



GOOD PRACTICES RELATED TO COVID-19 AND PUBLIC TRANSPORT



CISMOB - Cooperative information
platform for low carbon and sustainable mobility

ABSTRACT

This report presents an overview on the COVID-19 pandemic impacts on mobility in the regions within the CISMOB Partnership, and which type of measures governments were forced to implement to avoid the spread of the virus. Public transport was greatly affected since people considered its use a high contagion risk, resulting from an unprecedented decline in demand and revenue. Different good practices were implemented in regions to improve the trust on public transport services.



Introduction

The COVID-19 pandemic has been posing profound effects on lifestyle and travel worldwide, resulting in an unprecedented decrease in air travel and an increase in teleworking, that is seen as quite common nowadays. Governmental measures included mobility restrictions, lockdowns, and shutdowns of economic sectors. Recommendations of promoting physical distancing and avoiding gatherings were also set to minimise the spread of the virus.

Travel behaviour changed to refrain from travelling in order to reduce exposure, and in many countries, it was found that workplace-related movements have been reduced. This situation had an impact on all transport modes, particularly in urban areas (de Palma, Vosough, and Liao 2022). Public transport has taken the hardest blow due to low demand during the core phase of the pandemic. This resulted in an unprecedented decline in overall demand and revenue (Tirachini and Cats 2020).

Key questions that are fundamental for improving mobility policies include:

- what can we learn about mobility under unprecedented conditions?
- which measures should be put into place under similar conditions?
- can we consider a new normal trend in travel behaviour?
- will these changes remain in the near future?

Most of the implemented measures to contain the spread of the virus affected the public transport environment and understanding the various approaches to public transport use adopted in different regions can be relevant to help regions adapt to such uncommon conditions.

The CISMOB Partnership gathered together to understand these issues and how each region adapted to the pandemic-related effects in terms of mobility. Although the core phases of the pandemic had a direct impact on the first months of interregional cooperation, CISMOB partners took advantage of several online meetings to discuss and learn from each other how regions are tackling the challenges and difficulties and how ICT can be considered an ally in encouraging the use of public transport, improving confidence among potential users, and improve the travel experience of citizens.

Public transport issues

There is a general idea that public transport stations and the use of public transport can pose a high risk for the COVID-19 contagion. In particular, public transport users find themselves in a very limited and confined space, and it usually happens that the level of passenger occupancy in public transport vehicles and stations is high, and crowded spaces are considered an added risk of becoming infected (de Palma, Vosough, and Liao 2022; Tirachini and Cats 2020).

Governments across Europe took different measures and made different recommendations to try to avoid the spread of the virus. Key preventive actions were:

- physical distancing suggestion or imposition
- compulsory face covering in public places
- forbidden social gatherings
- suggestion to avoid unnecessary travel
- discourage the use of public transport
- encourage citizens to travel outside the rush hours
- encourage citizens to minimise close contact on daily mobility routine (e.g., shift to biking, walking)
- recommend reducing public transport vehicles' capacity

Besides affecting population lives, most of the recommendations and regulations set by regions affected public transport both in terms of demand and revenue.

In fact, reducing the “risk of infection” has become one of the attributes that people take into account regarding mode choice decisions. The idea of high risk of exposure to the virus in public transport brings a significant reduction in its usage during the pandemic. The perception that public transport is associated with safety issues affects people’s mobility preferences (Aaditya and Rahul 2021). In contrast, using private vehicles is increasing in some cities (de Palma, Vosough, and Liao 2022), in part due to the safer conditions. Moreover, data suggest people are less likely to use ridesharing and public transport, and car ownership might still increase, ending up to be the largest long-term effect of COVID-19 (Furber et al. 2021).

However, various studies have focused on analysing the effects of different actions on public transport safety and ended up concluding that as long users take proper precautions such as leaving one seat available out of two to ensure physical distancing and wearing a mask are effective (Sam Schwartz Consulting 2020; Zhou and Koutsopoulos 2021)

Since some studies show that the demand for active modes including cycling and walking has an overall increase, it can therefore be the right time to take some action towards sustainable mobility. City planners can seize the opportunity to define more sustainable mobility planning, place positive incentives for active modes, promote all conditions for efficient multimodal journeys, and gather efforts to improve infrastructures to allow and attract more environmentally-friendly modes of transport.

