

政府資助的產業創新活動： 以工研院科專計畫為例

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本文以 1991-2001 年期間工研院執行的 372 個年度科專計畫為研究對象，蒐集其專利資料並輔以問卷，運用計量方法來探討其研發行為。本文的主要實證結果為：(1)以國內專利數為被解釋變數的模型所得的 R&D 支出彈性值為 0.354。然而若以美國專利數為被解釋變數的模型所得的 R&D 支出彈性值會提高為 0.555，此與 Hausman, Hall and Griliches (1984) 的研究所得之 0.49 相當接近。(2)工研院科專計畫的專利品質呈逐年上升趨勢，是一可喜現象。(3)經過品質調整的研發人力對研發產出有正向的影響。而科專計畫執行年期越長者，其研發成效越顯著，其中尤以 11~12 年者為最。電子類科專計畫之技轉案例屬於製程相關技術之比重增加時，對專利表現有正向影響；然而化工材料類和機械自動化類科專計畫則剛好相反；(4)參與計畫廠商規模和區位對計畫執行成效的影響端視產業別而定。

關鍵字：專利數，調整品質後專利數，工研院，科專計畫

The Evaluation of Public Science & Technology Projects in Taiwan

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ABSTRACT

This paper evaluates the R&D production behaviors of 372 public science & technology projects conducted by ITRI during 1991–2001 using an econometric model. Our major findings are: (1) On average, the elasticity of R & D expenditures to domestic patents is 0.354, while it is 0.555 for US-granted patents, which is close to the results of Hausman, Hall and Griliches (1984); (2) Our evidence shows that the patent quality of ITRI S & T projects improved over time; (3) The effects of quality-adjusted R & D personnel and project length on patents are positive; (4) The influence of the percentage of process innovation, size and location of participating firms on patent performance varied among different fields' S & T projects.

Key Words: quality-adjusted patent, ITRI, S & T projects