Entrepreneurial Parameters and Classification – Typology for Rural Areas

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Abstract: Up to the mid 1980's, the European Union (EU) based its rural development policy approaches on uni-dimensional models. 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) in the mid '80's had to be faced by policy makers, especially in response to rural areas depopulation problems, increasing income inequalities, and environmental degradation problems.

Over the past thirty years, rural regions in Greece have undergone dramatic structural changes, which in turn have altered their identity. The change in employment composition in the newly formulated rural areas is a typical indication of the transformations taking place in the agricultural sector, and leads to a pressing need for a set of new definitions for typology of those areas.

More specifically, the emerging need for applying new methodologies for Greece, and other EU regions with similar characteristics, as well as defining the appropriate classification data sets, is pertinent to rural policies. Such policies, for example territorial policies, aim explicitly at the economic development of rural areas and in many instances focus on regionalized interventions for particular places.

This paper introduces a set of classification – typology criteria which originate from entrepreneurial behaviours in the rural areas. Further, aiming at the requirements set by the new EU Rural Development Regulation EC 1698/2005, the existing typology methodologies are reviewed, their strengths and weaknesses are presented, and the emerging need for an enhanced methodological tool for rural classification is elaborated.

In conclusion, the primary contribution of this paper is the proposition that for a flexible response to policy needs (policy targeting and monitoring of rural development), the classification-typology is best derived when accounting for entrepreneurial activity parameters.

1.   Existing Typology - Classification of rural areas tools and their limitations

The distinction between *broad* from *narrow* rural policies create needs that generate scientific and technical questions regarding the appropriate definition of rural areas. More specifically, broad rural policies are sectoral policies with significant impacts on rural areas and populations (e.g. macroeconomic policies, policies on agriculture, transport, public lands, environment, and the like). On the other hand, narrow rural policies are those that aim explicitly at the development of rural areas and are mainly localized and regionalized policies, and, in the case of Greece, are mostly implemented with national and EU support. These are, in other words, "territorial" policies, addressed to particular places, often NUTS 3 or lower levels.

A more sophisticated appraisal of the baseline justification for rural development policy intervention, accounting for its subsequent impacts, requires firstly an understanding of the processes which drive the changing socio-economic situation in different parts of rural Europe, and secondly a comprehension of the way in which such change varies across the different geographical areas of the EU. This need explains why typologies of rural regions require to be rigorous, quantitatively based, supported by spatially or territorially differentiated theories and models. There is considerable literature on both rural typologies, as well as on modeling of rural regions.

A study of the United Nations Economic Commission for Europe - UNECE (UNECE, 2005) resulted that there are a lot of different definitions for ″rural″ all over the world. Moreover, there are several definitions in use within a country. The differentiations, both within a country, and among countries, depend on the different variables used to

distinguish the rural from the non-rural areas, as well as the different thresholds and the basic statistical units.

Most definitions in use are a combination of two or more variables among the following set: population density, the level of population, commuting, the labour force, the rate of population increase, the ratio of population density / density of employment, the employment at the primary sector (to delimitate agglomerations), and isolation criteria (UNECE,2005).

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

The following methodologies were analysed, inter alia (NSSG, 2004):
- The O.E.C.D methodology
- The Eurostat methodology -degree of urbaniation
- 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 urbanization in Greece and the mountainous character of the Greek areas at LAU 1 level.
  - The integrated rural programs in specific areas in Greece.
  - An approach suggested by the Hellenic Ministry of Economy and Finance
  - Methodologies of 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 hereunder.

The OECD methodology [1] is focused only on the population density in order to characterise the Municipal Departments (LAU 2) with an arbitrary density threshold. Subsequently, this methodology classifies the areas of NUTS 3 level according to the population percentage, so that it distinguishes the Municipal Departments (LAU 2) into densely and sparsely populated. Accordingly, for Greece the non-rural prefectures (predominantly urban) are only Attiki and Thessaloniki. The rest NUTS 3 areas are 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. This reality has resulted that the OECD methodology is internationally implemented, given the fact that the required demographic data are indeed available at low geographical levels. Hence, the OECD methodology has serious limitations, especially due to the fact that the implementation of the agricultural policy as well as the design and implementation of rural policy development programs requires the ability to capture micro-area information for smaller geographical units, with distinct characteristics. Additionally, the variations of those characteristics are insufficiently incorporated into the methodology, and in many instances, are important.

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[1] This definition 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 three types of regions.

On the other hand, the Degree of Urbanization - EUROSTAT methodology[2] is a reliable tool predominantly for the classification of urban centres rather than for rural areas. The inherent simplicity of demographic indicators allows for international comparisons, 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.

Further, the methodologies used by the National Statistical Service of Greece, for many years have provided simple tools for classification according to the degree of urbanism and "mountainous character". This is achieved by using population and altitude thresholds. Although this approach definitely enhances the analytical strengths of the methodology, it is evident that it is also 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.

During the past few years there were several studies in Greece toward the multi-criteria analysis direction. The suggestion was to use the Labour Force Accounts (LFA) criterion in combination with the urbanization criterion of OECD. This way, the OECD

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[2] This classification concept is based on 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.

