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THE EFFECTS OF DIGITALIZATION STRATEGIES ON SUSTAINABLE WELL-BEING OF THE ITALIAN PROVINCES: A POSETS APPROACH

Abstract

This research is based on the relationship between digitalization and sustainable development within Italian provinces. The study introduces the concept of "digitainability," which merges digitalization with sustainability, emphasizing how digitalization plays a crucial role in promoting sustainable development. The datasets, on which were conducted the analysis, are taken from ISTAT, in particular from SDG and BEST.

The main analysis conducted are two: cluster analysis and the PoSets analysis. Through the cluster analysis the provinces of Italy were divided into 6 main clusters. The clustering technique is a hierarchical one, in particular Ward's method. The main topic of the study is the Partially Ordered Sets (PoSets) analysis, a methodology that allows for the ranking of Italian provinces based on their digitization level without aggregating indicators into a composite index. This approach helps identify regional disparities and reveals the effectiveness of local digitalization strategies.

The results show that Macerata is the most digitalized province, based on the 9 indicators chosen. The analysis is conducted on the Italian regions, and the results are that Piemonte is the most digitalized region meanwhile Veneto is last. Then, to have a more granulated vision of Italy, the provinces are divided into 5 main zones, Northwest, North-east, Center, South and Islands. The division is based on the NUTS1 zones provided by Eurostat.

North-west: 1st place Torino, last Lodi.

North-east: 1st place Udine, last Forlì-Cesena.

Center: 1st place Lucca, last Massa-Carrara.

South: 1st place Vibo Valentia, last Napoli.

Islands: 1st place Trapani, last Ragusa.

The results highlight significant regional differences: provinces in Northern Italy generally perform better in terms of digitization compared to Southern provinces, due to better access to digital infrastructure and educational resources. Moreover, the study finds that provinces with higher levels of education and internet access are more digitalized compared to others. Ultimately, the thesis provides a framework for policymakers to assess and improve digitalization strategies within their provinces and regions, aiming reduce inequalities among Italian provinces.