

Economic interaction, productive chains and formation of manufacturing clusters in the functional economic North Central region of Mexico: a case of regional input-output from the bottom-up approach

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Economic and social reality in Mexico reflects wide inequalities. This situation urge to undertake regional analysis, to account for economic heterogeneity and its spatial components in order to correctly understand and analyze economic phenomena, enabling the development of appropriate policies regarding territorially located problems. Currently, most of the studies that address regional disparities have focused on general macro analysis, with special emphasis on time dimension and favoring the use of federal entities or states, which are administrative spatial units, for their analysis. However, it is required an integral approach that takes into consideration space through a functional economic perspective, highlighting the importance of the spatial structure of economic activity and the economic spatial units to which it gives rise, as a fundamental element to explain regional disparities.

This paper provides a study case on the economic interaction, identification of productive chains and formation of manufacturing clusters in the functional economic North Central Region of Mexico, starting with the construction of a regional input-output matrix from the bottom-up approach as a key methodological element of analysis. Regional accounts and analysis of economic interactions are needed for the construction of regional input-output matrix. To do this, the functional region is presented and the main economic subregions are identified, validating its economic interaction with spatial dependence, measured by Moran and Lisa indexes, then there are constructed economic accounts by subregion, focusing on key sectors. Subsequently, using the built matrix, manufacturing regional interactions will be identified, remarking performance of subregional spatial units. Finally the results will be linked to the identification of productive chains in the region and with the formation of manufacturing clusters, using in this stage, clustering techniques from network theory, for subsequent georeference based on interaction and economic specialization.

Thus, this research aims to identify the formation of manufacturing clusters in the region studied, in use of methods that consider the importance of space as an explanatory element. So, the research question of this paper is the following: What are the major manufacturing clusters in the North Central Region of Mexico and how their interaction occurs spatially through economic functional units?

Data for the construction of the regional matrix will be taken from the economic censuses 2014, as well as information available from statewide surveys and official sources (INEGI). Also, from the regional matrix built, manufacturing productive chains and clusters will be identified, using GIS (Geographic Information System) as tool.

The importance of this work lies in the novelty of the methodology, since for the Mexican case has dominated the construction of regional input-output tables from the top-down approach without considering the dominant regional economic structure and thus the economic heterogeneity that prevails in the country; so this research is a contribution on how the economy of a region works spatially therefore represents a valuable tool for decision making. In addition, addressing the formation of manufacturing clusters from a economic and spatial perspective.