Public transport usage over time

The variation in the use of public transport hubs is illustrated in Figure 1 (based on Google Mobility Reports data). The baseline for the data is the median value for the corresponding day of the week, during the five-week period between January 3 and February 6, 2020 (Google LLC 2023). Due to a lack of data, there are missing values but a general trend can be inferred.

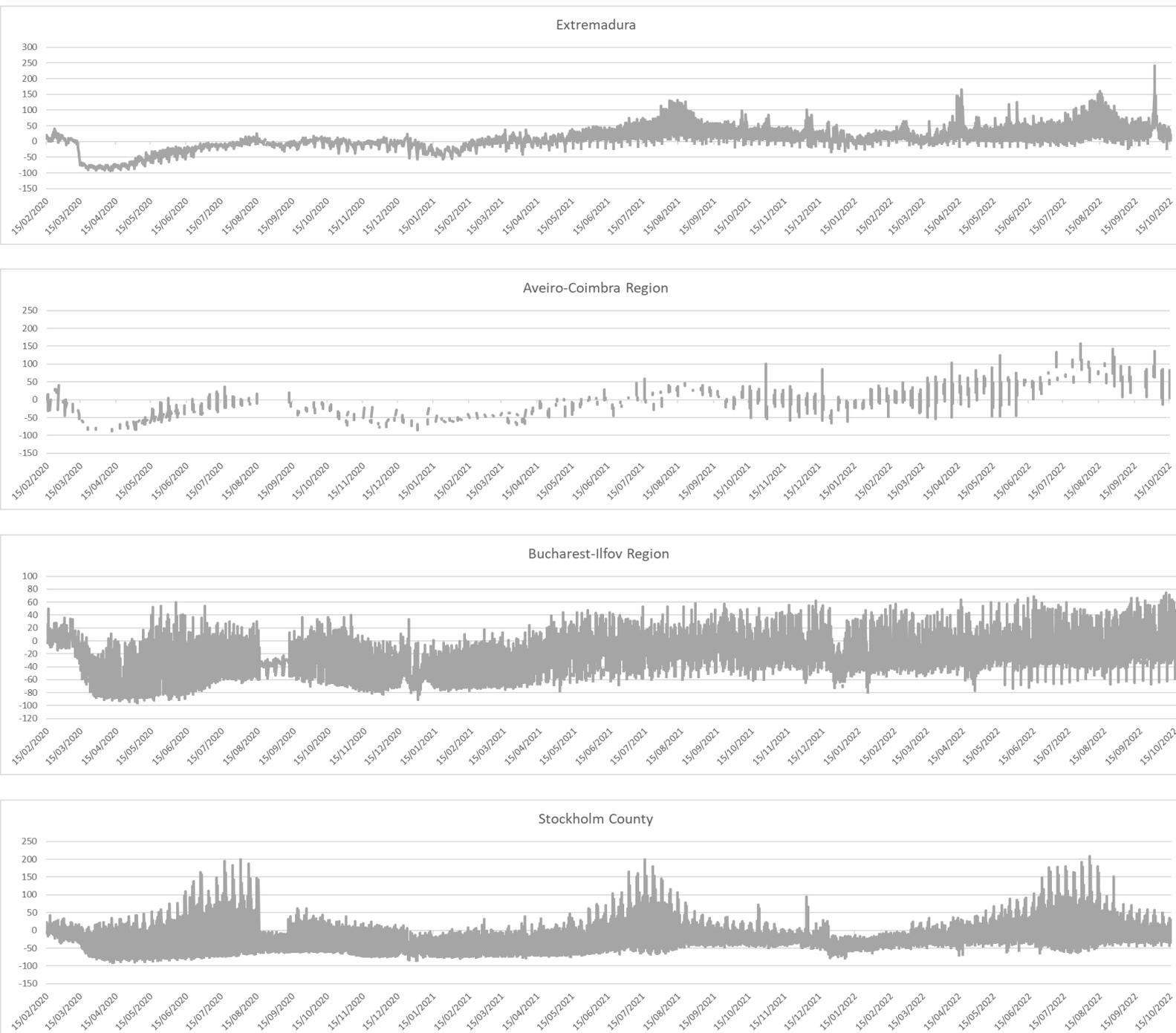


Figure 1: Variation of visitors/users in public transport stations.

All regions had a sharp decline in public transport usage right after the initial lockdown period, and the number of trips dropped drastically. On average, public transport operated at a 20-40% level, where the smaller difference was found in Stockholm. The relaxation of movement restrictions and the relatively low levels of infections during the summer of 2020 let people travel a little bit more. However, it was followed by a new resurgence period around Christmas 2020, in which stricter measures were imposed again. Higher mobility levels were found in the summer of 2020 and 2021 for all regions when restrictions on movements were released, and people were able to travel more, and tourist destinations reached higher levels.

