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Full cities, empty territories
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LONG ABSTRACT

Title:

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Abstract

This paper explores the methods formulated to identify urban, rural, and intermediate territories within the ESPON projects and compares the resulting territorial representations with those derived from the implementation of the TERCET typologies.
As part of the 2030 Agenda for Sustainable Development, urban and rural areas play an essential role in eradicating poverty and hunger, reducing land use pressure and mitigating climate change effects (UN, 2015; EUROSTAT, 2021). Beyond SDG 11 and its relative targets which are specifically addressed to transform cities and human settlements in inclusive, sustainable, and resilient places, about two thirds of the 169 targets across the other SDGs can be measured and analysed more than cities, for urban and rural areas as well (ibid.).
Designing effective policies to reach these targets requires a solid knowledge of demographic dynamics, economic specialisation, changes in morphological characteristics and settlement distribution, and the evolution of linkages which extend across the nearest environments (e.g., Samman et al., 2018; Pires et al., 2021). This knowledge depends on building reliable, timely and internationally comparable datasets, which in turn is conditioned by the choice of the statistical method that delineates urban, rural, and intermediate territories (Cattivelli, 2021a).
The pressure to choose the method that best describes the territories in a consistent manner has increased in recent times, due to an undisputed need for a harmonised delimitation of territories that is locally relevant and internationally comparable at the same moment (ibid.).
On one hand, regional governments and national statistical offices elaborate their own territorial definitions, which are used to produce statistical analysis or to disaggregate indicators for each territory for measuring progress towards territorial policies and planning. On one hand, the ongoing proliferation of different methods to define urban and rural areas and to diversify intermediate ones reflects the various perspectives as to

what characterises these territories and the intention to describe more accurately their diversity at the local level. The first methods they formulated declined territories according to an urban/rural dichotomy based mainly on demographic size and economic dynamics (Cattivelli, 2021b). Based on this, urban areas were immediately defined as territories with clear urban attributes (e.g., high density of population, consistent job opportunities and service supply), while rural areas were usually delimited as a residual, or sometimes based on a combination of different criteria, such as economic specialization in agriculture, remoteness from urban areas and absence of social services and infrastructure (ibid.).

The subsequent methods reflected the various perspectives as to what characterises territories and the intention to describe more accurately their diversity at local level. Their definitions relied mainly on the combination of multiple perspectives and defined precisely "urban" and "rural" territories, which remained as well-identified territories at the extremes of a sort of territorial *continuum* (Pagliacci, 2017). However, they generically delimitated intermediate territories by introducing generally a third category and modified the thresholds of the variables used to define urban and rural areas. The scarce attention devoted to their delimitation has prevented for a long time to analyse possible different types of intermediate territories or to implement more territorial-targeted policies to reduce urban-rural inequalities and promote local development.

Only in recent years, the scientific and political debate has agreed that more than one type of urban, rural, and intermediate areas can exist, and that a transdisciplinary approach, linking the physical, economic, social, and demographic aspects, is needed to capture the intrinsic variability and complexity of the intermediate territories (Cattivelli, 2021). This awareness has resulted in innovative and numerous proposals for the representation of territories, which use methodologies that integrate an appreciable number of dimensions of analysis and indicators (e.g., Bencardino & Nestico´, 2017; Champion & Hugo, 2017; Ortiz-Baez et al., 2021).

On the other hand, comparisons among territories at international and inter-regional levels are less meaningful. Harmonised method enables comparisons among territories at international and inter-regional levels, without considering the intra-regional differences. Differences in urban, rural, and intermediate territories delimitations adopted at local level appear relevant immediately and affect the results of the analysis across regions. This in turn makes it difficult to measure the actual progress towards achievement of SDG targets achievement in both rural and urban areas.

At the European level, TERCET initiative has proposed different harmonised typologies of rural, urban, and intermediate territories for international official statistics and standards. These typologies are essentially based on demographic indicators calculation at grid level and the setting of only three thresholds, one for delimiting each territory (EUROSTAT, 2021). Thanks to these simple statistical calculations, these typologies are largely used to compare territories and produce official statistics. However, they are not designed to substitute regional governments and national statistical offices methods, but to complement them with definition that are internationally comparable. This happens because these typologies do not describe accurately territorial diversity at the local level.

