Applying Interval Clustering to Quantile Estimates: Empirical Distributions of Fertilizer Cost Estimates for European Countries

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Abstract:

The decision to adopt one or another of the sustainable land management alternatives should not be based solely on their respective benefits in terms of climate change mitigation but also based on the performances of the productive systems used by farm holdings, assessing their environmental impacts through the cost of specific resources used. This communication uses the symbolic clustering tools in order to analyse the conditional quantile estimates of the fertilizer costs of specific productions in agriculture, as a replacement proxy for internal soil erosion costs. After recalling the conceptual framework of the estimation of agricultural production costs, we present the empirical data model, the quantile regression approach and the symbolic clustering tools used to obtain typologies of European countries on the basis of the conditional quantile distributions of fertilizer cost empirical estimates. The comparative analysis of econometric results for main products between European countries illustrates the relevance of the typologies obtained for international comparisons based on their input specific productivity.

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