

Exploring the Evolutionary Paths and Knowledge Networks in University-Industry Collaboration: Patent Citation Perspective

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ABSTRACT

In recent years, the number of studies pertaining to university-industry collaboration (UIC) has increased exponentially apace with the increasing attention attached to UIC issues and the development of UIC. However, the majority of previous UIC studies pertaining focus on investigating the motivations of UIC, types of collaboration, and UIC performance, and studies that highlight the focal technology fields, technology development trends, and technology network distribution of UIC remain scarce. Moreover, previous studies seldom mention the position and ranking of countries in technology networks. The present study employed a two-mode network analysis (countries and technology fields) method to highlight the pivotal role of various countries in technology networks. Finally, the dynamic analysis method was employed to analyze data in different periods to determine technology development trends. Findings revealed discrepancies between the focus of technologies over time. The key technologies in the more recent UIC technology network were largely in the fields of measurement and chemistry, which are characterized as basic sciences with cross-disciplinary traits. In addition, the development of these technology reflects the recent efforts of various countries promoting emerging technology fields. Findings also indicated that Japan and the United States served crucial roles in UIC technology networks.

Kata Kunci: university-industry collaboration, patent network, network analysis, key technology flow