

# Internal, Collaborative, and Regional Knowledge Sources of Product Innovation

Policy brief DFID/Tilburg University research: *'Enabling Innovation and Productivity Growth in Low Income Countries' (EIP-LIC)*.

<http://www.tilburguniversity.edu/dfid-innovation-and-growth/>

December 2017



Innovation is an indicator for firm performance in economics and management studies, and a firm's capacity to maintain on-going innovation processes is considered a source of sustained competitive advantage. Since innovation often originates from the ability to effectively exchange and combine knowledge, firms need to acquire new knowledge from multiple sources.

Even though knowledge is crucial for all type of firms, the exact type of knowledge that is most useful might differ between larger and smaller firms. Large companies engaged in internationalisation pay particular attention to internal knowledge as a source of innovation. SMEs operating in a local context, on the other hand, need to draw on knowledge networks that tie together a broad set of partners, customers and suppliers to take advantage of innovation resources.

In the framework of a DFID-funded research project entitled *'Enabling Innovation and Productivity Growth in Low Income Countries (EIP-LIC)*', a team of researchers from the National Economics University in Hanoi and Radboud University Nijmegen investigated the impact of different knowledge sources relating to product innovation in Vietnam, using small firm-level data. Specifically, the team analysed the separate impacts of (i) internal knowledge, (ii) collaborative knowledge, and (iii) regional knowledge. The original working paper is entitled *'Made in Vietnam: The Effects of Internal, Collaborative, and Regional Knowledge Sources of Product Innovation in Vietnamese Firms'* (2017) by Thuy Phung, Patrick Vermeulen, Joris Knobens and Dat Tho Tran<sup>1</sup>.

## Research approach and findings

The three types of sources are characterised as follows. Internal knowledge sources might be generated by firms through in-house R&D activities, employee training or managers' experience. Collaborative knowledge could emerge from partnerships between firms and their counterparts, either from inside the supply chain (e.g. competitors, suppliers or customers) or outside the supply chain (e.g. universities or research institutes). Regional knowledge sources might come from other firms in the local area, as knowledge tends to spill over across firms, especially when the distance between them is small.

The analysis reveals that some knowledge sources are more strongly associated with innovation than others. Knowledge sources from internal R&D have a positive influence on product innovation. The stronger a firm's collaborative knowledge gained from inside the supply chain, the higher the likelihood of product innovation (it might be specific to developing countries that firms need to create a network with customers, suppliers

<sup>1</sup> The paper is accessible at the project's website (<http://www.tilburguniversity.edu/dfid-innovation-and-growth/>)

and competitors to enhance product innovation). However, there is no significant relationship between collaboration with universities or research institutes and innovation. One explanation as to why regional knowledge sources are not effective in Vietnam is that national knowledge-producing organisations and State agencies are slow and reluctant to exchange information and knowledge.

### **Policy implications**

The qualitative studies of EIP-LIC show examples of companies that do not have explicit R&D activities, yet having internal R&D capacity strengthens their product innovation. A policy to raise awareness of and facilitate management training and education would encourage the institutionalising of explicit R&D capacity in a company. A more critical implication is the acknowledgement that innovation occurs naturally in a good business climate and most of all through effective interactions in the business system.



It is important to differentiate between the level of technology required by large technologically advanced enterprises and their smaller counterparts that mostly adopt or adapt existing technology. Universities and research institutions have a significant role to play in the transfer of advanced technologies. However, this is not relevant for the smaller firms as the research shows.

More importantly, innovation is fundamentally the task of the private sector and entrepreneurs, and occurs through business horizontal and vertical linkages, spill-over and actors' networks involving subcontracting, interactive learning within supplier and buyer value chains and foreign direct investment. From this perspective, government innovation policy should be broader than simply providing R&D incentives and patent systems, for instance. The business sector should enjoy an institutional environment that provides information, confidence, trust and stability, which will directly and indirectly support entrepreneurs in taking risks and making investment and innovation decisions.

Most Western advanced economies adopt a policy approach based on innovation systems theory, the foundation for most Science, Technology and Innovation (STI) innovation policies. These policies strengthen the network of formal innovation systems institutions, including technology development and research centres, universities and technical education and training, finance and regulatory patent systems. The outcomes of this research indicate that this approach is unlikely to be effective in less advanced economies.

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This policy brief is the product of a research project funded by the British Department for International Development (DFID) entitled 'Enabling Innovation and Productivity Growth in Low Income Countries' (EIP-LIC). The project is implemented by Tilburg University (The Netherlands) and explores SME-level innovation in Low Income Countries (LICs) and factors that contribute to or limit its diffusion. Data collection and research collaborations took place in 10 African and Asian countries (Bangladesh, Ethiopia, Ghana, India, Indonesia, Kenya, Tanzania, South Africa, Uganda and Vietnam). The policy implications of this research are presented in a series of policy briefs, targeted at a broad audience of policy makers within governments, business and development agencies with a view to quantifying research outcomes and promoting evidence-based policy making.