Identifying Rural Areas using Entrepreneurship Indicators: a Case Study in Greece

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Abstract - **The need for a more comprehensive, multidimensional tool for policy formulation and evaluation became evident when the negative repercussions of the EU Common Agricultural Policy (CAP) had to be faced by policy makers in the early 1990s, especially in response to rural depopulation, increasing income inequalities, and environmental degradation problems. Over the last thirty years, agricultural regions in Greece have undergone dramatic structural changes, which in turn have altered their rural identity. Changes in employment composition is an indicator of the transformations taking place in the agricultural sector, and claim for more comprehensive methodologies for rural areas for profiles. The emerging need for developing new methodologies for traditionally rural and rapidly changing regions in Europe, is pertinent to rural policies. This paper comments on the possible use of an original classification criterion based on the entrepreneurial trajectory of rural areas. Aiming at the requirements set by the new EU Rural Development Regulation EC 1698/2005, the existing methodologies are also reviewed, their strengths and weaknesses are presented, and the emerging need for an enhanced tool for rural classification is finally discussed. The classification-typology is best derived when accounting for variables describing the entrepreneurial activity in rural areas using a flexible and effective response to policy needs (policy targeting and monitoring of rural development).**

Keywords - *Rurality; Rural typologies; Spatial approach; Developing regions; Mediterranean.*

1.   Introduction

The distinction between broad and narrow rural policies (e.g. macroeconomic policies, policies on agriculture, transport, public lands, and the environment) generates questions regarding the appropriate definition of rural areas. More specifically, broad rural policies are sectoral policies with a significant impact on rural regions. On the other hand, narrow rural policies are those that aim explicitly at the development of rural areas and are mainly localized at the regional scale. These are, in other words, "territorial" policies, addressed to particular places, departments or lower levels of governance (e.g. prefecture).

A more sophisticated appraisal of the baseline justification for rural development policy, requires an understanding of the processes which drives the socio economic changing in different rural regions context. The identification of various typologies of rural regions, however, requiring to be rigorous and quantitatively based, is supported by spatially differentiated theories and models.

According to a study of the United Nations Economic Commission for Europe -UNECE (UNECE, 2005), there are many definitions for ″rural″ all over the world. Moreover, there are several definitions in use within a country. The differentiation, both within a country, and among countries, depends on the different variables used to distinguish rural from non-rural areas, as well as the different variables thresholds and the spatial unit of analysis.

Most definitions are a combination of two or more variables taken among the following set: population density, the ratio of population commuting, density of workers, the rate of population increase, ratio between population density and

density of workers, the employment rate in the primary sector (UNECE, 2005).

An overview of urban-rural delimitations and classifications of ″rurality″ was performed, with a particular attention, to those definitions which have been operationally linked to rural development policy.

The following methodologies were analysed, according to NSSG (2004):

- The O.E.C.D methodology;

- The Eurostat methodology degree of urbanisation;

- Less favoured areas approach directive 75/268;

- Existing national methodologies for spatial classification namely:

  - The methodology of the National Statistical Service regarding the degree of urbanisation in Greece and the mountainous character of the Greek areas at LAU 1 level;

  - The integrated rural programs in specific areas in Greece;

  - An original approach suggested by the Hellenic Ministry of Economy and Finance;

  - Methodologies followed by other member states of the EU (EUROSTAT, 2005).

The main conclusions from the implementation of the existing methodologies in use, in the case of Greece, are described here after.

The OECD methodology distinguishes two hierarchical levels, local (commune = LAU2) and regional (NUTS3). At the local level rural communities are defined as having a population density below 150 inhabitants/km^2. At a regional level, larger functional or administrative units are distinguished by their degree of rurality, depending on what share of the region's population lives in rural communities. Three types of regions are used:

- predominantly rural regions: >50 % of the population living in rural communities;

- significantly rural regions: 15 -50 % of the population living in rural communities;

- Predominantly urban regions: <15 % of the population living in rural communities.

Each NUTS3 region in the European Union belongs to one of these three types of regions.

