# Statistical assessment of the top-down and bottom-up approaches for the construction of regional input-output tables

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Traditionally, regional Input-Output tables are constructed from the national Input- Output matrix; this is known as the "top-down" approach and it is considered as an essential tool for the construction of regional Input-Output matrices.

Furthermore, the approaches that emphasize the importance of the hybrid methods, that recommend the combined use of regional and national data, do not take into account the importance and impact of the location of economic activities and their differentiation in economic interaction on the economic performance of the regions.

Even more, if there is any emphasis to the economic importance of the regions within countries, it is usually associated with administrative political entities: states, municipalities, provinces or counties, regardless of the existence of functional economic regions, which are characterized by how the economic activity is spatially structured and how it behaves functionally, regardless of the political-administrative units.

In the literature related to the construction of regional Input-Output matrixes, some researchers insist on the need for a greater extent of regional information using hybrid methods that combine both regional and national information for the construction of regional Input-Output tables, without taking into account the location and the spatial economic functioning of the economic activity which is manifested through the formation of a spatial economic structure, with different degrees of integration.

Hence in this study, we pretend to make a comparative analysis of the approaches "top-down" and "bottom-up" for the construction of regional Input-Output tables, for the State of Sonora, Mexico as well as their statistical assessment.

Therefore, the methodology consist of three stages: In the first, using the "top -down" approach the regional matrix of Sonora is constructed, using the regional specialization coefficients of Flegg, Flegg, Webber & Elliot (1995, 1996); this takes into account the relative size of both the seller and buyer sectors as well as the regional specialization, in order to estimate the matrix of economic transactions as well as the matrices of the technical and total coefficients.

The second stage is related to the construction of the regional matrix using the "bottom-top" approach, through the identification and delineation of the economic functional sub regions. Afterwards, their spatial dependence is validated through spatial econometrics analysis. Subsequently, we create the matrices of the regional economic transactions, and the technical and global coefficients matrices by economic subregions, adding them together in order to create the table of Sonora Â´s multisubregions

Finally, the last stage has to do with the statistical assessment of the regional Input-Output matrix, which is derived from the national matrix, but also the regional one, which is based on the functional economic approach. It is worth to mention that the main orientation of this analysis is to look for differences between the methods, in order to show how the economic region is modeled by both approaches and to give an immediate picture of possible implications, in terms of their impact on the

regional economy, according to the regionalization method selected.

This study was made with the use of the national Input-Output matrix of 2008 and with the data given by the 2008 census, which had information available by state. The missing information came from estimates using information given by the government and from the use of indices of interaction validated by spatial econometrics.