United Nations ECE/TRANS/WP.6/2018/5

Economic and Social Council

Distr.: General
15 March 2018

Original: English

Economic Commission for Europe

Inland Transport Committee

Working Party on Transport Statistics

Sixty-ninth session
Geneva, 12-14 June 2018
Item 4 (f) of the provisional agenda
Data collection, methodological development and harmonization of transport statistics

Pilot Questionnaire on Bus and Coach Statistics

Note by the secretariat

I. Background

1. At its sixty-eighth session, the Working Party decided to continue the pilot questionnaire collecting data on bus and coach statistics. This pilot questionnaire was first approved by the Working Party in 2009, and then subsequently streamlined in 2013. The collection exercise was undertaken following work of the Task Force on Statistics on Transportation by Buses (WP.6/AC.6) which was active between 2006 and 2009, and resulted in a Statistics Handbook on Interurban Passenger Transport by Buses and Coaches (ECE/TRANS/WP.6/2009/1). One of the reasons that this task force was founded was that statistics for buses and coaches were not very detailed, with no distinction between urban and inter-urban transport, or often completely absent. In order to increase the visibility of the pilot data collection and perhaps to encourage a better response rate, the Working Party at its sixty-eighth session invited the secretariat to publish the data through the secretariat's statistical database.

Documentation

ECE/TRANS/WP.6/2009/1

II. Activities Undertaken

2. The secretariat added the necessary indicators to the database and published the results in December 2017. Due to the streamlining of the questionnaire that occurred as of the 2013 data collection, only data for 2013 onwards were disseminated. Further, a short summary

article[1] was written for the "UNECE weekly" newsletter, to increase awareness of the dataset and to highlight the data's relevance in monitoring the Sustainable Development Goals.

3. The secretariat has also conducted an analysis of bus and coach data availability and a cross-checking of the statistics compared to similar data already collected through the web common questionnaire (WebCoQ). Some additional derived indicators have been calculated too. These are described in the following sections.

III. Data Availability

4. The secretariat has assessed data availability of the bus and coach statistics. The following summary statistics are based on data received as of January 2018. As a reminder, the data asked for in the bus and coach pilot questionnaire are the number of passengers, total vehicle-km, number of journeys offered, seat-km offered, and passenger-km offered. Data for each of these are also broken down by activity as shown in Table below, which also shows the number of countries providing data on one or more indicators for each activity.

5. In total, 26 countries have provided data on one or more indicators since 2013: these countries are Austria, Belgium, Bulgaria, Croatia, Czechia, Estonia, Finland, France, Germany, Hungary, Ireland, Italy, Latvia, Lithuania, Malta, Netherlands, Norway, Poland, Portugal, Romania, the Russian Federation, Spain, Sweden, Switzerland, the former Yugoslav Republic of Macedonia, and United States.

6. The summary of each indicator's data availability by country is as follows:

- Journeys offered: only four countries (Belgium, Latvia, Portugal and Slovenia) provided data
- Seat-km offered: nine countries (Belgium, Estonia, Germany, Malta, Norway, Poland, Portugal, Sweden and the former Yugoslav Republic of Macedonia) provided data
- Passenger-km travelled: 23 countries provided data
- Passenger numbers: 24 countries provided data, making it the most reported topic
- Vehicle-km: 22 countries provided data.

[1] www.unece.org/info/media/news/transport/2018/new-data-shines-light-on-bus-and-coach-use-as-a-feature-of-sustainable-transport-systems-in-the-unece-region/doc.html

Number of countries reporting data on one or more bus and coach indicators by type of activity

National transport	**22**
Occasional national transport	15
Regular national transport	21
Urban regular national transport	17
Interurban regular national transport	17
International transport	**11**
International transport within country	3
International transport outside country	5
Occasional international transport	8
Regular international transport	11
Total of countries	**25**

7. Table shows the number of countries reporting data on at least one indicator for each of the activity breakdowns. As can be seen, a substantial number of countries have provided data for total transport and national transport, though the breakdown of urban versus interurban is not as well reported. Data for international transport are also less reported (this may not be collected at all or could be included in the national transport totals), although this may change given the increasing number of low-cost international service providers.

