

# Summary

## ÖROK SERIES NO 203 – ÖROK ACCESSIBILITY ANALYSIS 2018 (DATABASE 2016) ANALYSES ON PUBLIC TRANSPORT AND MOTORISED INDIVIDUAL TRANSPORT

ÖROK commissioned accessibility models in 1997 and 2005 to determine accessibility indicators for motorised individual transport (MIT) and by public transport to investigate the quality of coverage with central facilities of the population in quantitative terms. The bmvit (Federal Ministry for Transport, Innovation and Technology) accessibility model was used in 2018 on the data from 2016 to calculate the accessibility data, which Verracon GmbH used to produce a new accessibility analysis.

The quality of coverage with central facilities was determined on the basis of the share of the population that can reach the nearest regional or supra-regional centres and educational facilities within a reasonable time using motorised individual transport or public transport. In this context, 30 minutes were assumed to be reasonable for regional centres and 50 minutes for supra-regional centres. This percentage constitutes the degree of accessibility.

The calculations are based on a 100 m population grid that represents the distribution of the population with 570,000 permanently settled cells. The targets are 194 regional and 46 supra-regional centres. Additionally, 2,461 educational facilities from different categories were used for the education strand. Accessibility by motorised individual transport was computed using the road grid of the Graph Integration Platform (GIP). For public transport, the schedules of ARGE ÖVV were used, with the foot paths to and from the stops being routed via the GIP grid.

With respect to motorised individual transport, 85% of the population is able to reach a supra-regional centre within 50 minutes, with the figures for the federal provinces ranging from 67% in Tyrol to 100% in Vienna. Regionally, the low values were found mainly in the inner Alpine districts (Lienz, Tamsweg and Murau) and in Waidhofen an der Thaya in Waldviertel and Jennersdorf in southern Burgenland. As regards public transport, the accessibility ratio is much lower at an average of 64%, although some federal provinces have even lower values such as Burgenland (43%), Styria (45%) and Tyrol (74%). In 16 districts (14%), it is not possible to reach a supra-regio-

nal centre within the time limits. These are located in inner Alpine regions as well as in other peripheral regions such as Waldviertel, southern Burgenland and Außerfern. All of the figures mentioned apply to a workday that is not a school day.

With respect to the supply of the population with regional facilities, the overall picture is better. 97% of the population can reach a regional centre within 30 minutes by motorised individual transport. The lowest value is reported for Tyrol with 88%. At the district level, the lowest values are found in Lienz (66%), Schwaz (70%) and Spittal an der Drau (71%). In 55 districts (47%), the accessibility ratio is 100%. Accessibility to regional centres by public transport is lower at an Austrian average of 72%. In this case, the figure (ex Vienna) ranges from 58% in Carinthia to 80% in Vorarlberg. Regionally, the lowest figures are found in peripheral, widely dispersed settlements such as Jennersdorf (11%), Rohrbach (27%), Deutschlandsberg (29%) and southern Styria (30%).

A central element for determining accessibility by public transport is how easily inhabitants can reach a means of transport, that is, if a stop is not too far away. 9% of the population are not able to reach a stop to connect to a regional centre within 1,250 m. If one excludes Vienna, the percentage is 12%. The lowest degree of accessibility by public transport is found in Styria where 19% of the population does not have any stops and the best connections (ex Vienna) are in Vorarlberg where only 2% are not connected. Districts with poor accessibility are Jennersdorf, Deutschlandsberg and the district of southern Styria as well as Völkermarkt. Accessibility in these districts is related directly to settlement structures and made more difficult when it is characterised by heavy sprawl. By contrast, in Vorarlberg accessibility conditions are better due to the fact that the population concentrates in the Rhine Valley and Walgau.

The differences in median travel times to the nearest centre are considerable between motorised individual transport and public transport. On average, the travel time to the next regional centre by public transport is 47% longer, and to the next supra-regional

centre 34% longer, even though with substantial regional differences. Thus, in Burgenland the median travel time to the next regional centre by public means of transport is 100% longer, while in Vienna it is 8% shorter. The magnitude of the difference in travel time and thus the appeal of public means of transport depends strongly on the existence of a high-speed railway connection. Accordingly, the regionally least attractive figures are found in the districts of Oberwart and Güssing in southern Burgenland, in Rohrbach in Innviertel and in Reutte in Außerfern.

Accessibility to educational institutions differs clearly by type of institution. A share of 90% of students of middle schools and of lower level of upper secondary schools can reach the next school by public transport within 30 minutes, while only 83% of students of upper level secondary schools or similar are able to. Only 66% of students of universities and colleges can reach their educational institutions within 50 minutes. Despite the improved availability of new colleges, there are still gaps in accessibility to tertiary education. In 14 political districts (12%), it is not possible to reach any university or college by public means of transport within the time period defined. Accessibility to institutions of higher education is very low in some peripheral districts. In 15 districts (13%), it is not possible for half of the 15 to 19-years-olds to reach an in-

stitution of higher education by public transport within 30 minutes.

The accessibility indicators were compared to the indicators of other studies. A clear relationship was found between accessibility to regional centres by public transport and the share of public transport used for travel to workplaces according to the accessibility survey "Österreich Unterwegs 2013/14". A comparable relationship was not found between educational institutions and educational choices. The cause is assessed to be the lack of freedom of choice of means of transport for many students. Furthermore, a relationship was ascertained between the difference in travel times by public transport and by motorised individual transport as compared to the degree of motorisation (car per inhabitant); this is an indication of the effects of an attractive offer of public transport. Another finding is the high correlation revealed between the accessibility of centres via public transport and population forecasts.

A comparison of the accessibility analysis with the accessibility indicators for the years 1995 and 2007 that may have shown the effects of change in the transport system was not possible due to the major methodological differences that result from the improved and more detailed model calculations.