This methodology is focused on population density as a key variables and classified Municipalities (LAU 2) with an arbitrary density threshold. The percentage population distinguishes municipalities (LAU 2) into densely or sparsely populated areas. For Greece, the two main urban areas with more than 50% population of the whole country, non-rural prefectures (predominantly urban) accordingly, are only Attiki and Thessaloniki. The remaining NUTS 3 prefectures are all classified as rural (significantly or intensely-predominantly rural).

It is undoubtedly apparent that population density parameters also provide information on the economic features of an area. As such demographic data are indeed available at low geographical levels, the OECD methodology has been internationally implemented. Unfortunately, the OECD methodology has serious limitations, especially due to the fact that for the implementation of rural policy it is required the ability to capture information for smaller geographical units with distinct characteristics. The variation of those characteristics is not considered incorporated into the methodology, as it is evident in many instances.

On the other hand, the Degree of Urbanisation - EUROSTAT methodology is a reliable tool for the classification of urban areas. This methodology distinguishes the following three types of areas:

- densely populated area: contiguous set of local areas, each of which has a density 500 I/km^2, and where the total population for the set is at least 50.000 inhabitants (I);

- intermediate area or moderately dense: moderate dense contiguous set of local areas, not belonging to the densely populated area, each of which has a density > 100 I/km^2, and either with a total population for the set of at least 50.000 inhabitants or adjacent to a densely populated area;

- thinly populated area: contiguous set of local areas, neither belonging to a densely populated area nor to an intermediate area.

It must be specified that a set of local areas summing up to less than 100 km, not reaching the required density, but entirely enclosed within a densely-populated or intermediate area, is to be considered to form part of that area. If it is enclosed within a densely populated area and an intermediate area is considered to form part of the intermediate area, it is noted that a "local area" corresponds to the communes or municipalities in most of the cases in all metropolitan areas.

The considered indicators allow for international comparisons for their simplicity, although the methodology has serious shortfalls when it comes to the design and implementation of rural policies, mainly because of the incompatibility of the criteria used in relation to those used by the EU regulations.

The methodology, used by urban National Statistical Service of Greece, for many years has provided a simple tool for rural classification according to the degree of urbanism. This is achieved by using together population and elevation thresholds. Although this approach definitely enhances the analytical strengths of the methodology, it is insufficient for implementing rural planning and development measures and policies that are based on the existing EU legislation.

Finally, the informal approach that has been used by the Hellenic Ministry of Economy and Finance is based on a multi-criteria analysis of space classification. The suggestion was to use the Labour Force Accounts (LFA) criterion in combination with the urbanisation criterion of OECD. This way, the OECD methodology provided the framework for a broad classification at higher levels, relying on the population density, while the LFA criterion suggested as an additional key variable, appeared to be a strong tool for rural areas development programmes (Benaki, 2005). This methodology took into account all the necessary economic, social and physical geographical criteria in order to classify the Municipalities (LAU-2).

However, this type of methodology also used arbitrary thresholds. The evaluation of criteria is subjective and therefore potentially biased. In the case of Greece, the advantage of such an approach is the availability of the required statistical data. Although the proposed classification provided several advantages by combining several factors, which ameliorated the classification process, it was far from a reliable methodology, especially in view of the changing structure of the Greek economy, with the emphasis placed on entrepreneurial development throughout the country.

2.   Logical Framework

The dramatic structural changes in the employment and activity composition that are taking place in Greece have altered the rural nature in the largest part of the country. This trend becomes evident when one looks closely to entrepreneurial development statistics for the past few years. According to a recently published report conducted by ICAP (ICAP, 2007) on the capital and enterprise

