

Infrastructure and Economic Convergence Between Moroccan Regions: Analysis of β , σ and Convergence Clubs (2015–2023)

Kenza Ouazzani

Ph.D, Candidate in Economics, Ain Chock Faculty of Legal, Economic and Social Sciences, Hassan II University of Casablanca

Abdelatif Komat

Professor, Ain Chock, Faculty of Legal, Economic and Social Sciences, Hassan II University of Casablanca

Abstract:

The objective of this article is to analyze the dynamics of economic convergence among Morocco's twelve regions over the period 2015–2023. The analysis mobilizes a three-dimensional approach combining σ -convergence, absolute and conditional β -convergence, and convergence clubs, built from a balanced panel of 108 observations drawn from HCP regional accounts and sectoral data. A synthetic infrastructure index is constructed through Principal Component Analysis, incorporating access to drinking water, electricity, road network density, public enterprise investment, and regional banking penetration.

The results reveal three stylized facts. σ -convergence is confirmed by the coefficient of variation (–12.4 % over the period, significant at the 1 % level), with a structural break in 2020 whereby the COVID-19 shock initially amplified disparities before triggering accelerated convergence during the recovery phase. β -convergence is robustly established by the fixed-effects panel estimator ($\beta = -0.376$, $p < 0.01$), indicating that less developed regions grow faster. Conditional analysis reveals that the "public investment and drinking water" dimension exerts the most significant pro-convergence effect, while urban network infrastructures are absorbed by regional fixed effects. The Phillips & Sul log-t test rejects global convergence and identifies four statistically validated clubs — high income, upper-middle income, intermediate, and low income — exhibiting distinct and persistent infrastructure profiles.

The analysis of regional heterogeneity confirms the existence of multiple equilibria within Morocco's economic space, with differentiated convergence trajectories depending on initial development levels and infrastructure endowments. These results call for an asymmetric regional policy, prioritizing basic infrastructure reinforcement in low-income clubs, a requalification of investments toward more structurally impactful dimensions in intermediate regions, and particular attention to the effects of cyclical shocks on catch-up dynamics.

Keywords:

β -convergence, convergence clubs, infrastructure, Morocco, regional convergence.