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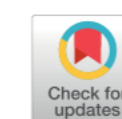
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Does combining different types of collaboration always benefit firms? Collaboration, complementarity and product innovation in Norway

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ABSTRACT

Product innovation is widely thought to benefit from collaboration with both scientific and supply-chain partners. The combination of exploration and exploitation capacity, and of scientific and experience-based knowledge, are expected to yield multiplicative effects. However, the assumption that scientific and supply-chain collaboration are complementary and reinforce firm-level innovation has not been examined empirically. This paper tests this assumption on an unbalanced panel sample of 8337 firm observations in Norway, covering the period 2006–2010. The results of the econometric analysis go against the orthodoxy. They show that Norwegian firms do not benefit from doing “more of all” on their road to innovation. While individually both scientific and supply-chain collaboration improve the chances of firm-level innovation, there is a significant negative interaction between them. This implies that scientific and supply-chain collaboration, in contrast to what has been often highlighted, are substitutes rather than complements. The results are robust to the introduction of different controls and hold for all tested innovation outcomes: product innovation, new-to-market product innovation, and share of turnover from new products.

1. Introduction

Networking and collaborating with external agents are widely seen as essential factors for innovation (e.g. [Powell et al., 1996](#); [Chesbrough, 2003](#)). Knowledge and information are distributed across a wide range of different actors in the economy and new knowledge is constantly

Innovation research focusing on collaboration has frequently argued for combining interactions and collaborations with suppliers and customers, on the one hand, and with universities and other research organisations, on the other, as the right mix to foster firm-level innovation. Supply-chain and scientific partners are considered to bring different types of knowledge to the firm. These different knowledge