# Evaluating Urban Regeneration Policies. Methodological Proposal to Delimitate Experimental and Equivalent Urban Areas

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## INTRODUCTION

The impact evaluation of urban regeneration policies involves analysing whether the project developed in the areas that have been subject to intervention has led to an improvement in the quality of life. A necessary step for this evaluation is to delimit the territory of the intervened area, but also other similar ones with which it can be compared.

This paper proposes a methodological proposal for the delimitation of territorial areas that are the subject of intervention through urban regeneration programs, as a previous step for the analysis of the effects they have on the territory. Three programs are considered developed in Andalusia: "Áreas de Rehabilitación de Barrios" (ARB), URBAN program, and "Zonas con Necesidades de Transformación Social" (ZNTS).

All the programs suppose the delimitation of a territorial area in which a project is developed. It can be assumed that the development of an urban regeneration process will result in beneficial effects in the territory.

What would have happened if the regeneration project had not been carried out in that territorial area? The comparison of the area with itself before and after the intervention accounts for the change, but does not allow adequate response to that issue. To do this it would be necessary to compare the changes in another similar area at the time before or at the beginning of the

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intervention. It would be expected that the effects of the latter would be shown because the patterns of change were different between the area under intervention and the one which, being similar, has not been the subject of intervention.

The two types of defined areas will be called hereinafter 'experimental area', the one in which a project is executed, and 'equivalent area', that which is similar in the first but where no project is executed. It is presented the methodology used to delimit the equivalent areas for the projects carried out in the Andalusian cities of more than 100.000 inhabitants, in particular: Algeciras, Almería, Cádiz, Córdoba, Dos Hermanas, Granada, Huelva, Jaén, Jerez de la Frontera, Malaga and Sevilla.

**METHODOLOGY**

Urban regeneration programs and projects aim to improve the quality of life of the territories in which they operate. The evaluation of its impact goes to compare whether the quality of life has changes between the time before and after the project was executed. One of the ways to ensure that the change is due to the project is to find evidence about what happens in other similar areas where projects have not been developed.

One of the strategies would be 'the selection of similar pairs', that is, to choose an area that is as similar as possible to the one where the project has been developed at a time before the beginning of the latter; That is, an 'experimental area' and another that is 'equivalent'. If comparing the change between that previous time and a later time there are differences could be attributed that difference to the fact of having developed the project in the experimental areas.

It is critical how pairs are selected to ensure that the starting conditions between them are similar. Therefore, we must give answers to two questions: How many peers are analysed, regarding what are similar? In this case the limitation is the number of projects analysed, a total of 81. With regard to the second question, it is important to establish the starting conditions which are relevant to the projects.

Then, what do we mean by experimental and equivalent areas? An 'experimental area' is an urban area in which the application of a project of action of some of the programs that are analysed (ARB, urban or ZNTS) takes place.

An 'equivalent area' would be an urban area in which no project of urban regeneration programs is developed and has similar characteristics to an experimental area of the same city at a time prior to the start of the project.

To delimit the experimental areas, it has been based on the information provided by the institutions that develop the three programs, adjusting it to the limits of the census sections for the year 2001, and to the delimitation of neighbourhoods.

The following criteria have been used to select the equivalent areas:

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Criterion 1: Lack of action of urban regeneration programs. The equivalent area must not have been the subject of any intervention by the programs analysed.

Criterion 2: Socio-economic similarity. The equivalent area will be as similar as possible to the area of action according to its socioeconomic characteristics. The similarity is set as follows:

1º According to the Indicator of Urban Municipal Inequality (IDUM) for 2001, collected in the "Atlas of Urban Vulnerability in Spain". This indicator relates a series of variables at the level of the Census section (population unemployed, without studies, and housing without bathroom or toilet) compared to the average of the municipality.

2º Classification of IDUM values. The possible equivalent areas must belong to the same quintile as the experimental area.

Criterion 3: Demographic. The equivalent area will have to have a population within a margin of ± 50% of the number of inhabitants of the experimental area, and if not found, the margin is extended to ± 66% of the population.

Criterion 4: Location or spatial location in the city: centre-periphery. The equivalent area must belong to the same typology as the experimental area in terms of its location (historical centre or suburb).

