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Urban Mobility in Changing Times

Potentials of Sustainability from a "New Normality"

A Show Case

in Dresden, Germany

Part of the European Research Project:
Travelviewer – Data for Low-Carbon Sustainable Transport Systems

Dresden, 16 September 2020
https://tu-dresden.de/in-bewegung

DRESDEN IN BEWEGUNG

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Prepared by

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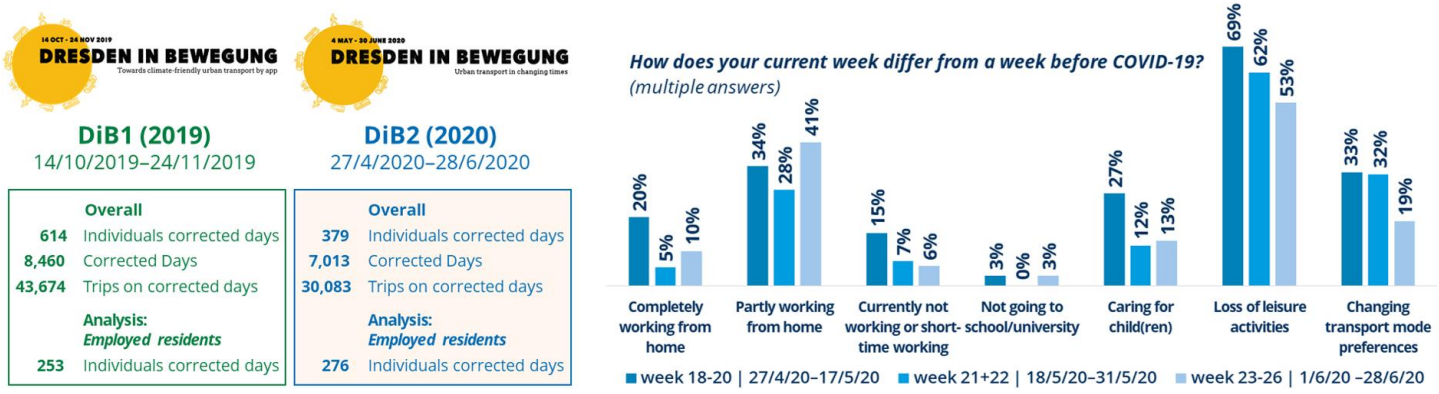

Figure 1: Samples and Survey Periods (a); changes in everyday life (b)

In autumn 2019, the City of Dresden took part in a broad-based data collection on travel behaviour using the smartphone app TravelVu. Conducted in parallel in Norway, Denmark and Italy, the survey (DiB1) was part of a European research project "Travelviewer – Data for Low-Carbon Sustainable Transport Systems". To capture travel behaviour specifically influenced by the COVID-19 lockdown situation and its reliefs, a second survey wave (DiB2) was commissioned in Dresden in spring 2020. Figure 1a shows the key facts of both surveys, based on non-probability samples and named "Dresden in Bewegung" (DiB, Dresden in Motion) in German.

During the Corona lockdown, it could be observed clearly that people were travelling less. But how do people behave since Corona-restrictions have slowly been lifted? Do they return to familiar travel patterns or rather develop new ones instead? Could these behavioural changes lead to more sustainable transport, and thus to a lower climate impact? In order to find initial answers to these questions, the samples of employees were analysed for both surveys. From the literature we know that the behaviour of this group has a major impact. For the COVID-19 survey, three periods were defined, which differed in the extent of the lockdown relief.

Figure 1b illustrates the changes that the pandemic situation has brought in people's everyday lives—work, childcare, leisure, transport modes. It also shows that these Corona impacts have decreased by the end of June 2020.

The out-of-home rates remained stable at 95 percent in autumn 2019, during May as well as June 2020. Changes occurred in the trip rate: while it was lower in early May, the rate jumped back to pre-crisis level by the end of May and in June (Figure 2a).

