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“Spatio-temporal localisation pattern of technological startups – RNN in predicting intra-urban startups’ clusters”

Abstract

The location decisions of the technological startups at the urban level are still not well investigated. The gap in the literature is huge – especially compared to the amount of research regarding location decisions and their effects on more traditional businesses. Taking a sample of startups from the up-and-coming market in Central-East Europe in Warsaw, Poland their spatial organisation across the years will be tracked to investigate whether there is a defined pattern of behaviour and how it evolves in time. It will be also shown how recursive neural networks (RNN) may help in predicting the locations of technological startups’ clusters. It will be shown that the model can be successful even for short spatial panel data. It will be presented how to include the spatial dimension in the model in a computationally-effective way and how this augmentation improves the results, allowing the network to “understand” the spatial relations between neighbouring observations.