

## 31. REGIONAL ACCESS TO NETWORK INFRASTRUCTURE

Infrastructure is the foundation of regional development and has been the target of significant investment through regional policy in the past years. Regional competitiveness is affected by infrastructure endowment, such as transport or telecommunication networks which, together with investment in human capital and innovation, can improve the access to markets, increase the connectivity of regions and provide services more efficiently.

Distance to markets and services can be approximated by the time needed to reach an urban centre (larger than 50 000 inhabitants). Similar to most continental western European countries, in Mexico and the United States more than 70% of population is distributed within a 30 minutes driving distance from an urban centre. However, in the case of Scandinavian countries, Greece and Canada, at least one-fifth of population live in remote areas (Figure 31.1).

Regional disparities in the density of the road network can be used not only to account for different patterns of regional capital investment, but also for the capacity of regions to exchange goods and services. Nevertheless, despite the economic benefits provided by a well connected system of roads, there is increasing concern on the negative environmental effects caused by a higher flow of motor vehicles to the wellbeing of the population.

While most of the regions in continental Europe seem to benefit from a more homogenous network density, large differences are found in the United States and Norway, where the regions District of Columbia and Oslo have network densities that are more than 20 times higher than the national average (Figure 31.2).

Besides the physical access, high-speed ICT network is a key factor of the facility to adopt new technologies and provide services to remote areas. Regional differences in the percentage of households with broadband access are marked both in countries with a high ICT penetration, such as Canada, the United States and Australia and countries with low average values such as the Czech Republic, Greece, Spain and Italy (Figure 31.3).

A significant amount of the regional difference in the access to broadband can be attributed to agglomeration economies, and more precisely to the difference in urban and rural settlements. As expected, households in rural regions have a limited access to broadband. All the countries, except for Denmark and the Slovak Republic show a positive correlation between the access to broadband and the level of urbanization, (Figure 31.4).

### Definition

The road network density of a region is defined as the ratio between the total kilometres of roads divided by the total area of the region (Km<sup>2</sup>). In the case of Europe, the road networks accounts for all motorways. For Canada, Mexico and the United States the road network takes only into account roads classified as highways. In the case of Chile, the road network is composed by all pavement primary roads.

Broadband access accounts for the number of broadband lines provided by operators in the country. This includes business and residential lines, with residential making up the vast majority. For clarification, the high-capacity leased line to a business counts as one subscription. Subscriber data does not count the number of business employees who may use that connection.

The Spearman correlation coefficient measures the strength and direction of the relationship between two variables, in this case the broad band access and the share of population in predominantly rural (PU), intermediate (IN) or predominantly rural (PR) regions. A value close to zero means no relationship (see Annex 3 for formula).

### Source

OECD Regional database <http://dotstat/wbos/>.

See Annex B for data, source and country related metadata.

### Reference years and territorial level

2009; TL2.

**Road network density:** No regional data available for Israel, Japan, Korea, Australia and New Zealand.

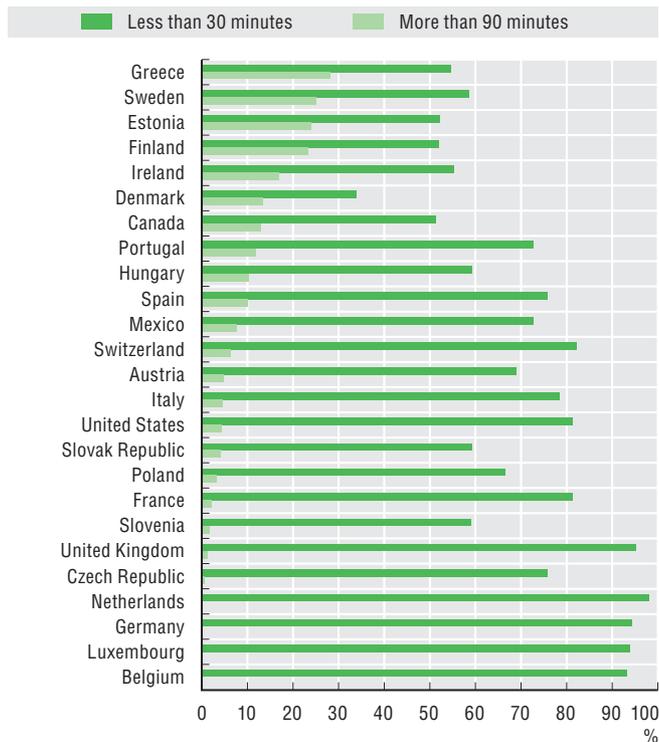
**Broadband Access:** No regional data available for Canada, Chile, France, Iceland, Israel, Mexico, New Zealand, Poland and Turkey.