The sector seems to be slowly recovering, but average mobility levels in the CISMOB regions have remained around 85-95 % compared to baseline, showing a decline in public transport usage even after approximately 3 years since the outbreak.

Since the beginning of the pandemic, it has been more common to work from home, do online shopping, and thus, an overall reduction in movements can be observed. This may also be one of the reasons for public transport has not recovered to pre-pandemic values. Various studies agree on the fact that the demand for public transport in the “new normal condition” is still less than that before COVID-19 and might never come back to the previous normal (de Palma, Vosough, and Liao 2022).

Good Practices related to COVID-19 and Public Transport

The required physical distancing makes high-density public transport a particularly risky environment. Working with the Interreg Europe community, the IE Policy Learning Platform collected around 20 good practices related to COVID-19 and public transport and devised a typology of measures that can be introduced, namely:

1. Increasing transport capacity by raising the number of buses and trains in circulation,
2. Limiting ridership to certain users only, such as the dedicated buses and trams for vulnerable people,
3. Shifting demand away from peak times;
4. **Helping riders to make choices that alleviate crowding by providing information on crowding.**

In the last point, information and communication technology (ICT) systems can play a key role in providing real-time information to people, which may be fundamental for behavioural change.

Real-time information platforms for public transport through websites and apps that can provide information useful for planning journeys showing the best route and connections. In particular, information regarding departure and arrival times, vehicle crowding, and the ticket cost of the desired trip are key features for planning a journey.

Following these examples, each region of the CISMOB consortium has promoted sustainable transport during the COVID-19 pandemic acute phase. For each typology presented before, the CISMOB consortium classified their good practices as reported in the following table. As can be seen, there is still room in CISMOB regions for further improvement regarding implementing ICT measures to make public transport more attractive and safe.

	INCREASE	LIMIT	SHIFT	HELP	SAFETY	CONFIDENCE
Águeda		Limit of 2/ 3 of capacity in public transport	Shops open only at 10 AM.		Mandatory use of Mask in public transport	
Bucharest	<p>The number of vehicles on congested transport lines has increased, and buses have been redistributed from unused lines to congested ones.</p> <p>New transmission lines have been set up for areas not covered by the transmission network</p> <p>The public transport network in Bucharest was reorganized to optimize the lines and improve the transport frequencies</p>	<p>The movement of people outside the home between 22.00 and 05.00 was limited only to professional or emergency activities.</p> <p>There were no limitations on bus capacity,</p>	<p>Public institutions have been forced to shift their work schedule for employees so that they can start work at three different times, to avoid overcrowding and reduce the risk of infection.</p> <p>The government has regulated that during the state of alert, employers must provide conditions for employees to work from home when the specificity of the activity allows.</p>	<p>An important step in improving the transport service and informing passengers is the launch of the INFO TB application. The app displays in real-time the schedule of public transport and the available routes in the Bucharest-Ilfov region.</p> <p>The schedule for certain bus lines was extended and more vehicles were used during vaccination marathons to facilitate the travel of people going to vaccination centres.</p> <p>To reduce contact, the tariff policy was modified, the tickets for a trip were eliminated and hourly travel tickets were introduced with a validity of 90 for surface transport and 120 minutes for surface transport + subway.</p> <p>The validation obligation for each transshipment has been removed, requiring a single validation for titles valid for 90 minutes or 120 minutes</p> <p>New methods for paying travel documents have been introduced (bank card directly in the vehicle and from the mobile application)</p>	<p>Mandatory use of Mask in public transport</p> <p>Transport operators have chosen to clean their vehicles more often for the safety of passengers</p>	<p>Campaigns were carried out to promote the measures taken for the sanitation of vehicles to increase the confidence of transport users</p> <p>Protective masks were distributed in transport vehicles and stations</p>
Extremadura		Limit capacity in public transport to 60%.	The Emaas app aims to provide the user with the way to go from point A to point B, allowing the routing of the different types of transport available in the city (Bus, Minits, taxi, Buskme, etc...) thus allowing to alleviate pressure on public transport in urban routes.	Emaas have public transport schedules in real-time, showing the times and the position of the vehicles on the map.	Mandatory use of Mask in public transport	
Stockholm	Supply remained the same throughout the pandemic.	Supply remained the same throughout the pandemic.	There was a lower number of active public transport travellers (60% less), which was mainly due to government recommendations (not mandatory enforcement). Sweden's citizens were encouraged to stay at home if feeling ill and work from home as much as possible. Also, from April onwards people were encouraged to travel by PT only if necessary (Jenelius and Cebecauer 2020).	<p>From 17 March 2020, bus passengers are asked to board through the rear doors and not validate their tickets at the front doors.</p> <p>Update: in January 2021 the busier buses (the blue buses) allow passengers to bleep their cards entering from the front door.</p>	<p>Efforts to limit crowding have been done in trains (SJ), by reducing the number of reservable seats. However, all-year train ticket holders do not have to pre-book, which makes it challenging to control crowding.</p> <p>Increased cleaning and ventilation are being implemented in trains. On-board food services have taken necessary measures too.</p>	

