

## Regional Comparative Evaluation: Synthetic Regional Development Index (Rdi) For Peru

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### Abstract

Regional disparities and new territorial development metrics reflect the need to have modern regional development assessment instruments, especially for underdeveloped countries; for this reason, in this research, a new generation synthetic regional development index (RDI) has been constructed, which involves the four interdependent components of sustainable development (economic, social, environmental and institutional), and allows a comparative evaluation of regional development in Peru. For this, it has been rigorously followed the Principal Component Analysis (PCA) in the construction of the IDR, the Jenks Natural Breaks method in the regional weighting, the sigma convergence in the disparities regional and the Cronbach's Alpha coefficient on reliability. The results found for the period 2015-2019 show that certain regions (Callao, Ica,

Moquegua, Lima) triple the development of others (Cajamarca, Huancavelica, Puno, Loreto), despite the fact that the latter have large sources of development; one reason is due to the low progress in the institutional dimension. In addition, in hierarchical order, the dimensions that have more contribution to sustainable development are: social (95.20%), environmental (85.98%), economic (84.78%) and institutional (49.42%). The proposal includes a prototype of a web platform that iteratively shows the development of the regions in Peru, using intelligent algorithms, big data, web scraping and geospatial information.

**Keywords:** Disparities; intelligent algorithms; multidimensional; principal component; sustainability.