Figure 2b depicts the modal split—calculated on the number of trips. The results show that the share of public transport (yellow) is quite low in the beginning of May, but rises again by the end of June (remains below the level of 2019). Bicycle share (green) remains high in May and continues to rise until the end of June (and is higher than in 2019). In addition, we see a continuous decline in private car travel (red) from early May to late June 2020 (and below the share of 2019).

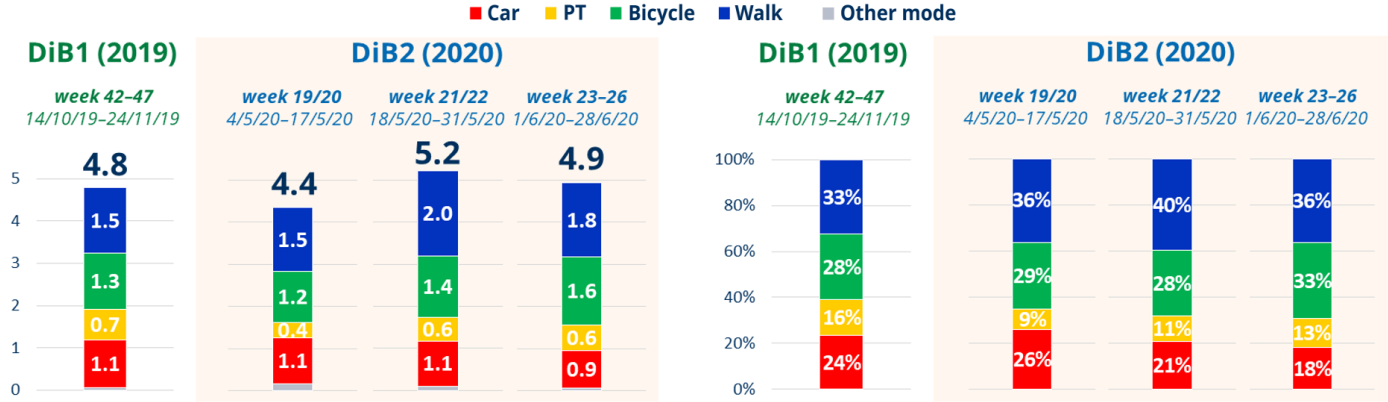

Figure 2: Trip rate (a); modal split by trips (b)—employees out-of-home, on mid-week days (Tue–Thu)

