

## **Leveraging Affinity Propagation Clustering of OECD Member States: Insights for Romania's Accession Strategy\***

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### **Abstract**

The Organisation for Economic Cooperation and Development (OECD) has been one of the most influential intergovernmental forums throughout the last 60 years, due to its capability to stimulate economic progress and construct a trusted policy recommendation center. Throughout its existence, the Organisation has been limited in terms of members; however, that changed in 2022, when the OECD Council decided to include Romania on the accession candidates list, opening a discussion regarding the socio-economic health of the country. In this context, the current paper proposes a profiling exercise of the existing OECD members, basing our research on the affinity propagation clustering, a powerful machine-learning algorithm, with the potential to identify and highlight affinities between different entities, in a straightforward and easy-to-configure manner. Regarding the dataset, the analysis will be applied to two development axes, society and economy, with an individual distribution of states being generated for each. Afterwards, the validated clusters will be characterised based on the 22 initial indicators and their main points of differentiation. Complementary to the profiling of the already OECD members, our second objective will be to assess whether Romania shows a homogeneous socio-economic performance or stands out as a potential outlier. On this note, the main findings indicate that while Romania still has significant progress to make in order to synchronize with the standards of the Organisation, currently it does not exhibit extreme deviations in performance. Therefore, this paper could be of interest to policy stakeholders, as its insights can be interpreted as a positive indicator in support of Romania's accession process.

**Keywords:** OECD; accession; affinity-propagation; clustering; economy; society.