mobility in Greece for the period 2000-2006, based on the business capital taxation data for that period, an increasing trend of the number of newly founded enterprises (S.A. and Ltd. types) appeared for the year 2005, after a period of decreasing numbers of new enterprise development. This inverted increasing trend continued in the following year (2006) with an even higher rate of growth (10.7%). More specifically, during 2006, for the first time since the year 2000, there was an increase in the total amount of the initial capital recorded for newly founded companies that was also significantly high as a percentage (30.5%). Further, 4,581 new companies were founded in 2006, of which 69.8% belong in either one of the manufacturing, trade, energy or financial services sectors. New business development is also accompanied by a larger proportion of new types of companies (real estate, construction, advertising, consulting services etc.) as compared to the more traditional types. Finally, the vast majority of the newly founded companies (64%) are officially registered in the prefecture of Attiki (the wider Athens Metropolitan Area), and a significant, however, much smaller percentage of companies is registered in Thessaloniki (Greece's second largest Metropolitan area). This enhanced business activity environment, has a definite impact on the nature of all regions of the country, although the impact is relatively more obvious in typical rural areas. It is therefore reasonable to suspect that entrepreneurial criteria shall also play a more significant role in elucidating the different typologies of rural areas in Greece.

3.   Methodological approach

This study attempts to enhance the existing methodological tools and approaches for rural areas definition, by introducing the entrepreneurial activity as a key classification variable. Our proposition is that in order to have flexible responses to policy needs (policy targeting and monitoring of rural development), the classification-typology is best derived when accounting for entrepreneurial activity parameters.

Births and deaths of enterprise data for the year 2003 (municipality level) for Greece are used (Source: Business Register of the NSSG). The NSSG Business Register does not include all the agricultural enterprises (holdings). It includes about 100,000 holding from a total of approximately 840,000 holdings of the Farm Register. The statistical data is fed into the Farm Register through VAT declaration information of the Hellenic Ministry of Economy and Finance, and distinctions are made based on the size

of the turnover and the employment of the holdings. Therefore, the data base available that was used in the current study is lacking agricultural activity data and this fact explains why predominantly large rural areas on the thematic maps which were produced show different than the actual levels of enterprise activity. However, this limitation by no means corrupts the main findings of the study, given that data base used is large enough to allow for reliable conclusions.

A set of GIS maps were produced, initially mapping enterprise births and deaths for all sectors in absolute numbers. Following that, the ratio of births over deaths of enterprises in all sectors was created and the relevant map for Greece was produced. The ratio shows the net enterprise activity development in an area.

In order to comparatively view the spatial relationship between enterprise activity and the typology generated by the (Degree of Urbanisation) EUROSTAT criterion at a first stage, and following that, the typology generated by the (Rurality) OECD criterion, a set of GIS maps was created, at which the enterprise activity data layer was overlaid to that of the Degree of Urbanisation – EUROSTAT, and then to that of the Rurality – OECD. The underlying assumption is that enterprise activity is an entrepreneurship indicator, which is in turn related to the urban structural characteristics of the area. Thus, the level of entrepreneurship change provides us information on the extent to which an area is rural or urban. The main issue is that for the case of Greece (and for other countries with structural changes in rural areas) the EUROSTAT and the OECD criteria are both limited, and certainly do not capture significant spatial variation in the economic activity, and hence the degree of urbanisation or rurality. This limitation impacts on policy design and implementation in areas undergoing socio-economic changes. Finetuning policies on the basis of a better understanding of the rural or urban nature of an area is therefore of great importance.

4.   Results and Discussion

The absolute numbers of births of enterprises recorded in Greece in 2003 for all sectors are presented in Figure 1. A two layer map, overlaying the thematic map depicting the EUROSTAT - Degree of Urbanisation criterion over the births of enterprise (in absolute numbers) map is also presented, as well as a second two layer map overlaying the thematic map expressing the OECD - Rurality criterion over the same births of enterprise base map.

The number of newly created enterprises varies significantly across the country, even within relatively small geographical regions. The number of newly created enterprise increases in many areas, but no systematic correlation with the EUROSTAT - Degree of Urbanisation classification was observed. However, densely populated areas are associated with higher enterprise births. The third map, using the OECD criterion, gives us further information on the level of enterprise growth, across predominantly rural areas in Greece. Thus, the spectrum of urban attributes in a predominantly rural space, as the Greek case appears to be, are much better captured when accounting for the additional entrepreneurship variable.