IV. Data Validation and Analysis

8. To provide a concise summary of bus and coach data availability and validity, most of the analysis below focuses on passenger-km, sometimes in combination with the other indicators. Passenger-km is one of the most widely reported topics, and is also one of the more useful indicators with respect to comparability with other modes of transport.

Comparing the bus pilot data with already collected data

9. Data for total national transport and/or total transport by buses and coaches from the pilot questionnaire were compared with those reported through the web common questionnaire (WebCoQ) in the road transport measurement module, specifically in indicator B-V-01-37-75.3-0.0 concerning passenger-km by motor coaches, mini coaches, buses, mini buses and trolley buses (hereafter referred to as the main bus figure). As a reminder, the bus pilot data passenger-km are expected to cover regular and occasional bus journeys, whereas the passenger-km for the main bus figure would cover this plus minibus journeys or other private vehicle journeys that would not be included under passenger cars.

10. Thirty countries had data for passenger-km in one or both instances. These two datasets have differing scopes, depending on the country (see below). If a country followed definitions perfectly, the main bus figure would be bigger than the bus pilot data due to the inclusion of private minibuses in the main figure, which is in theory out of the scope of the bus pilot. Nevertheless, the already-collected indicator acts as a useful yardstick to compare the bus pilot data against.

11. In seven out of the 30 countries, figures were identical or very similar for both indicators, which is a positive indicator that the bus pilot questionnaire is collecting statistics of a similar quality to the established data collected.

12. Ten countries out of the 30 had data for the main bus figure but not for the bus pilot. The secretariat could in the future liaise with these countries to enquire if the main bus figure is an appropriate figure to add to the bus pilot dataset.

13. Two countries, Romania and Switzerland, had data in the bus pilot but not for the main bus figure. No metadata were provided in either case, and it is possible that these numbers are coming directly from e.g. a specific public transport survey that does not consider mass-mobility private transport vehicles that operate on roads.

14. Six countries (Belgium, Finland, Germany, Latvia, Lithuania and Poland) had passenger-km values that were measurably higher for the main bus figure than for the bus pilot. This would be the expected pattern if definitions were correctly followed, as noted above. But due to the very different situations in each country, this could also be statistical noise resulting from a similar concept being collected in different ways. Poland showed the largest difference between the main bus figure and the bus pilot figure, and this was clearly explained in the metadata: the main bus figure includes urban transport, whereas the bus pilot data excludes urban transport, and in addition only covers enterprises with more than nine employees.

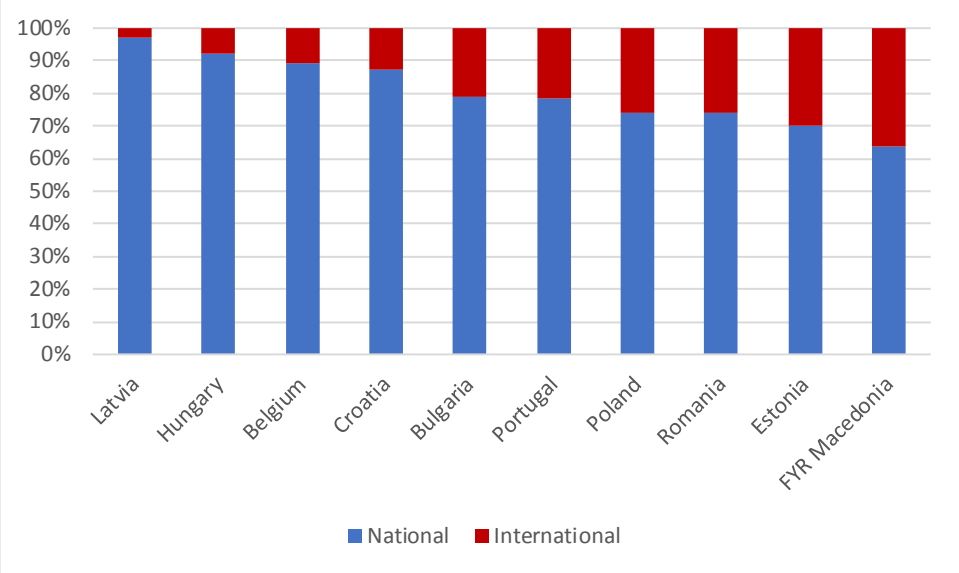
15. Finally, five countries (Bulgaria, Czechia, Hungary, Portugal and the Russian Federation) had the bus pilot figure higher than the main bus figure. In the case of Bulgaria and Portugal, the metadata indicated that the main bus figure was only “public transport”, indicating that private coach journeys were excluded. For Czechia, the main bus figure only covered urban transport. In the case of Hungary, the main bus figure excludes international transport and minibus journeys. For the Russian Federation, which showed the largest difference between the main bus figure and the bus pilot, no metadata were provided.