> *intermediate area:* 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.

A set of local areas summing up to less than 100 km^2, 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 it 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

methodology provided the framework for a broad classification at higher levels, relying on the population density, while the LFA criterion suggested as an additional parameter, 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 Municipal Departments.

However, this type of methodology also used various arbitrary thresholds, and hence endangered predisposing the result. After all, 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 majority of statistical data required.

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.   Structural Change of Rural Areas in Greece and Entrepreneurship

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 also continued for the following year, 2006, with an even higher rate of growth (10.7%). More specifically, during 2006, for the first time as of 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 et.c.) as compared to the more traditional types. Finally, the vast majority of the newly founded companies (64%) are officially registered in the prefecture of Attica (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, with a large agricultural sector.

It is therefore reasonable to suspect that entrepreneurial criteria shall also play a more significant role in elucidating the confused typology distinction of areas in Greece.

3.   Proposition and Methodological Approach

This paper attempts to enhance the existing methodological tools and classification approaches by introducing the idea of the entrepreneurial activity parameter. 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)[3]. 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

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[3] 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.

the relevant map for Greece was produced. The ratio shows 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 were created, at which the enterprise activity data layer was over-imposed 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 in turn is related to urban spatial characteristics for an area. Thus, anything that is not urban shall be rural and most importantly, the level of entrepreneurship change gives us the extent to which an area is rural versus urban. The main issue is that for the case of Greece (and for many other countries with frequent economic variations on the landscape), the EUROSTAT and the OECD criteria are both limited, and certainly do not capture significant spatial variation in economic activity, and hence in the degree of urbanisation or rurality of a geographical area. The repercussions that this limitation could have on policy design and implementation in areas undergoing social and economic change could be important, with direct impact on the welfare of the populations of those areas. Fine-tuning policies on the basis of a better understanding of the rural or urban nature of an area is therefore of great importance.

4.   Main Results

The GIS maps produced are presented at the Appendices.

The absolute numbers of births of enterprises in Greece for all sectors (for the year 2003) are presented in **Appendix A.** A two layer map, overlaying the thematic map expressing 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.

A first comment is that the number of newly created enterprises varies significantly across the country, with widespread variations, even within relatively small geographical regions. The second map, using the EUROSTAT criterion, exhibits that the number of enterprise increases is dense in many areas and, at the country level as a whole, there is no systematic correlation with the EUROSTAT Degree of Urbanisation classification. However, densely populated areas are almost always associated with higher enterprise births. The third map, using the OECD criterion, gives us further information on the level of enterprise growth, across a predominantly rural area in Greece. Thus, the spectrum of urban attributes and their extent of urbanisation differentiations, in a predominantly rural landscape, as the Greek case appears to be, are much better captured when accounting for the additional entrepreneurship parameter.

In **Appendix B,** a similar set of thematic maps are presented, but this time mapping the number of enterprise deaths for the year 2003. It is reasonable to presume that increased enterprise activity is a good proxy for increase in urbanization, although the contrary is not true. This means that decrease of enterprise activity is not associated with the transformation of a region toward a rural 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 lower levels.

The results of the two layer maps are similar with those of the enterprise birth ones. The patterns are similar, and the common denominator between the maps of Appendix A and B is that almost the same areas that have enterprise births also have enterprise deaths and therefore have enterprise (non-rural) activity.

In **Appendix C** a set of three thematic maps is also presented. This time the ratio of births over deaths is mapped out, and overlaid on the EUROSTAT criterion map, and then on the OECD criterion one. The ratio actually presents the net entrepreneurial activity across the country.

An initial comment is that for most of the country (based on the cross-section enterprise activity data for the year 2003) the ration is below 1 (yellow colour). This result is consistent with the widespread rural character of the largest geographical part of Greece, with the obvious exemptions of the urban agglomerations.

The two-layer map 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 two-layer map 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). This is seen by observing how the rural geographical majority of the country is in many areas light or dark orange, which means that net enterprise activity (ratios greater than 1) exist in those areas.

CONCLUSION

The overall conclusion is that there is evidence that enterprise activity could act as a "clarifying agent" and a new set of entrepreneurship-based criteria and indicators could be developed, aiming at a more precise way of defining the level of urbanisation (or rurality) of an area within a NUTS 3 area. This paper tested the most basic indicator for measuring entrepreneurial activity, namely the enterprise births and deaths, and explained why such information could cure many of the problems of the existing methodologies. Furthermore, more detailed research could focus on the examination of entrepreneurial activity indicators, which in turn could take a multi-criterion methodology of typology a step ahead. After all, entrepreneurship is multidisciplinary in its nature (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 parameter produce results that are more consistent with the EU intervention measures, especially after the Lisbon Strategy was adopted by the EU.

Further studies, in order to analyse the entrepreneurial activity, are required. An updated analysis with more recent information is in progress. The analysis of time-series data for

births and deaths will be also a useful tool to draw some concrete conclusion for the behaviour of the entrepreneurial activity and its correlation with rural areas.

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