



Regional Focus

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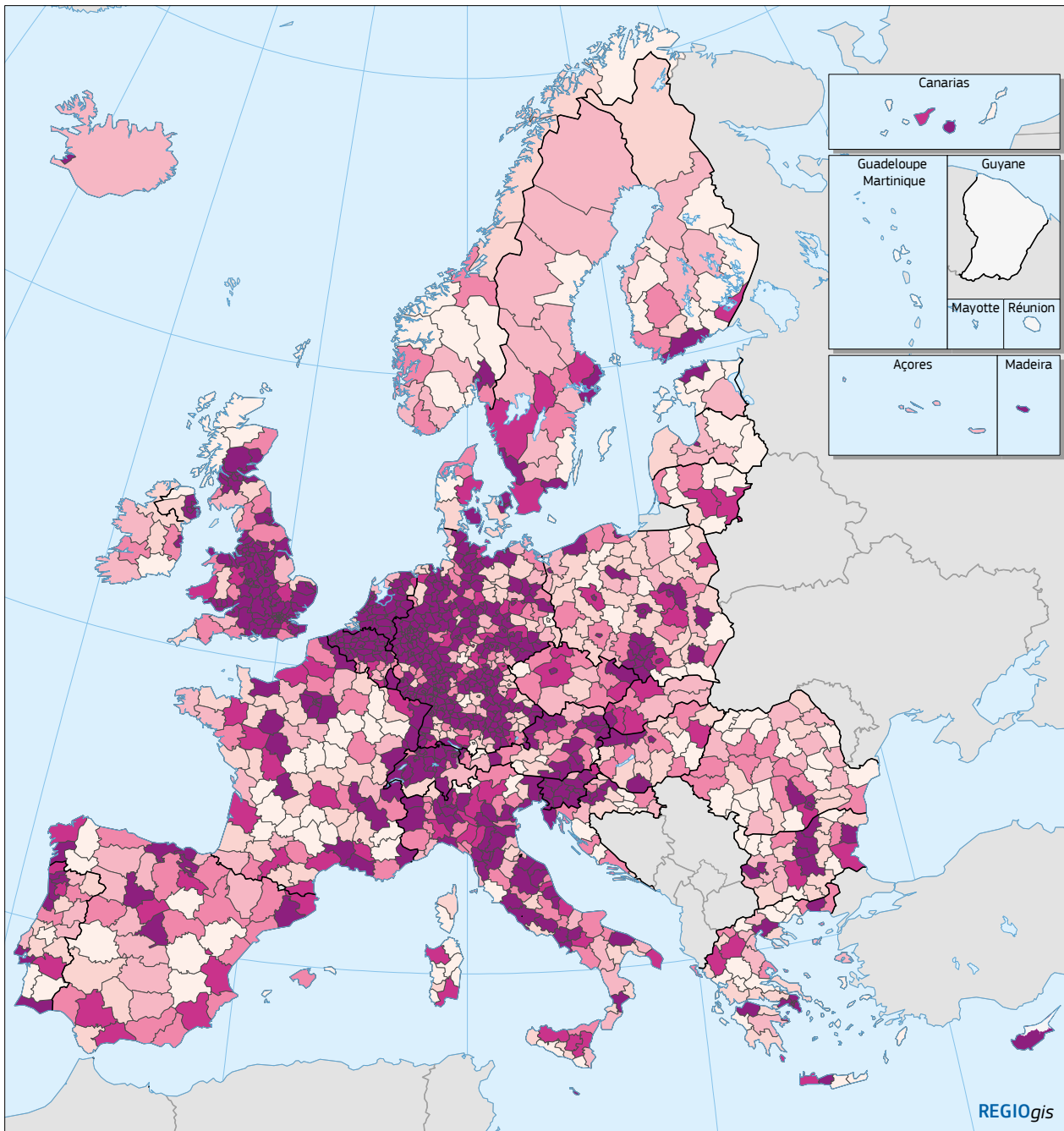
Access to universities in the EU: **a regional and territorial analysis**

By Hugo Poelman and Lewis Dijkstra

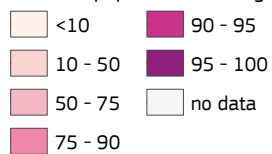
This regional focus shows the regions and areas that have good access to a university and those that do not. It uses data on the location of all universities, population grid statistics and the road network to measure the number of people who live more than a 45-minute drive from a university.

