

External Knowledge Sources and the Cost and Benefits of Innovation in Developing Countries

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/>

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The importance of external knowledge sources to firm-level innovation has been for long underlined by economic and management researchers as well as business practitioners. Despite open innovation's increasing prominence in both practice and research, the role of the context in which open innovation in developing countries is conducted is not well investigated. A team of researchers of Radboud University Nijmegen carried out a study on external knowledge sources and highlighted context when considering the relationship between openness and innovative performance. The study is part of the DFID-funded research project entitled *'Enabling Innovation and Productivity Growth in Low Income Countries (EIP-LIC)*' implemented by Tilburg University and Radboud University Nijmegen in The Netherlands. The original working paper of the study is entitled 'External Knowledge Sources and the Cost and Benefits of Innovation in Developing Countries' (2015) by Annelies van Uden, Joris Knobens and Patrick Vermeulen¹. This policy brief summarizes the research methods and outcomes of the study and discusses several policy implications.

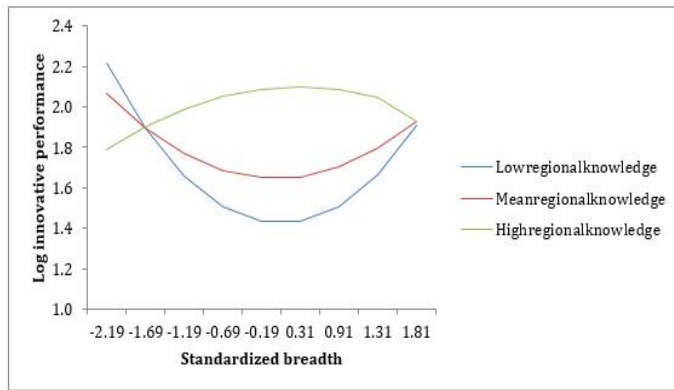
Research findings

Based on an analysis of 683 firms in five developing countries, the team found that that regional knowledge availability influences the success of openness. The study indicates that this relationship is contingent on the context in which the firm is active. In regions with a high knowledge availability the relationship between openness and innovation is similar to the one found in Western countries, which adds to the external validity of this relationship.

The study shows that firms located in regions where regional knowledge availability is lower, are more innovative when they are not using search breadth and only really low levels of search depth, indicating that in some environments it is better for a firm to be closed for innovation. These results contrast most previous research about open innovation, which highlighted the benefits and the positive relationship with innovative performance. It shows that in regions with high knowledge availability, the inverted U-shape found in Western countries is also valid there. However, we also find that in regions with moderate or low knowledge availability the inverted U-shape turns into a U-shaped relationship.

Indicating that in regions with less knowledge available, an open innovation strategy does not have a positive effect on innovation and it can be better to focus on fewer, deeper relationships rather than a very broad engagement with many other actors. The study is important for the open innovation literature by showing that regional knowledge availability strongly influences the relationship between openness and innovation.

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



Search breadth at different levels of regional knowledge availability

Policy implications

External sources provide the firm with new ideas and help achieve innovation. However, innovation policies in LICs can benefit from the study's findings; if external knowledge sources are lacking, openness has a less favourable effect. The study provides evidence that knowledge availability is indeed a regional characteristic that is of significant importance for the value of openness.

Consequently the regional availability of knowledge should be considered in (open) innovation policies. Interestingly, the research results indicate that openness can even be a harmful strategy, which has to be acknowledged by policy makers as well.

The moderation effect of regional knowledge availability results in a negative relationship between external search breadth and innovation. In regions where knowledge availability is lower, being open has more costs than benefits. These findings supports the recent literature that stresses the downsides of openness. This implies that openness should not be used in environments where external knowledge availability is lower. Especially in the context of developing countries, the innovation policies and strategies promoting openness could be much less effective than in developed countries.

This study adds to the generalizability of the relationship between openness and innovation outcomes. The findings indicate that also in non-Western countries this relationship only holds in regions where knowledge availability is high, which is comparable to the Western context. In policy making, the context should be considered explicitly when establishing a relationship between openness and innovation. For governments, the concept of openness is not one to one replicable in a different context and collaboration with other partners could result in lower innovative performance. Promoting the knowledge availability is another policy avenue in pursuing open innovation. Typically, education, information infrastructure and generic economic development policies are prerequisites in a regional context.

Validating the policy implications on the ground, the qualitative studies of EIP-LIC, in particular Kenya and Ghana, confirm that owners and managers in certain areas who were less open enjoyed more benefits in the process of trying and introducing new technology and products. Several company owners learned it the hard way – *“they [competitors] came to tap my ideas. In one event the students from a university in Accra took my idea and design for a machine.”*

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 take place in 10 African and Asian countries (Bangladesh, Ethiopia, Ghana, India, Indonesia, Kenya, Tanzania, South Africa, Uganda and Vietnam). The policy implications of 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.