

Innovation and collaboration patterns between research establishments*

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Abstract

This study empirically investigates the determinants of the productivity of knowledge creation by collaboration. By using the Japanese patent database, we extracted establishment-level patent co-invention information, and found the following results. First, we find an inverse U-shaped pattern in the relationship between the similarity of knowledge stocks and the quality of patents. That is, moderate diversity in knowledge stocks between establishments rather than extreme similarity or extreme diversity is important for knowledge creation. Second, focusing on the differences in technology class, we find inverse U-shaped pattern except in lowest technologies, and the peak of the inverse U-shape is larger in the higher technologies. This implies that the common knowledge between establishments is important in the higher technologies. Third, we find that the physical distance between collaborating establishments has a negative effect on the quality of patents.

Keywords: Diversity; Knowledge creation

JEL codes: O31; R11; D23

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