

Mobility data provides insights into coronavirus spread and containment to help inform future responses

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New studies published today by the European Commission Joint Research Center (JRC) explain the relationship between human mobility

and the spread of coronavirus, as well as the effectiveness of mobility restriction measures to contain the pandemic.

The findings, based on aggregated and anonymised mobile phone location data, will support policymakers in formulating the best data-driven approaches for ending confinement, mapping the socio-economic effects of lockdown measures and informing early warning systems for potential new outbreaks.

Mariya Gabriel, Commissioner for Innovation, Research, Culture, Education and Youth, and responsible for the JRC, said: "Digital technologies and social sciences are instrumental in the Commission's data and evidence-driven crisis response and policy measures to fight the pandemic. I would like to thank [mobile operators](#) who provided unique access to their datasets, thereby contributing to the fight against this public health threat."

Commissioner for the Internal Market Thierry Breton, who spearheaded the initiative, said: "These findings help us prepare for different possible scenarios for the future which is vital in the context of reopening travel and businesses. This experience also shines a positive light on the opportunities offered by Business-to-Government data sharing, especially in times of crisis."

In total, 14 mobile network operators in 19 EU Member States and Norway provided their data to the JRC voluntarily and for free.

Thanks to this public-private cooperation, a systematic analysis of the relationship between [human mobility](#) and virus spread was conducted for the first time by JRC scientists, together with a comparative cross-country analysis of the efficiency of containment measures.

The data has provided clear evidence on the impact of mobility on the

spread of the virus. It shows that mobility alone can explain the initial spread of the virus in Italy, France and Spain.

The results also show that the containment measures taken by governments and regions, including physical distancing and mobility restrictions, were efficient in limiting the spread of the virus.

It also emerged that when physical distancing measures were put in place, the mobility factor became less important in defining the spread of the virus.

Mobility restrictions should take into account geographical mobility patterns

The mobility data helped identify mobility patterns and areas, which cross regional or provincial borders.

For instance, to reach the closest grocery store or the closest city offering employment possibilities, some Europeans have to cross a regional border. This creates a "mobility functional area" across the border of the two regions.

The study indicates that the best way to contain a virus outbreak in the future—while keeping the economy running—would be to apply mobility restrictions on these types of "mobility functional areas" within which people usually move, rather than on administrative areas such as regions or provinces.

The results of this JRC study can be used to inform decisions linked to mobility restrictions in case of future disease outbreaks.

Public-private partnership

The initiative is an unprecedented partnership between the public and private sector to fight a public health threat.

In total, 14 Mobile Network Operators in 19 EU Member States and Norway provided their data to the Joint Research Center.

The three studies released today are based on data from 16 EU Member States—Austria, Belgium, Bulgaria, Czechia, Croatia, Denmark, Estonia, Finland, France, Germany, Greece, Italy, Portugal, Slovenia, Spain and Sweden, as well as Norway.

Additional studies will follow and more Mobile Network Operators can join the initiative to cover more countries.

Background

On 8 April, the Commission adopted a Recommendation to support exit strategies through mobile data and apps.

Based on this, Member States, supported by the Commission, release a comprehensive document on a common approach for the use of mobility data to fight against the coronavirus.

The analyzed mobile phone location data is anonymised and aggregated and cannot be used to track individuals.

It is handled in accordance with all applicable laws, respecting best practices in data security and with no processing permitted for any further purposes other than fighting the coronavirus pandemic.

The data will only be kept as long as the crisis is ongoing, in line with the views of the European Data Protection Supervisor.

Finally, in the context of the Data Strategy for Europe, presented in February 2020, the final report prepared by the Expert Group on Business-to-Government Data Sharing already pointed out the usefulness of private sector data for public interest purposes.

The lessons learned in the current exercise can help shape further policy making on Business to Government data sharing in Europe.

More information: How human mobility explains the initial spread of COVID-19: [ec.europa.eu/jrc/en/publicatio... tial-spread-covid-19](https://ec.europa.eu/jrc/en/publication/2020-07-15-how-human-mobility-explains-the-initial-spread-of-covid-19)

Measuring the impact of COVID-19 confinement measures: [ec.europa.eu/jrc/en/publicatio... ile-positioning-data](https://ec.europa.eu/jrc/en/publication/2020-07-15-measuring-the-impact-of-covid-19-confinement-measures)

Mapping Mobility Functional Areas (MFA) using mobile positioning data to inform COVID-19 policies: [ec.europa.eu/jrc/en/publicatio... rm-covid-19-policies](https://ec.europa.eu/jrc/en/publication/2020-07-15-mapping-mobility-functional-areas-using-mobile-positioning-data-to-inform-covid-19-policies)

Provided by European Commission, Joint Research Centre (JRC)

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