16. The following analyses are all based on data from the bus pilot questionnaire, rather than comparisons with other WebCoQ data.

Breakdown of national versus international passenger-km

Figure I

Breakdown on national versus international bus passenger-km, available countries (2016 or most recent year)



Note: Belgium: international transport refers to the passenger-kilometres driven outside the country. Croatia: only interurban transport. Hungary: data from enterprises with more than 49 employees. Latvia: regular transport only. Portugal: public transport only.

17. For the 20 countries that provided relevant data, nine provided data on both national and international transport. As can be seen in Figure I, the share of international transport within total bus transport for these countries varies between 2 percent (Latvia) and 27 percent (the former Yugoslav Republic of Macedonia).

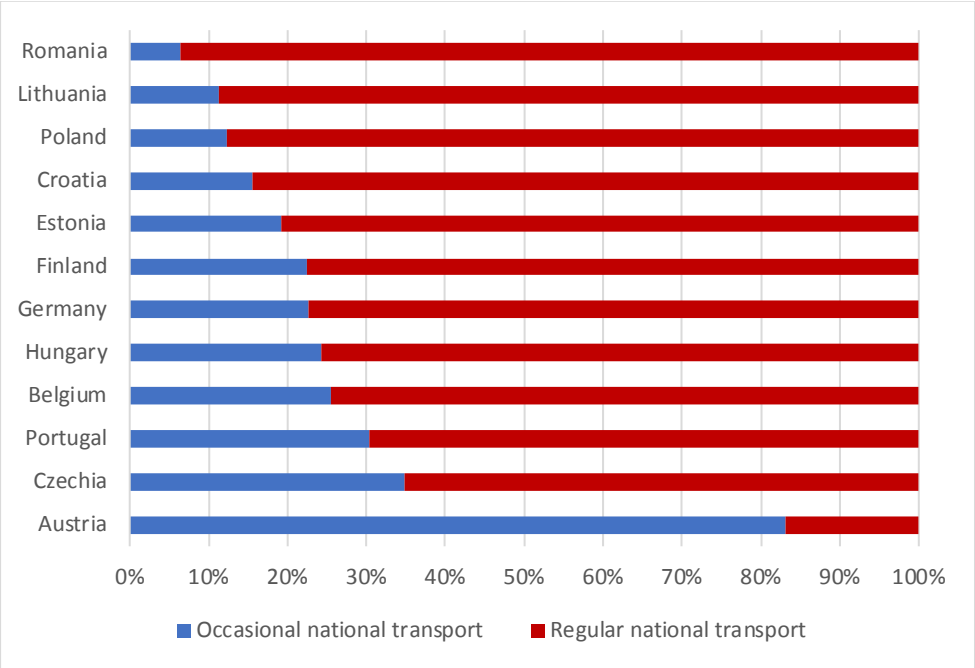
Regular versus Occasional Transport

18. A fundamental issue in collecting bus and coach statistics is whether the collection covers regular journeys, occasional journeys, or both. Regular bus transport can be thought of as public transport in the more accessible sense, in that buses run according to a given timetable. These data may often be collected for purposes not directly related to official statistics. For example, data may be estimated based on seat-km offered and average occupancy rates, in order to ascertain the appropriate level of public subsidy to be given to the operator.

19. Occasional transport is, by definition, much more of a challenge to collect. This involves surveying a wide selection of companies (ranging from large companies with hundreds of buses to small companies who may have a single bus which supports their principal activity). It is thus unsurprising that some countries specify explicitly that the data they have collected excludes occasional journeys, or that the data only cover enterprises with more than a certain number of employees (e.g. Hungary and Poland).

20. For those countries that have provided a breakdown between the two, the share of occasional journeys extends from 5 percent in Romania to 35 percent in Czechia (see Figure II). Austria is a large outlier in this dataset, with an occasional value of over 80 percent, and there is no documented reason for this. That regular bus transport typically is the larger part of bus transport is unsurprising, particularly when journeys in and around urban areas are correctly included.