Convenient access to higher education can be an important asset for regional development and competitiveness. It can boost innovation and upgrade the skills of the labour force through education and lifelong learning. Widespread access will allow more people to attend university, including those who cannot afford to move to get a degree.

In general, universities are quite widely distributed across Europe. In the EU and the European Free Trade Association (EFTA) area an average of four out of five people live within a 45-minute drive of the main campus of at least one university. Nevertheless, in one in five NUTS-3 regions the majority of the population cannot reach a university in 45 minutes. These regions together represent 14% of the EU plus EFTA's population. Two-thirds of these regions lost population since 2010, compared to less than one-third of the regions where the majority lives close to at least one university. Most of the regions with low access to a university are located in eastern Member States (Map 1).

Map 1: Access to a university main campus, by NUTS3 region, 2014**Access to a university main campus, by NUTS-3 region, 2014**

Share of population in a region, in %



Share of population in a NUTS-3 region, in %, with access to a university main campus within a 45-minute drive.

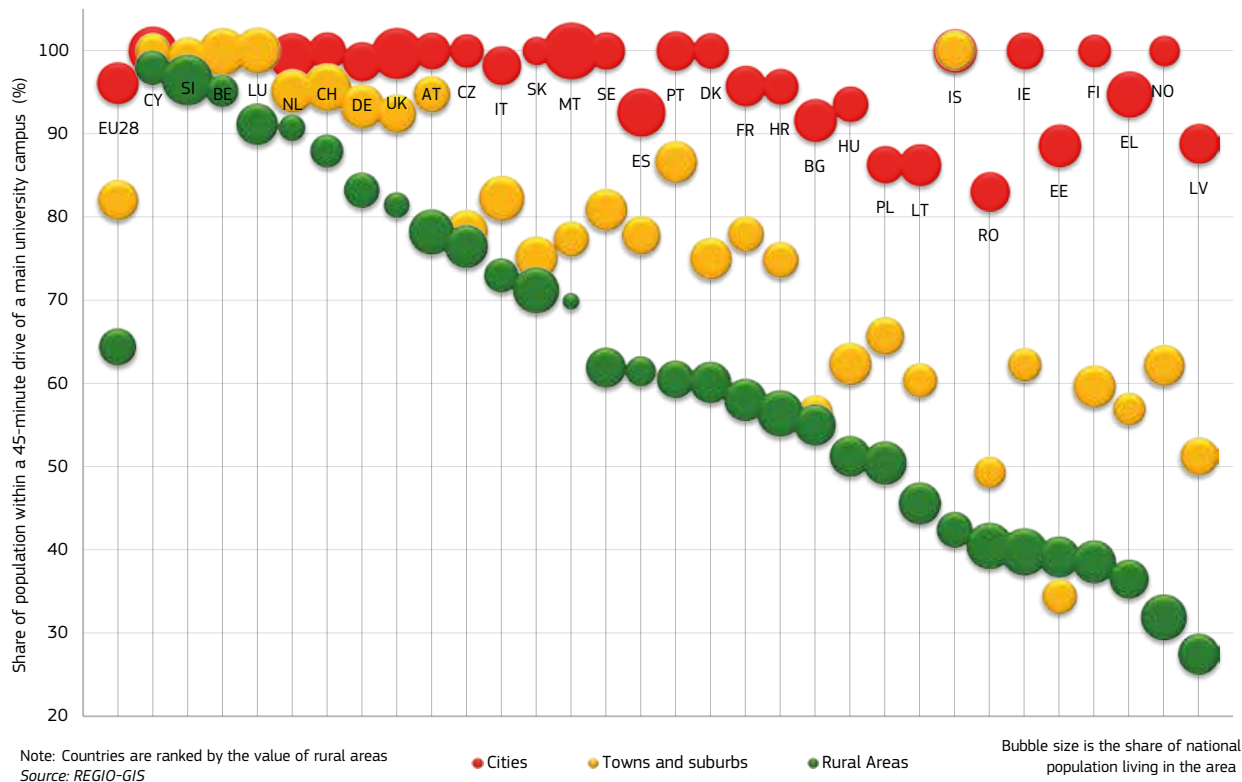
Sources: ETER register, OpenStreetMap, TomTom, Eurostat, REGIO-GIS

0 500 km

© EuroGeographics Association for the administrative boundaries

Virtually everybody living in a European city¹ has easy access to a university. In contrast, access in rural areas is significantly lower, with only 64% of the population living close to a university. Accessibility to universities is especially low in rural areas, and towns and suburbs in Latvia, Norway, Greece and Finland.