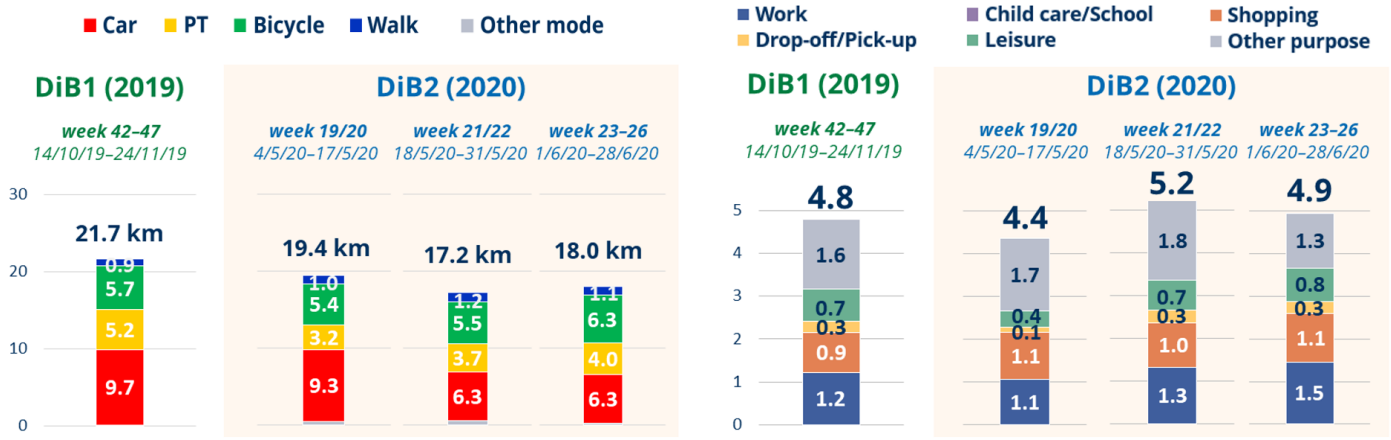

Figure 3: Trip distances (a); trips by purpose (b)—employees out-of-home, on mid-week days (Tue–Thu)

Similar tendencies can be seen for the trip distances (Figure 3a). The 2020 survey numbers indicate comparably short public transport distances (yellow), longer distances by bicycle (green), and a decline in private car distances (red). The daily distances are overall shorter than in 2019.

Looking at the trip purpose (Figure 3b), it turns out that trips to workplaces (blue) have increased from the beginning of May to the end of June 2020—the number for June is even higher than in autumn 2019. Concerning leisure (green) and drop-off/pick-up activities (yellow), the numbers for June 2020 are equal to 2019, that means significantly higher than at the beginning of May.

The daily course of trips (Figure 4) illustrates the dynamic increase of bicycle use, the overall decrease in private car use, and the flattened demand in public transport during the lockdown situation (and the weeks after).

To conclude: One of the advantages of app-based non-probability travel surveys is their flexibility. Therefore, it was possible to complement the Travelviewer survey of 2019 with a survey during the pandemic situation in May and June 2020. The combination of both surveys provides interesting insights into the changes in travel behaviour as a result of the Corona situation. The observed changes show paths to a more sustainable transport, and thus to a lower climate impact. On the one hand-side, we see constant out-of-home-rates and rapidly recovered trip-rates. Additionally, we know about the significant drop in public transport use during the pandemic situation. On the other hand-side, we observe an increase of active mobility—walking and cycling—and a decrease in private car use. We notice the slight recovery in the use of public transport. Daily distances are overall shorter post-Corona. Demonstrated by the Corona situation, modern working time and workplace organisation offer the potential for flattened daily courses in private car use or public transport. This may lead to lower infra-structure costs and more space for climate-friendly active mobility.

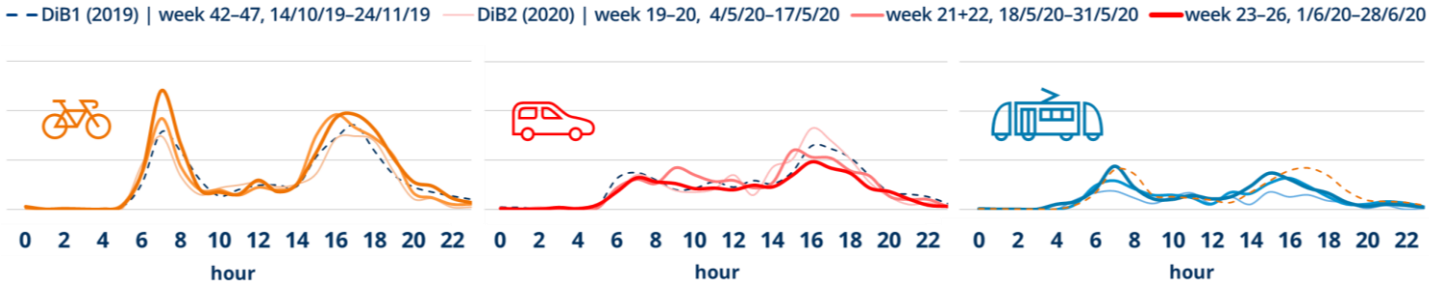

Figure 4: Daily course of trips by mode—employees out-of-home, on mid-week days (Tue–Thu)