19-21 de Octubre 2022 | Granada

INTERNATIONAL CONFERENCE
ON REGIONAL SCIENCE

Challenges, policies and governance of the territories in the post-covid era
Desafíos, políticas y gobernanza de los territorios en la era post-covid
XLVII REUNIÓN DE ESTUDIOS REGIONALES
XIV CONGRESO AACR

EXTENDED ABSTRACT

Title: Regional effects on female labour performance: an analysis of Spanish Labour Market Areas[1]

Authors and e-mail of all: José Manuel Casado Díaz (jmcasado@ua.es); Hipólito Simón (hsimon@ua.es); Raquel Simón Albert (raquel.simon@ua.es); Matías Mayor Fernández (mmayorf@uniovi.es)

Department: Economía aplicada

University: Universidad de Alicante; Universidad de Oviedo

Subject area: *Mercado de trabajo y territorio.*

Abstract: *(minimum 1500 words)*

The lack of adequate population regeneration in advanced countries has resulted in a major demographic problem that directly affects the welfare state and living standards. In response to this, the main national and international institutions have implemented countless measures to stimulate economic growth. These include increasing female participation and employment rates, as improving the employability of women leads to a systematic improvement in welfare and greater resilience to external shocks and fluctuations. However, the high territorial variability observed in female employment and participation rates at the regional level complicates the problem and highlights the lack of economic and social cohesion of regions.

The existence of these significant territorial differences emphasises the need to analyse the territorial factors associated with higher/lower female participation and employment rates. In this sense, previous analyses point to the existence of certain socio-economic

and territorial characteristics that tend to differ from one region to another, as well as the presence of significant spatial relationships when considering certain territorial units. In view of this, it seems relevant to consider a territorial area that is coherent with the object of study, as certain territorial units of an administrative nature leave out important factors such as the regional mobility of workers and prevent a good measurement of the phenomenon.

Given the worst labour indicators and the high territorial divergence observed in Spain, this study proposes to analyse the effect of the characteristics of the Labour Market Area of residence on the participation and employment rates of Spanish women using LMAs as a territorial unit of measurement. These markets, delimited through individual commuting flows, constitute autonomous areas where labour supply and demand interact and allow us to reduce the possible existing spatial relationships. Likewise, the use of LMAs allows the ad hoc recoding of the microdata from the 2011 *Population and Housing Census*. Thanks to it, it is possible to know the Labour Market Area of residence of each of the individuals in the sample and to calculate, for the first time for Spain, average variables of the behaviours recoded in the census microdata for each of the LMAs. This type of variable will reflect the average characteristics of each of the markets and will make it possible to study the phenomenon in greater territorial detail.

The study is carried out in two phases. On the one hand, the distribution of both rates in space is observed to detect possible spatial relationships between them derived from the presence of spatial autocorrelation. On the other hand, the regional aspects that favour or hinder the good female labour performance are identified thanks to the use of spatial econometric methods. These methods make it possible to determine not only the influence of market characteristics on female participation and employment rates, but also the effect of the characteristics of neighbouring regions.

As regards the first part of the analysis, in order to detect patterns of autocorrelation between markets, several tests of global and local spatial dependence have been considered. The evidence obtained shows that there are notable territorial differences in the distribution of female participation and employment rates. This considerable spatial variation leads to the emergence of clusters of regions with high/low values of the variable, thus confirming a pattern of spatial autocorrelation in both rates.

To properly deal with the presence of spatial autocorrelation, the second part of the analysis considers several econometric models that include the spatial lag of the

endogenous variable, of the exogenous variables and/or of the error term. Likewise, following the recommendations of different organisations, a distance matrix of 50 kilometres is taken as the neighbourhood criterion, a distance that allows daily commuting without incurring costs that are difficult to assume.

After estimating the models considered, the evidence obtained shows that female participation rates follow a spatial autoregressive process in the residuals, with the SEM model providing the best fit. This local spatial process considers that female participation rates in a given market are affected, in addition to the market's own characteristics, by the disturbance term of neighbouring regions. However, due to its residual nature, it is not possible to identify the exact origin of this spatial pattern, as it could derive both from the economic/regulatory situation influenced by belonging to the same Autonomous Community, as well as from social/cultural factors shared by the closest markets. On the other hand, regarding the explanatory capacity of the regional characteristics considered, the importance of the sectoral composition of the market stands out, with the industry and construction sectors being the ones that hinder female labour market insertion. On the contrary, it is evident that those markets characterised by a higher proportion of women with higher levels of education have higher participation rates, a result that is in line with the better job prospects associated with higher levels of education.

The employment rate, on the other hand, presents a less clear spatial pattern, so that the selection of the best-fit model, SDEM in this case, has been derived from the underlying theoretical specifications and the high degree of self-containment that characterises LMAs. In this sense, employment rates are characterised by a process of local spatial dependence, being influenced not only by the characteristics of the market itself but also by the characteristics and shocks derived from neighbouring regions. Thus, as in the case of female participation, there are certain relationships of a broader nature that derive from a greater similarity between the closest markets in economic or legislative terms, among others.