### Figure notes

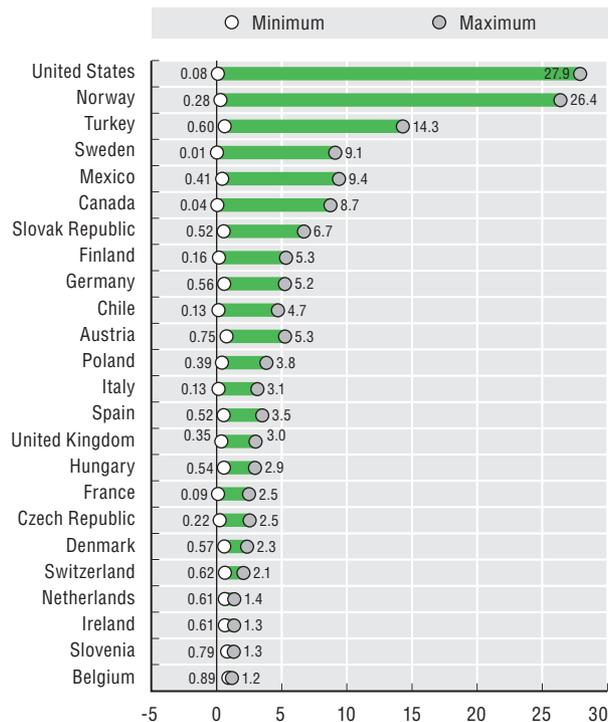
31.2: Network density is expressed as km of road network by 100 km<sup>2</sup>. The country value is equal to 1.

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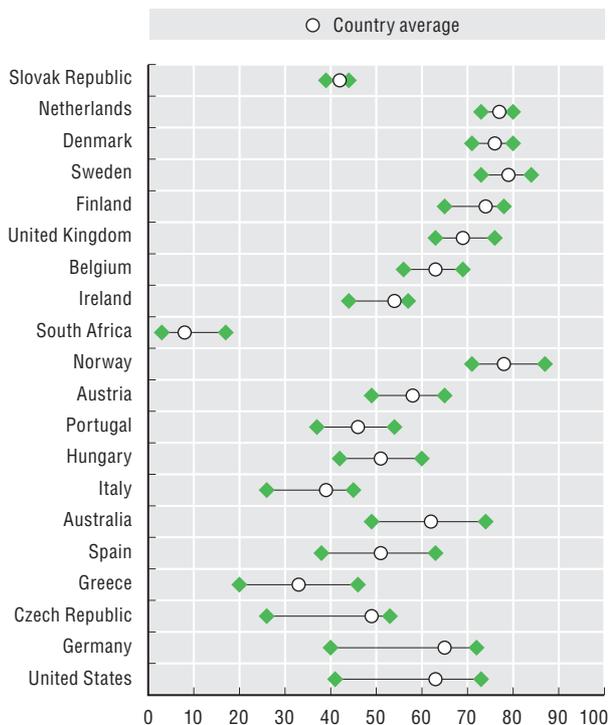
**31.1. % of population living less than 30 minutes and more than 90 minutes away from an urban centre, 2009**



**31.2. TL2 regional range of network density, 2009**



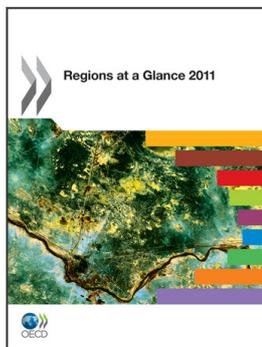
**31.3. TL2 regional range in households with broadband access, 2009**



**31.4. Spearman correlation coefficient between households with broadband access and share of population by regional type, TL2, 2009**



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