovation research, this article addresses several appeals to examine the effect of heterogeneity in incubator settings (Barbero et al., 2012) and to clarify the effects of crucial drivers and barriers in the process of university technology transfer (Hsu et al., 2015). We extend existing work on the UI system, which revealed the motivation and obstacles encountered by incubatees in building effective networks from the perspective of communication (Cooper, Hamel, & Connaughton, 2012) by integrating the intermediary functions (Howells, 2006) of UI.

This article is further structured as follows: the second section critically discusses the literature on UI as a concept and as an innovation intermediary, while the third section presents the research methodology and framework. The fourth section discusses the main findings of the study in three parts, that is, policy context, patent analysis on research commercialisation and the case study of National Chiao Tung University (NCTU)'s incubator system. The final section discusses the main lessons applicable for Malaysia, issues and challenges and key policy implications.

University Incubation System: Concepts and Intermediary Role

UI provides a nurturing ecosystem for the development of university inventions through a combination of university-related inputs and other typical incubator services—for example, by setting up university start-ups and carrying out licencing activities (Mian, 1996). UI systems adopt an entrepreneurial role in developing and disseminating scientific and technological knowledge (Grimaldi & Grandi, 2005) and provide greater connectivity and legitimacy with key industries and community stakeholders (Lasrado et al., 2016).

Within the typology of incubators, UI is considered to be somewhere in between the public and private sectors. They receive public funding, but also have access to