In Figure 2, a similar set of thematic maps are presented, providing information about the number of enterprise deaths for the year 2003. While it is reasonable to presume that increased enterprise activity is a good proxy for increase in urbanisation, the contrary is not necessarily true. This means that decrease of enterprise activity are not always associated with the transformation of a region toward a rurality type. In fact, it can be induced from a closer look of the thematic maps that the areas that exhibited increases of enterprise activity, also exhibit decreases, although at a lower rate.

In Figure 3 a set of thematic maps is also presented. This time the ratio of births over deaths is mapped out, and overlaid on the EUROSTAT and OCSE criteria maps. The ratio actually presents the net entrepreneurial activity across the country.

For most of the country (based on the cross-section enterprise activity data for the year 2003) the ratio is below 1. This result is consistent with the widespread rural character of the largest part of Greece, with the obvious exemptions of the urban agglomerations.

The comparison with the EUROSTAT criterion is confusing as to the urban character of certain areas, but is enlightening as to the rural areas.

As to the comparison with the OECD criterion, we can conclude that it captures the variation within significantly and predominantly rural areas as to the urban like attributes due to net enterprise development.

5.   Conclusion

The results of this study support that enterprise activity could represents a key variable for developing a more precise way of defining the level of an area. This paper tested a basic indicator for

measuring entrepreneurial activity, namely the enterprise births and deaths, and explained why such information could improve the effectiveness of the existing methodologies. However, more detailed research could focus on the examination of entrepreneurial activity indicators. Entrepreneurship is a multidisciplinary concept (Deakins, 2006) and the introduction of such criteria shall account for area-specific and society-specific characteristics, and hence should be carefully designed. Finally, methodologies that use entrepreneurship change as a variable produce results that are more consistent with the EU intervention measures, especially after the Lisbon Strategy was adopted by the EU.

The analysis of time-series data for births and deaths of enterprises is an useful tool to draw some concrete conclusion for the behaviour of the entrepreneurial activity and its correlation with rural areas especially in Mediterranean development regions.