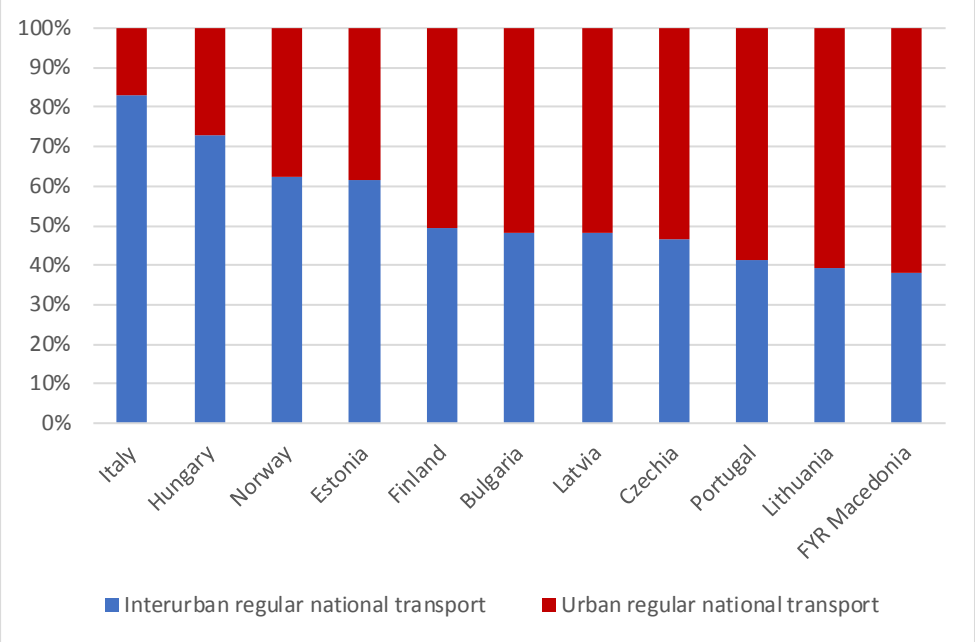
Figure II
Breakdown of national bus passenger-km between occasional and regular transport, 2016 or latest year



Note: Belgium: regular transport is public transport and school transport. Croatia: only interurban transport. Poland: only enterprises with more than 9 employees and excludes urban transport. Portugal: mainland only, and only public transport.

Urban versus inter-urban transport

Figure III
Breakdown of regular national bus transport passenger-km by urban versus interurban, 2016 or latest year



Note: Hungary: data from enterprises with more than 49 employees. Norway: urban data refer to the 13 largest cities only.

21. Of the eleven countries that provided any breakdown between urban and interurban passenger-km, four (Italy, Hungary, Norway and Estonia) had a larger inter-urban share, whereas the remaining seven (Finland, Bulgaria, Latvia, Czechia, Portugal, Lithuania and the former Yugoslav Republic of Macedonia had a larger urban share (see Figure III). Again, consulting the metadata is of use; Norway's urban passenger-km, for example, only cover the largest thirteen cities and thus not all urban areas (although what constitutes an urban area will be somewhat subjective).

