Measuring spatial dispersion: an experimental test on the M-index

by Stefano Usai | Alberto Tidu | Frederick Guy | Crenos e Università di Cagliari | Crenos e Università di Cagliari | Crenos e Università di Cagliari

Abstract ID: 121
Inviato: 27/02/2023
Evento: XXI Workshop Annuale SIEPI
Argomento: 12. Reti di imprese, distretti e cluster tecnologici
Parole chiave: agglomeration; spatial methods; economic geography; distance-based measures; Sardinia

In this paper, we assess the viability of a geographic approximation aimed to reduce the computational intensity necessary to measure spatial agglomeration with Marcon & Puech's (2017) M index. Indeed, despite representing a potentially accurate way of measuring spatial distribution, M has not been sufficiently exploited so far because its computation needs to cross every point (i.e. firms, plants) with each other within the area under analysis. Consequently, practical applications of M have been exclusively experimental and circumscribed to very limited areas or to a handful of sectors.

In order to verify whether a slight geographic approximation is tolerable, we compute both actual M (with no approximation whatsoever) and approximate M for every industry in Sardinia. Our aim is to compare the results obtained when plants are located exactly where they are with those obtained when plants' positions are approximated to the centroid of the municipality where they are located.

If our approximation is positively outweighed by the great accuracy of M in operationalizing detailed geographic and economic information, then such an index could be exploited for assessing agglomeration and dispersion patterns across space and over time, especially when much information is available.