

國立聯合大學  
經營管理學系碩士班

碩士論文

區域創新系統知識作用調查：  
以新竹科學園區及週邊地域為例  
**An Investigation on the Interactions of Knowledge  
Subsystems in Regional Innovation Systems:  
The Case in Hsinchu Science Park and Adjacent area**

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## 摘要

伴隨著區域經濟的發展，區域競爭力在不同方面中被廣泛的討論。其中區域創新系統運作扮演重要的角色，區域產業廠商透過與當地的大學與研究機構的互動，獲得所需要的創新知識與人才，強化其創新能力，亦透過知識外溢效果，提升整體產業創新競爭優勢。為了檢驗區域創新系統內部知識創造子系統與知識應用子系統的互動是否能提升區域產業廠商創新績效，本研究以新竹科學園區及鄰近週邊區域為例，觀察 2007-2017 年其區域創新系統內部互動運作。收集中華民國專利資料，作為大學、公共研究機構、廠商的技術創新活動的代理變數，再依照區域創新系統的作用機制，衡量知識與人才移轉對廠商的作用。研究結果顯示區域知識作用無論是知識或是人才移轉對相對於產業廠商對非區域合作在後續創新產出與企業內部知識擴散具有正向顯著影響。其中，在區域內的大學與產業廠商的知識移轉對於後續創新績效效果最佳，人才移轉對區域內產業廠商的知識作用並沒有像是研發合作效果的好。整體而言，本研究確認區域創新系統內部產業廠商與區域內大學與研究機構進行互動，有助於廠商創新產出與吸收新知識。

**關鍵詞：**區域創新系統、知識移轉、人才移轉、大學、研究機構

## Abstract

With the development of the regional economy, the functioning of regional innovation systems (RIS) plays an imperative role. By interacting with local universities and research institutions, regional firms can access the innovative knowledge and talent they need to strengthen their innovation capabilities. The clustering in the region can inspire a knowledge spillover to enhance the competitive advantage of innovation in regional industries. The empirical investigation of whether the interaction between the subsystems within the RIS could improve firms' innovation performance has become an important research question. This study takes Hsinchu Science Park and its adjacent areas as examples and observes their interactions from 2007 to 2017. We collect Taiwan patent data as a proxy variable for technological innovation of universities, research institutions, and firms and then measure the effect of knowledge and talent transfer on firms following the mechanism of RIS. The results show that the impact of knowledge migration within the region, whether knowledge or talent transfer, significantly positively impacts the subsequent innovation performance and internal knowledge diffusion compared to non-regional collaboration. Furthermore, knowledge transfer between universities and industrial firms has a better effect on the next innovation performance, while talent transfer is not as practical as that of R&D collaboration. Overall, this study confirms that the interaction of industrial firms with regional universities and research institutions promotes innovation and new knowledge absorption.

**Keywords: Regional innovation system, Knowledge transfer, Talent transfer, Universities, Research institutions**