Production Linkages and Network Analysis Approaches: Creative Industries of Scottish Economy

Topic: Input-Output and the Network Theory
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In recent years, the notion of the creative economic sectors has capture the interest of researchers and created an extend literature related, mainly, with the significance of the creative economy as a positive force of economic growth. As a result of their association with the "economy of knowledge" and high R&D investments, creative economy and creative industries (the core of creative economy according to Howkins; 2001) are highly related with the adoption and diffusion of new technology and innovations. The specific role of creative industries generates interest about diffusion's intensity and extent, as it is expressed by the intersectoral linkages of an economy. According to recent data, creative industries represent 11% of GDP in U.S.A, 4.5% in EU-27, 2.5% in China, and almost 5% in Scotland. The aim of this paper is to investigate the importance of creative sectors in the Scottish Economy (following the UK DCMS model to define creative sectors) using two alternative approaches: Input-Output Analysis and (Social) Network Analysis (or Graph Theory). For capturing the complexity of an economy but, also, for emphasizing to the strength of the existing relations, we use two different matrices of intermediate transactions, an extended form including 100 sectors of economic activity and an aggregated form of 11 sectors. Furthermore, it is essential to note that, the investigation of an economic system with alternative approaches, is possible to emerge similarities among the results or/and to emerge the same leader sectors. In this case-study and according to the preliminary results, the creative sector "Architectural and Engineering Services" emerges as significant for both methods, namely, as a sector of high backward and forward linkages from the side of Input-Output Analysis and as a sector of high centrality from the side of Network Analysis.
Key words: Creative Economy, Network Analysis, Input-Output Analysis