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MEASURING REGIONAL COMPETITIVENESS AT EUROPEAN LEVEL: A TOPSIS APPROACH

Academic paper

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Abstract text:

Regional competitiveness is a complex, dynamic, and multidimensional phenomenon that needs to be measured in a comprehensive way. Regional competitiveness it difficult to analyse, therefore it should be assessed through a comparative approach. In this paper we revisit the EU Regional Competitiveness Index 2019 (RCI) using the Technique for Order Preference by Similarity to Ideal Solution (TOPSIS), a multiple criteria decision making (MCDM) method, by comparing it with three different distance measures: the Manhattan, Euclidean and Mahalanobis distance measures.
The analysis, which consists of a comparative and multi-level approach taken the RCI as the benchmark, carried out throughout three stages: a system of ranking followed up by regional focus along with clustering, leads to several findings. First, the Manhattan distance measure replicates the RCI, exhibiting the latter to be appropriately considered as the benchmark of the analysis and the Manhattan distance measure to bridge between TOPSIS method with the methodology of the RCI. Moreover, the Mahalanobis distance measure presents the greatest dissimilarity from the RCI, unveiling high correlations among RCI pillars. Second, when applying the distance measures, region situated different positions from the ranking in the RCI, showing distance measures to have a high impact on original positions of regions. Third, considering distance measures on the RCI clusters exhibited changes on cluster membership of some regions, which underlines a change in their competitiveness level. Therefore, we observed on one side, that RCI clusters alter their composition of regions with respect to their initial composition, on the other side, that a change of cluster membership means a revision of the competitiveness level for regions. Finally, the comparative analysis of the membership of regions to clusters of competitiveness across rankings sets apart five different categories of regions in Europe: Unaffected regions, Correlation affected regions, Affected regions, Border-line regions and Reclassified regions. The insights support the comparative approach by using TOPSIS method to offer a new perspective on regional competitiveness, which proves useful for policymakers when addressing territorial disparities.

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