Growth over time

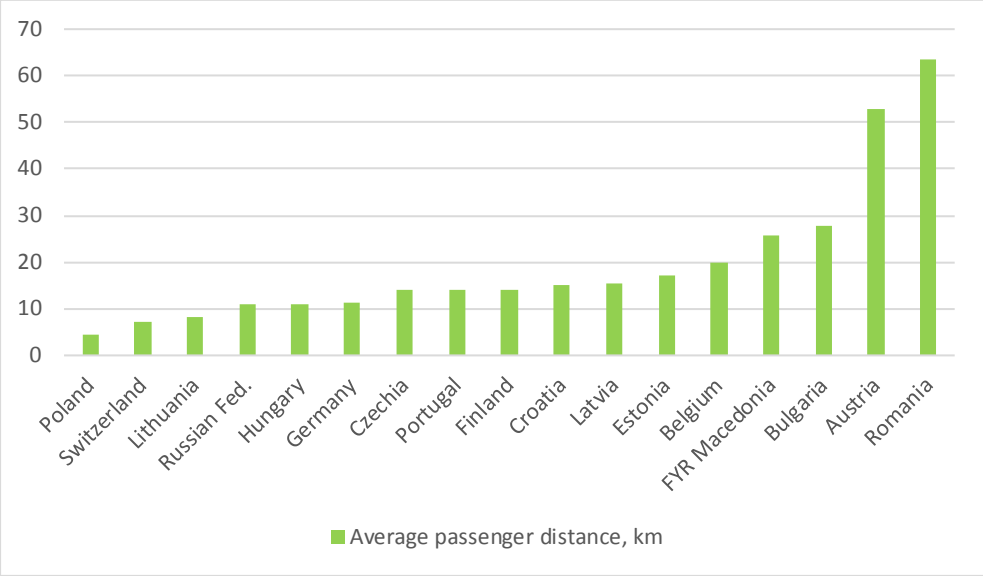
22. As the available data are currently limited to between 2013 and 2016, making meaningful inferences about the change in passenger-km over time is not feasible. Nevertheless, of the sixteen countries with the data available, twelve saw an increase in passenger-km over the period, the largest being in Bulgaria (18.8 percent). Four countries saw a decrease over the period, Lithuania seeing the biggest drop of 6.3 percent. Taking all available data together, a 3.2 percent increase in bus passenger-km from 2013 to 2016 was observed.

Average passenger distance

23. As the collected indicators include both passenger-km and total number of passengers, it is possible to calculate an average passenger distance as a derived indicator. This would likely vary significantly across countries, due to both their differing population densities but also to the differing definitions for bus transport used (whether covering urban or interurban journeys, or both for example). In the data, an average bus journey ranges between 4.6 km in Poland to 63km in Romania. In the case of Poland, metadata record that the passenger-km figure does not include urban transport, and so the indicator is skewed as Poland's number

of passengers includes urban passengers, including those carried by trams and trolleybuses. In any case, these averages are likely the residual of averaging a large number of short, urban journeys with a smaller number of longer distance inter-urban journeys.

Figure IV
Average bus national transport passenger distance, 2016 or latest year

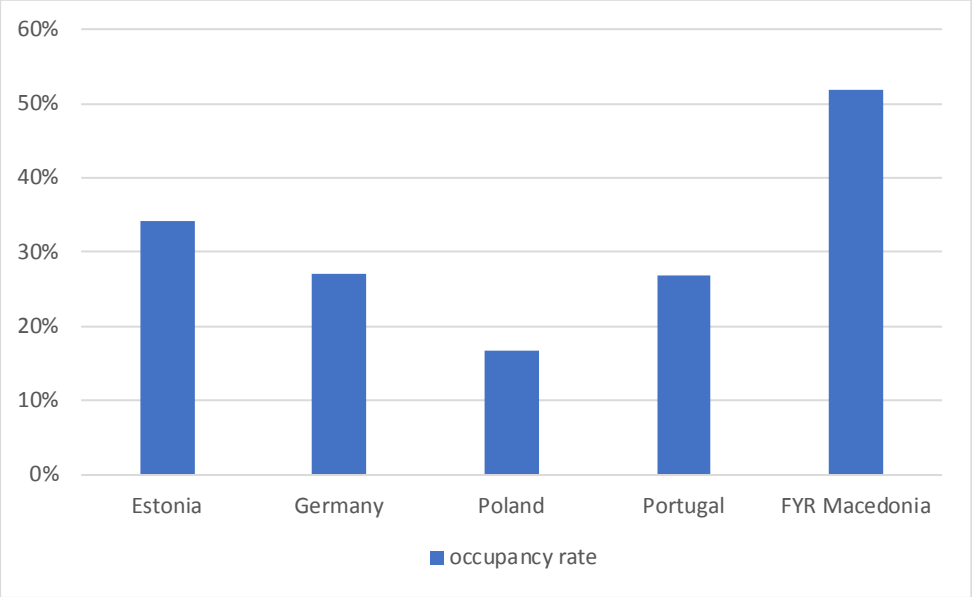


Note: Consult metadata for passenger-km and passenger numbers at http://w3.unece.org/PXWeb/en

