



POLICY NOTE OF WORKING PAPER 5.16

CULTURAL DIVERSITY, KNOWLEDGE DIVERSITY AND INNOVATION

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OBJECTIVE

The aim of this paper is to explore the impact of cultural diversity on innovation. In doing so, the paper investigates the interaction effects between cultural diversity, knowledge diversity and knowledge regime in an organizational context, where actors interact and exchange knowledge through networks. The underlying premise of the paper is that, the impact of cultural diversity on innovation depends on the similarities in the competencies of the actors as well as the extent of technological opportunities in the industry. Commonality in competencies is important, since it determines the extent to which actors can learn from each other. In addition, the knowledge regime is influential in shaping the technological opportunities that are available in an industrial system. In summary, the paper addresses three questions.

1. How does cultural diversity and knowledge diversity interact with each other as far as they effect innovation?
2. How does this interaction depend on the technological opportunities in the industry?
3. What are the structural characteristics of the networks that form and evolve, depending on the cultural, knowledge attributes of actors, and the industry regime?

SCIENTIFIC METHOS

To address the above questions, an agent based simulation study is performed. In the model, a population of actors forms partnerships through which they learn from each other, and they acquire new competencies. The actors' are different in terms of their attitudes to partnerships, in terms of openness and trust. In other words, their cultural attributes determine their openness to knowledge sharing and networks. The actors are also different in terms of their technical competencies. Networks form and evolve through the interactions, and through which agents learn. Depending on the parameter space defined by the industry, diversity in cultural attributes, and diversity in competencies, the model explores the resulting innovation dynamics. The model also investigates the structural characteristics of the networks that form.

POLICY IMPLICATIONS

The results reveal strong interaction effects between cultural diversity, diversity in competencies and industry regime. The paper highlights that the impact of cultural diversity on innovation depends on the existing technological opportunities, and how the knowledge is distributed in a population of actors. According to the results, no significant effects of cultural diversity on innovation are detected for low and high technological opportunity regimes. On the other hand, in general, both knowledge diversity and cultural diversity tend to reduce knowledge creation in industries characterized by intermediate levels of technological opportunities.

The underlying reason behind this result can be related to the networks of actors. In particular, it is found that, high degrees of cultural and knowledge diversity tends to reduce the extent of partnerships between a variety of agents. According to the results of the simulation analysis, there is also an interaction effect between knowledge diversity and cultural diversity. In particular, the highest knowledge growth, and the highest level of interactions occur when both cultural diversity and knowledge diversity is minimum. This also implies that negative effects of cultural diversity can be offset by promoting cultural homogeneity.

Various policy implications of these results can be underlined. Firstly, since the impact of cultural diversity on innovation largely depends on the context of the industry, it is particularly important to consider the nature of knowledge creation in the specific context under question. By knowledge creation is meant, the extent to which learning happens through solely transfer of knowledge on one hand, and the extent to which new knowledge is created on the other. Where both mechanisms determine learning, cultural diversity has a negative impact on innovation. However, in cases where cultural diversity is a necessity, the negative impacts can be offset by employing people/organizations who have similar competencies. In other words, a policy perspective which takes into account diversity in competencies is relevant to promote innovation, when considering the impacts of cultural diversity.

Networks of actors also play an important role in this context. In this paper, networks are taken as the main mechanisms through which the impact of diversity manifests itself. In general, the extent of interactions between different actors contributes to learning. On the other hand, to the extent that partnerships are repeated between the same people/organizations, learning and new knowledge creation can be limited.