Knowledge networks and makerspaces: proximities and local growth in the Central Europe

Keywords: makerspaces**,** creative ecosystem, central europe, comparative study, DIY movement, proximity

The rationale behind this paper is reflected in the investigation of knowledge flow and the role of proximities through makerspaces. These physical spaces create links between firms, educational institutions and applied research, providing fertile ground for accelerating prototyping and DIY movement. The maker movement has risen from a fringe hobby to a prominent (DIY) lifestyle. In the past, tools have been available only to those working in firms and industry or those willing to pay for their procurement. The maker movement increases access to tools and training, potentially altering the capability of the general public to participate in product development (van Holm, 2017). Hence, these spaces are creating a positive impact on creating a cultural change by encouraging entrepreneurship in the community, support small business growth, and increase workforce retention (Li & Gao*,* 2021*;* Mersand, 2021; Gillespie et al., 2021). Furthermore, it could be argued that links between firms and universities and vice-versa support the knowledge tranfer through the systematic collaboration.

Therefore, the paper focuses on the knowledge flows between stakeholders regarding the local growth. These spaces creative ecosystems of innovation generation with strong knowledge interactions. In the paper, the aim is to study spatial scales of knowledge flows in the selected Central European countries, where makerspaces have seen a more significant increase. It can be argued that the weak linkages between firms, educational institutions and research institutions could be one of the reasons these countries are considered moderate or emerging innovators (EU Innovation Scoreboard). Furthermore, the paper aims to shed some light on dynamics of knowledge networks concerning of both direct and indirect effects of makerspaces on local milieu. The research design is based on empirical qualitative analysis of primary data gathered through semi-structured in-depth interviews with stakeholders in makerspaces. The interviews were designed to describe the role of these platforms that facilitate collaboration. The sample includes makerspaces from the Central Europe with knowledge flows concerning global pipelines and local buzz.

The novelty of our empirical research is reflected in identifying spatial scales to distinguies the role of proximity in knowledge transfer through makerspaces. Regarding challenges, the results provide an overview on what are the knowledge flows illustrated by the case studies. The paper presents policy implications to nurture different knowledge flows in and its role in local development. DIY movement provides the potential for cross-curricular connections, collaboration, creativity, innovation, and learning towards prototyping. Furthermore, the research reflect on the knowledge transmission among the central knowledge partners and their respective networks considering different proximities (Boschma, 2005; Balland et al. 2015) to geographical, social, cognitive, insitutional, organisational. Variety of local growth dimensions through makerspaces and main external stakeholders that shape the operations of these knowledge networks is presented in the conceptual framework. Therefore, the paper provides an overview on dimensions of collaborative spaces-driven local development towards competitiveness of creative ecosystems.

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