Considering the effect of region-specific characteristics, the importance of the discouraged worker effect on women is noteworthy, as higher male unemployment in a given LMA is found to discourage female employment. Also, a higher proportion of women aged 40-50 in an LMA is associated with lower female employment rates, a result that could be related to the possible lack of job opportunities faced by some

women after leaving the market due to childbearing and/or care-related issues. Alternatively, a higher proportion of highly educated women, a higher percentage of women employed in the service sector, or a higher income level are characteristics associated with higher employment rates. Among the regional characteristics of the neighbouring markets that influence the employment rates of a specific LMA, the higher proportion of women with higher education, the higher number of people employed in services and the higher level of income stand out in a positive sense, while the higher proportion of women between 40 and 50 years has a negative effect. These characteristics, also observed as relevant in their own sphere, highlight the existence of an imitation effect between markets. A good employment situation of women in a given LMA could encourage women in neighbouring regions to participate more actively in the labour market.

Given the configuration of Spanish LMAs, the metropolitan region of Madrid, which constitutes a single LMA, is isolated when a distance of 50 kilometres is used as a criterion to design the neighbourhood matrix. Therefore, to check the possible diffusion effect of a market associated with a province as economically influential as Madrid, the previous analysis is extended by considering a distance matrix of 67 kilometres (a distance that allows Madrid to have a neighbour). The analysis confirms the presence of a pattern of local spatial autocorrelation in the distribution of the female participation rate, which is influenced by the disturbance term of the neighbouring regions. Among the characteristics that encourage female labour participation are the higher proportion of women with higher education and the longer average commuting time, factors associated with a more active job search. These results are in line with those obtained in the previous analysis and highlight the presence of a broader effect common to the closest markets derived from greater economic, legislative or social similarity.

The extension of the neighbourhood criterion, however, modifies the conclusions drawn from the significance tests and the significance measures used in the case of the employment rate. The spatial pattern becomes localised in the endogenous variable, so that the female employment rate is influenced, in addition to the characteristics of the LMA itself, by the employment rate and the characteristics of the neighbouring regions. This spatial pattern is characterised by a transmission of spatial relations from one neighbour to another, generating a chain effect between markets. However, despite this change in the spatial pattern, the variables that most influence female employment rates are essentially the same. The importance of sectoral composition and the higher

4

employability derived from a higher level of education in the positive sense, and the greater presence of women between 40 and 50 years in the negative sense, stand out, both in their own LMA characteristics and in those of neighbouring markets. However, the behaviour of a region such as Madrid, characterised by its economic and labour importance, prevails over neighbouring markets and hides other less intense relationships, generating a greater spatial dependence between markets. It should also be noted that, considering a matrix of 67 kilometres, the relationships between smaller markets have been disproportionately increased, thus generating possible fictitious spatial relationships.

In summary, the evidence obtained shows the importance of using appropriate territorial units in the analysis of labour phenomena. Taking into account large units such as the provinces in Spain can lead to overestimating the spatial phenomenon observed, leading to the identification of fictitious dependencies between regions. Considering some territorial units or others has a direct influence on the compositional characteristics of neighbouring regions and their evolution, which can generate several spillover effects that directly affect the participation and employment rates of a specific LMA.

The results obtained have important implications for policymaking. On the one hand, they show the relevance of adopting an adequate territorial approach that allows for the consideration of geographical discrepancies in the implementation of employment policies. Considering that markets are not geographically isolated but that there are spatial relationships between them, policy decisions taken in a specific area can have a significant influence on neighbouring regions. Thus, a particular labour policy taken in a territorial unit that does not adequately reflect the interrelationships between supply and demand can be detrimental to neighbouring regions in the immediate vicinity. Thus, in the process of adopting labour policies, it is necessary to take into account the extent of this diffusion phenomenon in order to understand the impact and needs of each of the areas analysed.

On the other hand, the importance of territorial characteristics on the performance of women in the labour market is evident, as certain factors in the composition of the Labour Market Area of residence or of the nearest markets favour or hinder female participation and employment rates. In this sense and considering the relevance of the sectoral composition of the LMA and its neighbours, providing greater accessibility for women to productive sectors such as industry or construction would significantly

improve their employment performance and reduce their enormous dependence on the service sector. Another important factor is educational attainment. Providing incentives for women to attain a higher level of education as well as offering job opportunities that are adapted to it leads to systematic improvements in women's employment situation. Finally, noting the negative effect of the higher proportion of women in the 40-50 age group on participation and employment rates, the lack of available resources and services that allow for a better work-family balance becomes evident. The implementation of family support measures would facilitate reconciliation and prevent the possible exit of certain women from the labour market. It should be noted, however, that some regulatory aspects are taken at the level of the Autonomous Community to which they belong, which is why it is essential to know the labour context of each of the LMAs that make up the Autonomous Community.