Vehicle occupancy and occupancy rate

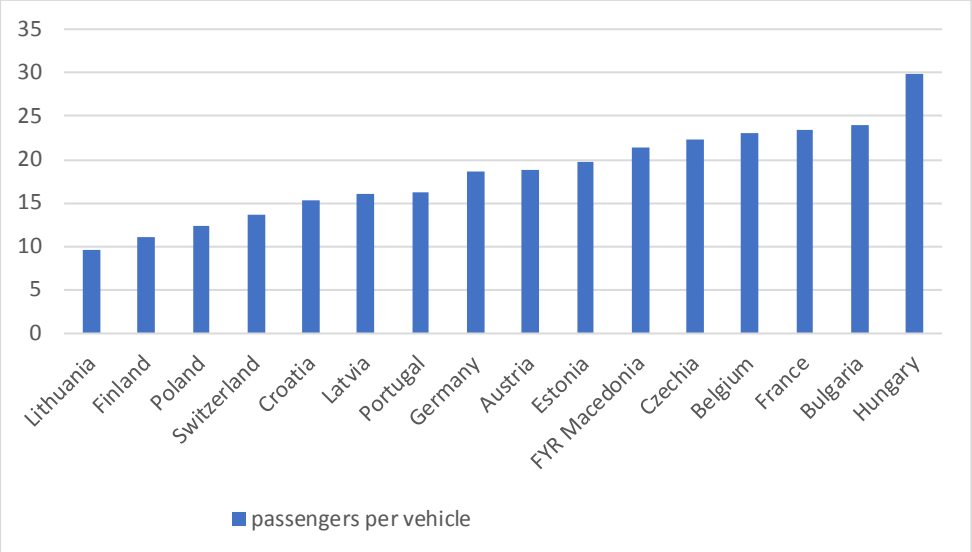
24. By combining passenger-km separately with seats-km offered and vehicle-km, it is possible to calculate both a vehicle occupancy rate and a passengers-per-vehicle rate respectively. Data for seat-km offered were relatively scarce, and thus this indicator could be calculated for only five countries, ranging from 17 percent in Poland (as mentioned above the passenger-km figure does not include urban journeys) to 52 percent in the former Yugoslav Republic of Macedonia.

Figure V
Average bus national transport occupancy rate (percent), 2016 or latest year*



25. Data for vehicle-km were better reported, and thus the passengers-per-vehicle rate was calculated for seventeen countries, ranging from 9.7 in Lithuania to 29.9 in Hungary.

Figure VI
Average bus national transport passengers per vehicle (passengers per vehicle), 2016 or latest year**



* Consult metadata for passenger-km and seat-km at w3.unece.org/PXWeb/en
** Consult metadata for passenger-km and vehicle-km at w3.unece.org/PXWeb/en

V. Possible Uses of the Data

26. The newly-published data can provide valuable insights into how passengers currently use buses and coaches, the split between various types of bus transport, and where there is further potential capacity for more bus usage. Bus travel can be a low-cost, safe, quick and sustainable way of transporting passengers into and around cities, and thus can be a tool in implementing the Sustainable Development Goals, notably goals 3 and 11. Combining the bus and coach data, in particular the passenger-km numbers, with those of other transport modes can give policy makers the tools to adequately assess the current situation and make future transport plans based on evidence.

27. Future analyses could also combine these bus passenger-km data with road safety data, energy consumption data or even average journey times to make further insights into how bus transport compares to other modes.

VI. Methodological Challenges and Future Work

28. The Working Party may wish to recall that at the sixty-sixth session in 2015, the representative from DG MOVE invited the Intersecretariat Working Group to clarify some concepts used in the Common Questionnaire concerning bus transport. For example, whether trolleybuses should be included in total passenger-km or vehicle-km. As of now, this appears to depend on the country, and is exacerbated by the lack of formal definitions for some of the bus and coach terms. In the current revision process of the Glossary for Transport Statistics, these definitions will be considered further.

29. The Working Party may wish to revisit the handbook on bus and coach statistics that was produced in 2009 by WP.6/AC.6. In particular, further methodological guidance on what should be included within these data could be developed, and further country examples of the surveys used and any other data collection techniques (such as new big data sources) could be collated.

Documentation

ECE/TRANS/WP.6/2009/1

VII. Conclusion

30. The Working Party may wish to discuss the analysis of the bus data and consider further applications for the dataset; decide on whether to make this data collection permanent, or continue with it in pilot form; or request that countries provide better metadata so it is clearer what the data refer to.