Final Remarks

COVID-19 has fundamentally impacted how people travel and also introduced a new trend related to a change in working habits worldwide. The new normal will see a significant change in mobility priorities (Kantar 2022). The future of mobility in 2030 includes a decline in traffic volume due to the increased popularity of remote working, which opens the possibility for changing mobility behaviours/habits. For longer distances, the car is expected to regain people's preference as it is perceived to be safer, more comfortable and more flexible than shared and collective modes. Public transport on the other hand could face a double blow, with reduced overall traffic volume and a declining share of preference linked to the pandemic that possibly will remain for a long period.

Nevertheless, these evolutions in mobility can bring opportunities to implement actions, harnessing the current climate of people's readiness to change, and promote long-lasting transformation in urban mobility with a special focus on:

- conduct and define strategies to accelerate the move to greener cities
- focus on sustainability issues but also considering citizen and accessibility-oriented approaches
- create conditions for the integration of different modes of transport and leverage technology to offer flexible, multi-modal, and more sustainable mobility options to all citizens
- adjust city infrastructure for all stakeholders involved in the urban mobility ecosystem.

References

- Aaditya, Bh, and T. M. Rahul. 2021. "Psychological Impacts of COVID-19 Pandemic on the Mode Choice Behaviour: A Hybrid Choice Modelling Approach." *Transport Policy* 108: 47. [/pmc/articles/PMC9759632/](https://pmc/articles/PMC9759632/) (April 17, 2023).
- Furcer, Thomas, Daniel Holland-Letz, Felix Rupalla, and Andreas Tschiesner. 2021. "How Car Buying and Mobility Is Changing amid COVID-19 | McKinsey." <https://www.mckinsey.com/capabilities/growth-marketing-and-sales/our-insights/how-consumers-behavior-in-car-buying-and-mobility-changes-amid-covid-19> (August 29, 2022).
- Google LLC. 2023. *Google COVID-19 Community Mobility Reports*. <https://www.google.com/covid19/mobility/>.
- Jenelius, Erik, and Matej Cebecauer. 2020. "Impacts of COVID-19 on Public Transport Ridership in Sweden: Analysis of Ticket Validations, Sales and Passenger Counts." *Transportation Research Interdisciplinary Perspectives* 8: 100242.
- Kantar. 2022. "Mobility Futures 2021: The Next Normal." <https://www.kantar.com/campaigns/mobility-and-covid-19> (October 21, 2022).
- de Palma, André, Shaghayegh Vosough, and Feixiong Liao. 2022. "An Overview of Effects of COVID-19 on Mobility and Lifestyle: 18 Months since the Outbreak." *Transportation Research Part A: Policy and Practice* 159: 372–97.
- Sam Schwartz Consulting. 2020. *Public Transit and COVID-19 Pandemic: Global Research and Best Practices*. <https://www.samschwartz.com/apta-public-transit-and-covid19-report>.
- Tirachini, Alejandro, and Oded Cats. 2020. "COVID-19 and Public Transportation: Current Assessment, Prospects, and Research Needs." *Journal of Public Transportation* 22(1): 1. [/pmc/articles/PMC9468467/](https://pmc/articles/PMC9468467/) (April 17, 2023).
- Zhou, Jiali, and Haris N. Koutsopoulos. 2021. "Virus Transmission Risk in Urban Rail Systems: Microscopic Simulation-Based Analysis of Spatio-Temporal Characteristics." *Transportation Research Record* 2675(10): 120–32. <https://journals.sagepub.com/doi/10.1177/03611981211010181> (April 17, 2023).