Criterion 5: Relational localization: Distance or vicinity. In order for an area to be considered equivalent, this area will not be able to be adjacent to the experimental area, thus avoiding the possibility of spatial diffusion phenomena.

Criterion 6: Urban morphology. For the identification of the equivalent areas has been considered the formal aspect of the neighbourhoods, taking into account their location, urban situation, settlement, building, and land uses.

The expression for obtaining the equivalent area would be as follows:

Equivalent = A. Without action + similarity (inequality IDUM = quintile) + population (± 50-66%) + situation I (centre vs centre/periphery vs periphery) + situation II (Distance > 0 meters) + Urban morphology

**RESULTS AND VALIDATION: EXPERIMENTAL AND EQUIVALENT AREAS OBTAINED**

The application of the criteria has resulted in the possibility of choosing between different equivalent areas for each project. In this case, the one that was most suited to the delimited criteria has been selected. However, in some cases ad-hoc criteria have had to be applied. These criteria have been:

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1. Demographic size of the experimental area: There are cases where an equivalent area cannot be demarcated due to the demographic size of the experimental area. For these cases two solutions have been given:

1.1. Reduction of the experimental area to one of the districts and/or sections included in attention to the intensity of the intervention.
1.2. Aggregation of equivalent areas: in cases where equivalent areas appear but without meeting the demographic criterion, neighbourhoods have been grouped that met the other criteria.

2. Scope of the territorial coverage of the experimental areas: it is given in the historical centres that in its entirety are delimited as area in which it is intervened. In these cases, it has been decided to define experimental areas for each project, attending the neighbourhood in which the performance is most often produced, choosing equivalent areas in the historical centre itself.

3. Overlap among projects of different programs: in some cases different projects are carried out in the same territorial area, and, therefore, the same equivalent area has been defined for each project.

4. Same area equivalent for different experimental areas. This is because of the equivalents that were obtained in the first approximation only one area was similar, from a point of view of urban morphology, to the experimental zones defined in the projects.

As a whole, the application of the general criteria, together with the ad-hoc criteria, have resulted in the selection of the equivalent areas for each of the cities and urban regeneration projects. But are experimental and equivalent areas similar? It is a necessary condition for the subsequent evaluation of the effects of urban regeneration programs that the change between them is not because they already had very different starting conditions.

In order to validate the selection of the equivalent areas, an analysis of variance has been applied, using as an independent variable the fact that the area is experimental or equivalent and as dependent variables some socioeconomic characteristics. It is a matter of verifying that these characteristics are similar between the two types of areas, and therefore the analysis should show that the mean differences between them are not statistically significant ($p < 0.05$).

In a first result, 77 areas (43 experimental and 34 equivalents) are obtained. The analysis of variance shows that there are many similarities between experimental and equivalent areas. They are less similar to the 'IDUM' variables, illiterate people, unemployment rate, 'middle socioeconomic condition', youth dependency, 'average age of buildings' and the perception of delinquency.

There are some experimental areas that show a greater degree of urban vulnerability. These are extreme cases of difficult comparison with other neighbourhoods. The analysis of variance without including these cases implies the existence of 54 areas (30 experimental areas and 24 equivalents).

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The results show that the distributions of the two types of areas no longer differ in terms of ' IDUM'; there are only differences in the 'average socioeconomic condition' and the unemployment rate.

In short, we can say that the compared areas (experimental and equivalent) are similar in terms of demographic, socioeconomic characteristics and characteristics of the residential park.

**CONCLUSIONS**

In the vast majority of occasions have been obtained equivalent areas meeting the requirements raised, but in others it is necessary to apply criteria ad-hoc to obtain equivalences.

After the analyses carried out it is possible to affirm that the equivalent areas are similar, in terms of demographic, socioeconomic characteristics and characteristics of the residential park, to the experimental areas. However, it should be noted that the approach to peer-search methodology presents difficulties for its application in extreme cases (most vulnerable neighbourhoods).

In some cases, such delimitation must have been adapted to the availability of information, which imposes limitations on the analysis at the level of census sections and their grouping in neighbourhoods. It remains for further work the realization of analysis with data from the population and housing census of 2011, once the urban regeneration projects have been executed, which will allow to see the evolution of the experimental and equivalent areas, and to establish between both.

In short, this methodology is presented as a first step in measuring the effects of public policy on urban regeneration through the selection of peers.