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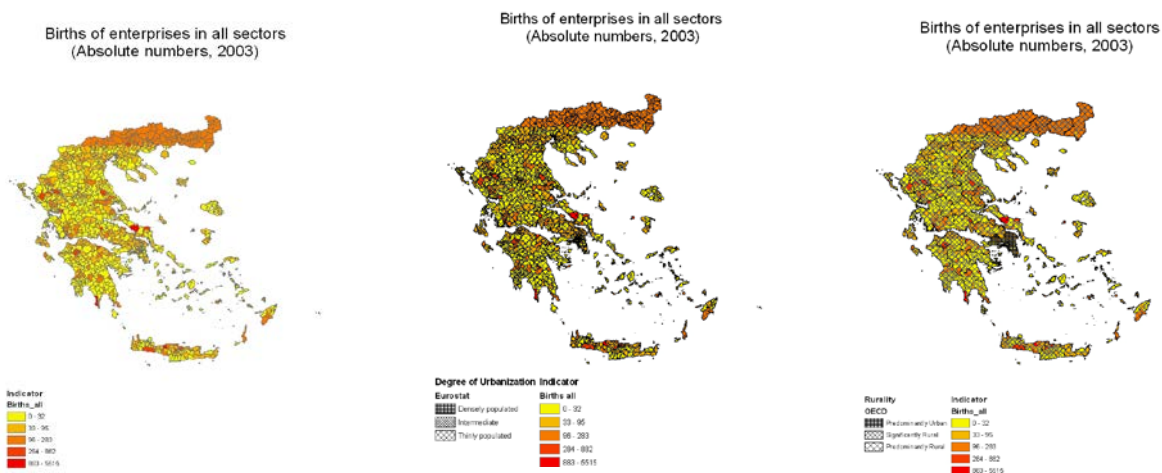
Figure 1 – Comparison map of births of enterprises in all sectors recorded in Greece (2003) with EUROSTAT-Degree of Urbanisation and OECD – Rurality criteria.
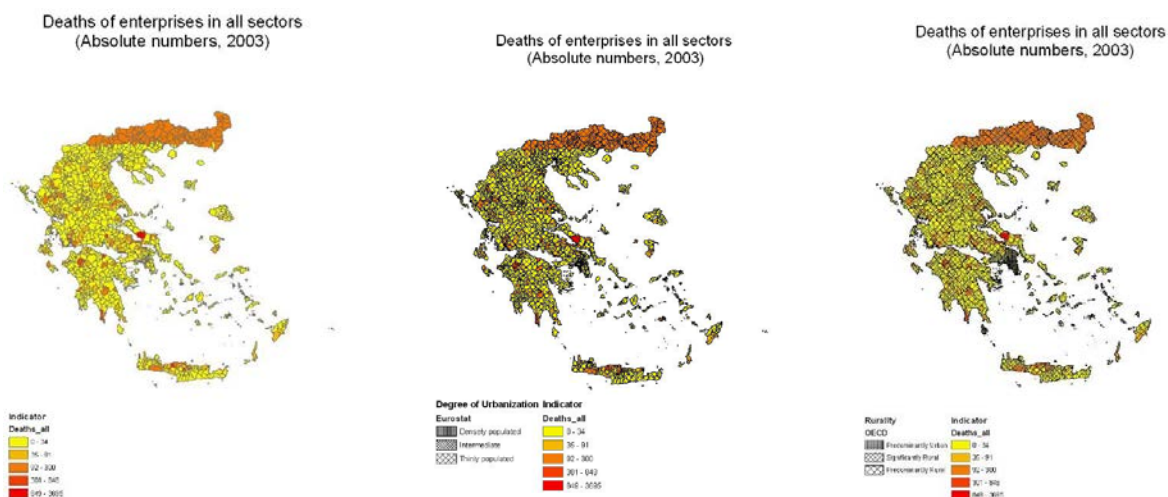
Figure 2 – Comparison map of deaths of enterprises in all sectors recorded in Greece (2003) with EUROSTAT-Degree of Urbanisation and OECD – Rurality criteria.
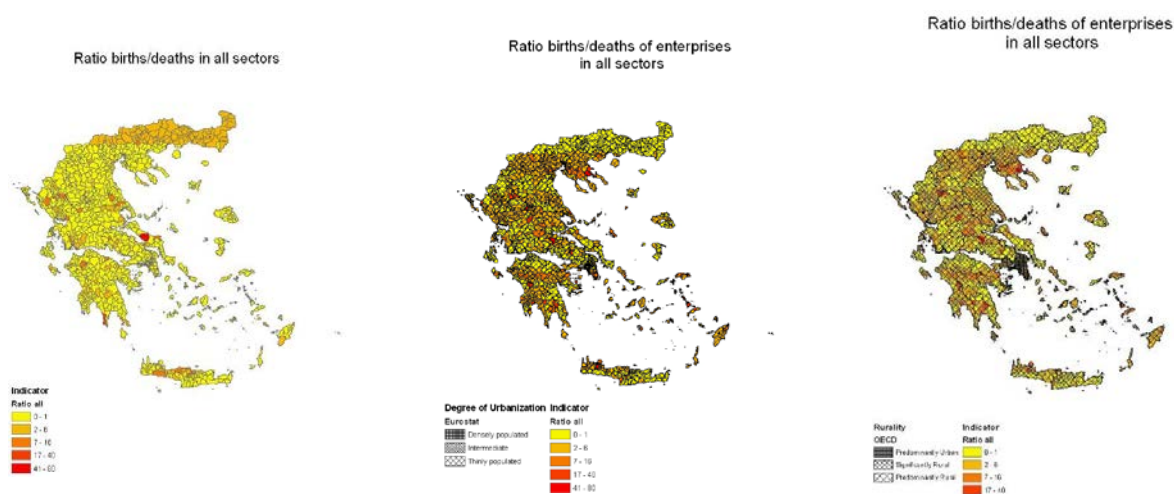
Figure 3 – Comparison map ratio births/deaths of enterprises in all sectors recorded in Greece (2003) with EUROSTAT-Degree of Urbanisation and OECD – Rurality criteria.