

Digital Social Data and Machine Learning: New data sources, methods and indicators for geographical innovation research?

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In recent years, advances in computing power have paved the way for Computational Statistics methods (e.g. Machine Learning, Data Mining, Text Mining) to analyze and extract information from a wealth of new data. Most of them are admittedly a byproduct of digital platforms, where social media plays as a central role. In turn, these data sources appear especially suitable to advance the geographical analysis of innovation.

First, the advent of social media has led to the documentation of a vast range of economic and social activities as Digital Social Data (Poorthuis et al. 2016). Digital Social Data provide new avenues for research on non-technological and user-driven innovations, which elude the standardized classification systems and official statistics typically used in innovation research. These novel data sources are especially suited to create new innovation indicators that are focused on the resonance of innovations with users (Klement & Strambach 2019).

Second, Machine Learning methods (such as Cluster Analysis, Random Forests and Deep Learning) provide new ways to analyze and model large amounts of data relevant to innovation research. They allow *i.a.* to disclose hidden patterns in large data sets and to predict socio-economic activities related to innovation. However, there is not one algorithm, which outperforms all other ones in all tasks. They are to be matched with a specific task, which in turn depends on the available data. Therefore, it is of sound interest to investigate the feasibility of those methods for the goals of innovation research.

Hence, this special session invites contributions using novel data sources and/or machine learning methods that demonstrate and discuss the possibilities they offer for the advancement of geographical innovation research.

References

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