Graph 1: Accessibility to a university main campus by degree of urbanisation, 2014

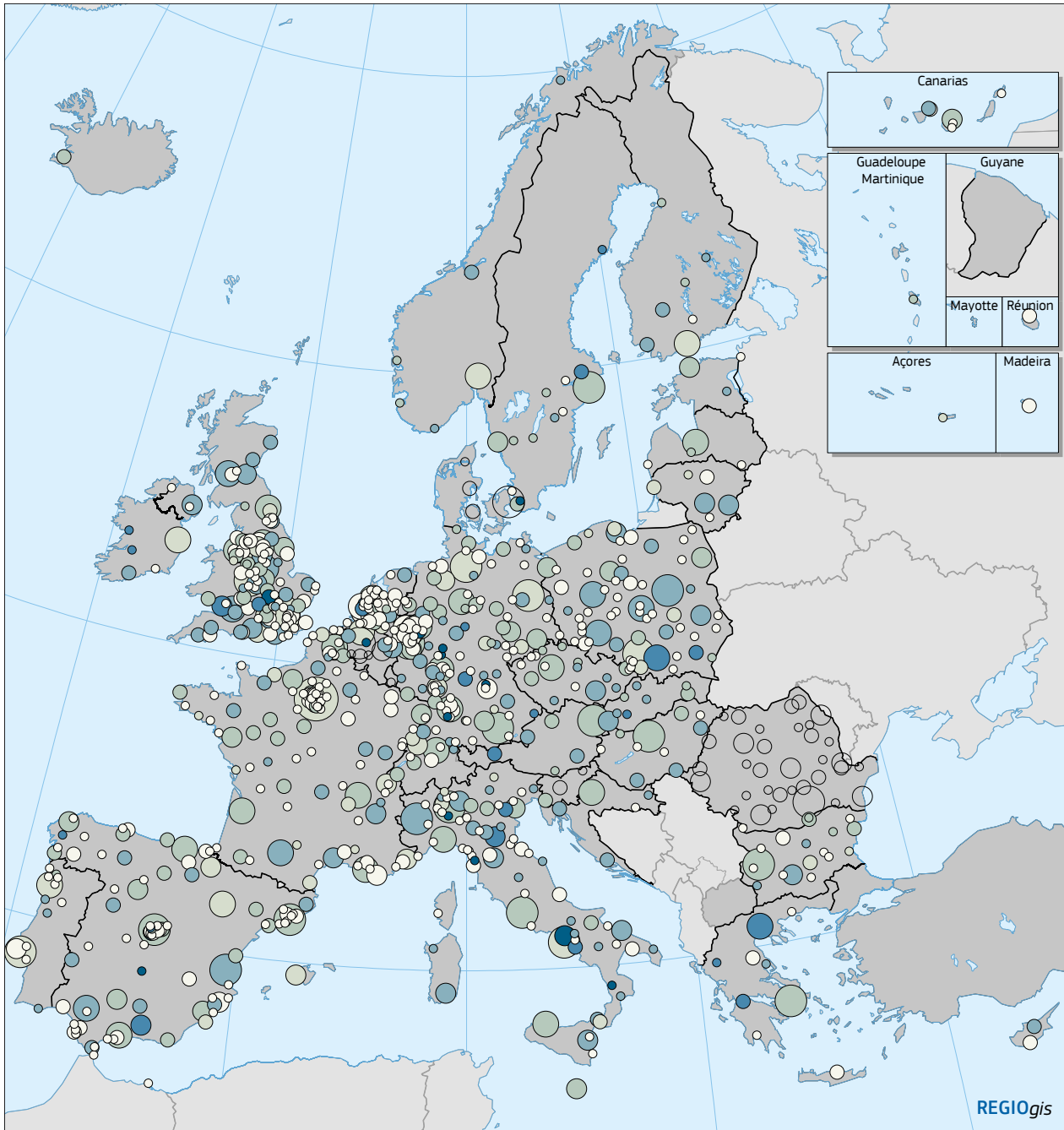


The discrepancies in accessibility may in practice be mitigated by the presence of auxiliary campuses of multi-site universities. Currently, no systematic geo-referenced information is available on the location and characteristics of these additional campuses. Hence, we can only assume that the actual accessibility levels to reach at least one campus of a university will be higher in a number of areas or regions. At the same time, auxiliary campuses might be limited in terms of the study levels or subjects offered, meaning that pursuing complete higher education studies or having access to a wider variety of study subjects might still require access to the universities' main sites.