Other more complex methods have been implemented within the ESPON program, in its financed projects, for analytical purposes and policy-based investigations across all European regions. In the research practices and scientific publications, the TERCET typologies result the most applied at European level, while ESPON ones are appreciated

for their completeness and appropriateness (Banski and Mazur, 2016) and thus for investigations with the formulation of rural development policies as aim.

The lion's share of this research has focused on the analysis of the consistency of original methods elaborated within the ESPON program to define urban, rural, and intermediate areas in the last years, i.e., their relevance at local level and their comparability at the international one. Considerable efforts have been poured into the description of the methods and their characteristics (variables, spatial unit, statistical techniques, and unit, use and replicability/comparability at international level), as well as in their clustering into one of the categories identified by Banski and Mazur (2016, locational, structural, and combined). Equal attention has been paid to the detail of the multiple facets of intermediate areas, within and relative to urban and rural areas. Therefore, this share of the research better delineate the intrinsic variability expected to occur within territories and the efforts of each ESPON method to capture it.

The remaining share of the research is reserved to the comparison of the considered ESPON methods with the TERCET typologies to demonstrate how the application of different methods leads to dissimilar territorial representation of urban, rural, and intermediate territories. This comparison is based on the same characteristics that have declined before and reveals which of the two categories of methods has been pauper in addressing the variability of territories and excess in consistency.

For these reasons, the presentation is structured as follows. The first moment includes a brief overview of the most used methods applied in the past to classify urban and rural territories, as well as the present motivations that justify the proliferation of different territorial delimitations. The next moment explains the methods adopted to collect and cluster information about classification methods formulated by TERCET typologies and within ESPON projects in recent years. The next one illustrates the results of this investigation, that is, the characteristics of the methods, their clustering and attention to intermediate territories delimitations. The following one compares the characteristics of both kinds of methods. Finally, the final one concludes the study.

As the present documentary analysis indicates, ESPON proposes some original methods to settle this dispute. These methods have a multi-scalar approach and focus on the patterns of territory diversity, thus challenging the framework based on the urban/rural dichotomy across all European regions. As such, they provide a solid evidence-based policymaking and measuring progress towards territorial policies and planning, less reliable statistical comparisons. Being often a byproduct, ESPON methods depend strictly on projects aims and are rarely used outside. The comparison with the TERCET typologies, which was the most used for comparable statistical information at the European level for their reliability and timely, outlines differences in the preferred variables, spatial units, and number of identified territories. The preference for some unit or statistical techniques which leads to different territorial representations. Changes in one variable or in the spatial unit leads to consider a territory as rural or urban or vice versa. Thus, in turn, implies their inclusion or exclusion in the strategic plans or to be/not to be eligible for certain financial aids. Adopting economic or demographic or land-use indicators underlines the preference for those indicators which that more than others characterise the territories. Or yet, as the territorial classification is based for further economic analysis, underestimate or overestimate local economic performance, including or excluding territories. The choice related to the statistical techniques is also crucial. Using single or more indicators together, as happens in the most considered methods, underlines the desire to implement simple method which can be replicated in other moments enabling temporal comparison or understood largely by academic and

non-academic audience. The complexity of the choices related to each single characteristics reveals that diversity is appreciated as key element of contemporary territories and that different territorial typologies can coexist within the same model.
Therefore, the ESPON methods provide a solid evidence-based policymaking and measuring progress towards territorial policies and planning, less reliable statistical comparisons. Although they are tested for all European regions, they are rarely used outside of the projects in which they were formulated. Being often a byproduct, ESPON methods depend strictly on projects aims and are rarely used outside. This prevents us from understanding whether they are also useful for international comparisons. The sheer number of spatial classes or variables hinders comparison because it leads to spatial representations that vary widely.
Oppositely, TERCET typologies result as harmonised methods which do not considering intra-regional differences. Their coordinated characteristics in terms of variables, spatial units, and number of identified territories offer territorial representations comparable at international and inter-regional levels.
As a result, it is not possible to determine a priori which of your method categories is best. However, it is possible to affirm that ESPON methods are preferable when making policy decisions, while TERCET typologies are preferable when making cross-country comparisons.

Keywords: ESPON; urban-rural identification; urban-rural definition; peri-urban areas; TERCET typologies.

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