Impacts of Research Team Diversity and Top Management on Research Commercialization of a Public Research Institute in Thailand

Warangkana Punyakornwong, National Graduate Institute for Policy Studies

Public research institutes (PRIs) are facing demands both from governments and society to enhance their research performance, especially in terms of commercialization. As technology is becoming more complex and scientific disciplines are overlapping, a cross-functional teams (CFTs) approach is considered to be one method of innovation management in PRIs to increase research commercialization. Nonetheless, previous studies on CFTs focusing on the public sector are limited. Even though some PRIs have implemented CFTs, they have not objectively evaluated their impacts. As a result, this study aims to investigate the influence of team diversity on CFTs to enhance research commercialization in PRIs.

This study analyzes the team diversity of research and development (R&D) projects in different technological contexts: information and communications technology (ICT), biotechnology, materials technology and nanotechnology, and investigates how top management supports CFTs to enhance research commercialization. After analyzing 163 R&D projects of the National Science and Technology Development Agency (NSTDA), the largest public research institute (PRI) in Thailand by using the Poisson regression method, it has been found that the high diversity of the functions/departments, high diversity of educational fields, team size (as a control variable) and the timing of a project's completion (as a control variable) have had an influence on the number of license agreements. At the same time, the case studies confirm the regression results and cross-tabulation analysis in the four technological fields.

The results of this study have therefore contributed to the CFTs approach. The key findings prove that PRIs need diversified CFTs. This study explains the impacts of the technological fields, industrial sectors, top management and the middle level management, and different technology readiness levels (TRLs) on CFTs and research commercialization in PRIs. Finally, it proposes policy recommendations for the research management of PRIs.