EXTENDED ABSTRACT

Title: Examining within-country personal income inequalities

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Abstract: *(minimum1500 words)*

In the mainstream income inequality literature there is a variety of empirical contributions focusing on analysing personal inequality income. From the perspective that a person increases its income because the nation (of which this person belongs) increases the income, different authors have used the average national income as an indicator of inequalities around the world. Nevertheless, the analysis of income inequality within countries can provide relevant information about the hierarchical level where the inequality is operating. For example, in Spain is possible to distinguishes three hierarchical levels: region (with seventeen Autonomous Communities, composed by one or several provinces), province and municipality. However, taking as point of departure the municipality-level mean incomes, and following Akita (2003), the overall inequality can be decomposed into three components: the between-region, between-province, and within-province inequality components.

Growing concerns around the world about the widening economic inequality has stimulated the interest of applied researchers in measuring income inequalities (Darvas, 2019; Solt, 2020). The majority of studies have focused on the interpersonal distribution of income (see, among others, Goerlich and Mas, 2002; Veneri and Murtin, 2019). Some studies have analysed the spatial dimension on the interpersonal distribution of income (for a review, see Cavanaugh and Breau, 2018). Other studies suggest that the economic situation of the environment in which a person resides has an influence on his or her income (see, among others, Glaeser et al., 2009; Paredes et al., 2016). These findings could be of special relevance when addressing personal income inequalities within a regional system, since it moves away from the traditional approach where the spatial dimension of the income inequality is ignored.
In the case of an individual country with a standard three-level hierarchical structure (regions, provinces and municipalities), the resulting analysis associated with the

location of the contribution of the different geographical levels to the overall inequality (Akita, 2003) can improve the formulation of policies to reverse inequality. Indeed, the tendency toward governmental decentralization within countries is generating several levels of authority and responsibility. The existence of different levels of governance appears to be placing greater value on the study of the devolution of power to subnational authorities (Ayres et al., 2018; Barter, 2018). From this perspective, inequality could be seen as something attached to a particular hierarchical level (vertically related inequalities) and the appraisal of any government policy would require the measurement of the part of the overall inequality that is related to every level of governance. These inequality hierarchical ties among regions-provinces-municipalities would be motivated by the existence of vertical interactions (Richardson, 1973). Akita (2003) shows a methodology in order to obtain the vertical decomposition of the overall regional inequality. Nevertheless, the spatial interactions at the same structural level among the three-level hierarchical units (the horizontal relationships proposed by Richardson, 1973) are not contemplated by Akita's decomposition. While the identification of the geographical level where inequalities are operating can be carried out by means the Akita's methodology, to the best of our knowledge, there is not methodology to measure which part of the vertical inequality decomposition within a regional economic system is related to the horizontally related inequalities.

When fighting against inequality, the relevance of this analysis is clear, since different empirical results show that within-country inequality is increasing. This is the case of the European Union (Charron, 2016; Michelangeli, 2021), where the uneven development has stimulated the policy efforts to deal with regional inequalities (Iammarino et al., 2019). Therefore, the idea that policy makers can influence the spatial distribution of the income is prominent in policy and academic debates (Camagni et al., 2020), and the multilevel governance mix is fundamental in the development of regional policies (Matteucci, 2020). Nevertheless, although several studies investigated the spatial distribution of income, the role of the multilevel governments on regional inequalities have remained overlooked. Assessing how multilevel governments can influence on regional inequalities is crucial for the optimal design of policy recommendations. Policy makers's decisions might affects the spatial distribution of the income, influencing inequality, but the existence of different levels of authority (multilevel governance) opens up the possibility that economic inequalities are associated with how power should be distributed and/or shared among these multilevel types of governance. Thus, different empirical works have analysed the relationships between decentralisation and regional disparities. As general result, it seems that decentralisation (Shankar, R., & Shah, A., 2003; Rodríguez-Pose & Gill, 2004) and good government quality (Kyriacou, Muinelo-Gallo, & Roca-Sagalés, 2017) reduce regional inequality.

Although decentralization has important spatial implications in terms of territorial inequality (Rodríguez-Pose and Ezcurra, 2010), it is not possible to find research which would facilitate measures of the part of regional economic inequality that would fall within the competencies attributed to each governmental level. Understanding which should be the contributions of decentralized governments to reverse economic inequality within a regional economic system is important if regional policies are to be effective in reducing existing regional inequalities. In an attempt to further clarify these concerns, the process of identifying the relationships among governmental responsibilities and the contributions of different territorial levels to overall inequality will be undertaken by providing a convergence of the methodologies provided by the Akita (2003) and a group of recent methodologies that provide Bickenbach & Bode

(2008) and Márquez, Lasarte & Lufin (2019). The current study will decompose each of the components derived from Akita's methodological proposal (between-region, between-province, and within-province inequality components) into its corresponding spatial and a-spatial (idiosyncratic) parts. Consequently, the overall inequality will be decomposed into six components: the spatial inequality components (spatial between-region, spatial between-province, and spatial within-province) and the corresponding idiosyncratic components (idiosyncratic between-region, idiosyncratic between-province, and idiosyncratic within-province).

Income inequalities could be affecting a certain municipality, but the determinants of these inequalities might be both related to and derived from other factors in neighbouring locations. This paper evaluates the role of space in the analysis of income inequalities among municipalities in Spain. It emphasizes the need to measure the spatial dimension of inequalities as a way to discover which part of them are inherent to local aspects and which part is related to neighbourhood factors.

Although the decomposition derived of the application of Akita (2003) for the Spanish municipalities can inform about the part of responsibility that corresponds for each of the different governments in Spain, some spatial elements are missing that can be hiding the existence of factors related to the location of the different territorial areas (regions, provinces and municipalities). However, Akita's decomposition seems insufficient for analysing which part of the three components are related to spatial or idiosyncratic (indigenous) factors.

As general results, the spatial between-region and the spatial within-province components are the most important. Thus, responsibility in reducing municipal income inequalities should be assigned to government efforts related to both the inter-regional coordination among neighboring regions and the inter-municipal coordination among neighboring municipalities.

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