Universities can also play an important role in the social and economic functions provided by cities. By combining the information on universities' locations and student numbers with the extent and the demographic characteristics of European cities, we can assess the importance of the student population in comparison with the residential population of the cities. On average, students enrolled at universities² in cities represent more than 6% of the cities' population³. Higher shares are found especially in medium-sized cities. In cities with a population between 250 000 and 500 000, students account for 7.5% of the population. In cities with a population between half a million and 1 million, this is 8%. In 38 cities, the number of university students divided by the cities' population exceeds 20%. Many of these cities (such as Bologna, Oxford, Kraków and Leuven) have hosted universities for several centuries.

- 1 For this analysis we use the degree of urbanisation classification as defined at the level of 1 km² grid cells. This classification distinguishes (1) urban centres with a population of at least 50 000 and a density of at least 1 500 inh./km², (2) urban clusters, representing smaller towns and suburbs with a population of at least 5 000 and a density of at least 300 inh./km², and (3) rural grid cells (the other grid cells). For ease of reading, we refer to them using the municipal terms: cities, towns and suburbs, and rural areas.
- 2 Student numbers are registered at the main site of the university. In practice, some of them will actually study and live at auxiliary campuses, which may be located outside the city or in other cities.
- 3 This does not necessarily mean that the student numbers are part of the registered residential population figures. Students may still be registered at their initial home address. In practice, this will depend on national and/or regional regulatory requirements.

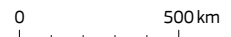
Map 2: University students by city, 2014



University students by city, 2014

% of population	Urban centre population
○ < 2.5	○ < 100000
○ 2.5 - 5	○ 100000 - 250000
○ 5 - 10	○ 250000 - 500000
○ 10 - 20	○ 500000 - 1000000
○ 20 - 30	○ 1000000 - 5000000
○ ≥ 30	○ ≥ 5000000
○ No data	

Students enrolled at ISCED 5-7 level at universities having their main site in or nearby the city.
Sources: European Tertiary Education Register ETER, Eurostat, OpenStreetMap, REGIO-GIS



Conclusions and outlook

The new combination of three comprehensive data sources allows us to depict the territorial diversity of access to universities. This demonstrates the relevance of the regional and territorial dimension when discussing higher education. The current analysis is constrained to university main campuses only, and did not distinguish amongst the study subjects offered by the universities.

A further analysis might look into accessibility focusing on particular subsets of universities, classified by study subject. Furthermore, the European Tertiary Education Register (ETER) project intends to enhance the data by including information about the auxiliary campuses. Once such information will be available a new assessment of the spatial distribution of institutions will definitely be relevant.

The data and the analysis method

ETER is a comprehensive database of higher education institutions in Europe. It provides detailed data on universities' student numbers, subject areas, and the location of the main site of the institutions. The locational quality of the university coordinates has been assessed by comparing the ETER data with city boundaries and with point locations from sources such as Open Street Map.

This location information (geographical coordinates) has been linked to a comprehensive road network. For each university we have determined the area that can be reached within 45 minutes by car. Next, we can combine the extent of the accessible areas with population data at the level of each 1 km² grid cell. Hence, each populated grid cell is now characterised as being close to a university or more remote. Finally, the grid level data can be aggregated at different geographical levels, such as NUTS-3 regions or territories by degree of urbanisation.

The link between university locations and cities has been determined by overlaying the point locations of universities with the boundaries of the harmonised European definition of cities and greater cities. As the campus of a university that is functionally linked to a city can be located somewhat outside the official city boundaries, universities located at less than 5 km from the city boundaries (but in the same country) have also been included. In addition, some universities located further away have also been linked to a city provided that ETER reports the same city name and that the city name is part of the official name of the university.

References

European Tertiary Education Register (ETER):

<https://www.eter-project.com/> and https://ec.europa.eu/education/resources/european-tertiary-education-register_en

Population data at 1 km² grid cell level (GEOSTAT 2011):

<http://ec.europa.eu/eurostat/web/gisco/geodata/reference-data/population-distribution-demography/geostat>

Any questions, comments or contributions should be sent to the following address:
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