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Statistical challenges faced by member States

Transport statistics for Tracking the Impact of COVID-19

Note by the secretariat*

I.   Background

1.   Since the outbreak of the COVID-19 epidemic, much interest has been expressed on using transport data to measure the impact of changes in behaviour and government-mandated lockdowns on transport systems. Many of these radical changes will only be apparent on a month-by-month basis. Yet most transport data collected at the international level is on an annual basis, and furthermore the time lag on data collection, first by the member States and then collation by international organisations, means that most 2020 data may not be published until early 2022. This is clearly insufficient for a rapidly evolving situation. The secretariat therefore decided to pool all relevant data sources, taken directly from national statistics offices (and other sources on occasion), on a single wiki page. This page allows interested data users to see all relevant transport data in a single location, and means that data on different sources can be quickly compiled. This document sets out the results and lessons learnt, with a particular focus on road safety data.

II.   Secretariat response

2.   With member States overburdened with trying to produce their regular statistical outputs at a time with additional pressures and many staff working remotely, the secretariat did not think sending an emergency questionnaire to countries would be welcomed, particularly as the situation is evolving rapidly and real-time updates would be necessary. Instead the secretariat decided to trawl websites of national statistics offices, in addition to well trusted data sources (sometimes at a non-national level) from other places. For example, Transport for London and the New York Police Department were both used as sources for road traffic accident fatalities for London and New York City, respectively.

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*   The present document was submitted after the deadline in order to reflect the most recent information on the evolving COVID-19 crisis.

3.   The data collated were primarily indicators that are already disseminated on the UNECE statistics database. For example, road safety figures, passenger numbers and vehicle registrations were collated. Certain data outside the normal scope of UNECE transport statistics were collated too, as they were deemed to be relevant to the task at hand. Therefore, aviation, maritime and port statistics were also included when relevant. In addition, traffic counts at specific places were disseminated by some statistics offices.

4.   The data were all published in a table on a wiki site[1] developed by the secretariat and updated on a rolling basis. The secretariat also increased the interest in these data sources by providing some analysis in short blog posts. The data were used in blog posts by the ECE Executive Secretary, and by the United Nations Special Envoy for Road Safety Mr. Jean Todt in media interviews, among other users.

III.   Statistics examples

5.   There were striking examples of monthly changes to some transport datasets. For example, in March European Union new vehicles registrations fell by 50 per cent year-on-year, according to the European Automobile Manufacturers Association. And data for the United Kingdom showed that passengers on London's tube network were down by over 90 per cent on some days in March and April.

6.   In addition to these striking transport changes, road safety was seen as a particularly important domain to monitor. A large decrease in road traffic accident fatalities can establish a "new normal" in the eyes of the public and governments, proving that road traffic accidents are largely preventable. Part of achieving this is an overall reduction in traffic volumes, providing less exposure, but also from a shift from passenger car journeys to walking and cycling.

7.   Overall summaries of the impact on road safety of the COVID-19 shutdowns are hard to make, as they occurred at different severities at different times across countries and cities in the ECE region. But it is notable that many countries and cities saw some of their lowest monthly fatality figures in modern times.

8.   In France, where a full lockdown started on 17 March, April saw a 56 per cent year-on-year drop in fatalities (Metropolitan France only), with the total of 109 fatalities far lower than any monthly fatality figure in the ECE statistical database going back to 1993. Ireland saw its lowest monthly fatality figure for April 2020 since May 2018. While Israel did not see any historic monthly lows, during each month of 2020 the number of fatalities has thus far been lower than the corresponding 2017-2019 figures for that month. Norway's April figure was a 54 per cent reduction on April 2019. Spain saw one of the biggest dips in fatalities in April, with a 63 per cent year-on-year reduction.

9.   Greece (as of writing) only showed data up until March 2020, which was still the lowest monthly fatality figure (24) going back to at least 2010. Germany's March figure was a 33 per cent year-on-year reduction, and the lowest monthly total since at least 2015. Sweden, which implemented much less strict measures than other countries, saw fatalities in April typical of the previous five-year range. Finland in April saw a 30 per cent| year-on-year reduction, although there were less deadly months as recent as December 2019 (not adjusting for seasonality). Latvia has disseminated quarterly rather than monthly data. 1Q2020 was a low but not a historically low value, and the quarterly figure will include months not under lockdown.

10.   In addition to country data, in order to have the most wide-ranging evidence of trends, timely city data were also explored. Transport for London (United Kingdom of Great Britain and Northern Ireland) and the City of San Francisco (United States of America) also were included in the data collation exercise. Of particular note were data for New York City,

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[1] https://wiki.unece.org/display/DSOCIOT/Data+Sources+on+Coronavirus+impact+on+transport.

compiled by the New York Police Department (NYPD) and published by the City, which gave data for all traffic crashes recorded by the NYPD in a format that enabled automatic downloads and manipulation of the data using standard computer software.

11.   These reductions in fatalities are undoubtedly great news. But they need to be seen in the context of the much lower traffic levels. Some countries could compare the fatality reductions with the reductions in traffic and showed that actually the fatality rate (in terms of deaths per vehicle-kilometre) had increased (data for the United States National Safety Council found this to be the case for example). A probable cause for this was that the reduction in congestion encouraged some road users to increase their speed.

IV.   Dissemination types

12.   The data that were disseminated came in a variety of types. These ranged from statistics disseminated in PDFs (sometimes individual PDFs for each month and no comparisons with previous months or years), simple excel files, interactive dissemination cubes and also Application Programme Interface (API) enabled data structures. This wide range of file structures did not pose significant problems in producing graphs of multiple months, but if the exercise were to be repeated the time spent on manually copying and pasting numbers would soon become cumbersome, especially if there were many more countries than the current ten that publish data (that were easily found).

V.   Discussion

13.   It seems that the ten countries listed above are very much the exception. The majority of ECE member States do not produce provisional road safety figures on a rolling monthly basis. Some produce quarterly data, and some sub-national entities produce more timely data. A question for delegates may be if there is value in putting more resources in to producing road safety statistics in a more timely way. In pre-lockdown times, year-on-year changes in fatality numbers were often of a magnitude that was not particularly noteworthy. But over the previous few months, and possibly over the coming months and years under a "new normal", there may well be much bigger interest in quick, short-term indicators of road safety.

14.   A debate about timeliness will also need to weigh the benefits of quick data against the risk of lower accuracy in the figures. A monthly fatality figure that follows the normal road traffic accident fatality definition of death within 30 days of the accident will by definition not be completely final until at least 30 days after the reference month. And yet a small decrease in accuracy is arguably worth a big increase in timeliness and thus impact, especially if there has been a historically large change on previous trends. A further step to maintain statistical credibility could be to separate these provisional monthly statistics from the finalised dataset (either in national databases or in a collated international database).

15.   Delegates are thus invited to:

- share any timely road safety data sources that are not yet included on the wiki;
- discuss their thoughts about publishing a collated "flash" road safety dataset at the international level;
- discuss their national dissemination practices, particularly with regards to putting out machine-readable formats, noting the potential benefits to data users.