

Mobile network analysis reveals Latvians now take fewer Covid-19 precautions than in spring

In spring, Latvian citizens took to their homes in accordance with the preventive epidemiological measures set out by the authorities to curb the spread of Covid-19. Now, according to behavior analysis research conducted by the University of Latvia (LU) and LMT, the majority of Latvians have thrown caution to the wind and general activity has returned to pre-pandemic levels, which is adversely affecting the country's epidemiological situation.

Following the declaration of a national state of emergency on March 24, many Latvians vacated cities and business districts, flocking to the countryside and choosing to work from home, made apparent by the reduced mobile network event activity in economic hotspots and increased activity outside cities and in residential areas.

This lay the groundwork for Latvia to become one of Europe's greatest success stories in curbing the spread of the pandemic. Epidemiological data was generally positive throughout the spring with Latvia constantly in Europe's bottom 5 in infection statistics.

A fantastic spring led to a summer with few restrictions, which also saw minuscule infection numbers. The citizens' carefree attitude, however, seeped into autumn, bringing with it a severe wave of infections that have continued on an upward trend since.

“When we conducted mobile data analysis in spring before and after the declaration of the state of emergency, we discovered that most citizens acknowledged the call to #StayHome. This produced great results - Latvia became an example and a global success story in the fight against the Covid-19 pandemic. This was one of the main reasons why Latvians were able to enjoy the summer restriction-free. However, the carelessness of summer continued with the arrival of autumn, which quickly became a health hazard, as the number of infections rose in tandem with heightened activity”, explains prof. Gundars Bērziņš, Dean of the LU Faculty of Business, Management, and Economics.

Autumn mobile network event statistics show that activity in economic hotspots has returned to pre-pandemic levels. When comparing September 27 to March 24, both of which are Tuesdays, activity in the capital has not only decreased in residential areas, but it has also gone up in education and research institutions, in hospitals, as well as in retail areas.

“There is an observable increase in activity in such places as the Latvian Academy of Science and Pauls Stradiņš Clinical University Hospital, as well as in shopping centers Alfa, Spice, and

Akropole.” highlights prof. Irina Arhipova, LU expert and Vice-rector of the Latvia University of Life Sciences and Technologies.

Prof. Juris Binde, President of LMT, weighs in: “Analyzing mobile network event data for Riga's largest shopping centers, it can be seen that activity has almost reached the same level as last year during the same period, which, unfortunately, increases the spread of Covid-19 and heightens the risk of infection for everyone. Therefore, taking into consideration the positive preventive measures taken by shopping centers, as well as the significant efforts in the introduction of e-services, Latvian citizens need to urgently reconsider their pre-pandemic habits and make use of the opportunities to shop digitally available to them”.

The data confirms a direct link between the economic activity of the citizens and the spread of Covid-19 – the higher the activity, the higher the number of infections. The growth in economic activity correlates, with a month's difference, with the current Covid-19 statistics.

LU professor Uga Dumpis explains that “human contact is the main risk factor for the spread of Covid-19. The more people meet, the higher the possibility that 2-meter distancing, masks, and handwashing will be ineffective because they aren't always observed. For a while, it would be important to work remotely, minimize the movement of citizens, avoid sporting, culture, and entertainment events, as well as optimize store visits. The results of the research conducted by LU and LMT show that not everyone in Latvia understands this and people continue to live as they did during the summer when the spread of the virus was negligible. We'll be able to establish some control over the spread of the virus only when the majority of Latvians will observe social and physical distancing.” He also highlights that, currently, the best way to limit the infection rate is by staying at home and socially distancing.

About the project

The research conducted by LU and LMT analyzed activity on the LMT mobile network (the base station traffic load) and compared it to the epidemiological statistics provided by the Center of Disease Prevention and Control (SPKC) to establish whether there is a correlation between citizen activity and the epidemiological situation in Latvia in general, as well as in its regions. Analysis was conducted on the impact of various national and local restrictions.

The project analyzes big data - event statistics on the LMT mobile network between October 2019 and November 2020 and also enables comparative analysis from 2016 till today. The total analyzed event count is almost 360 million over September 2020 and 2.24 billion over the last year.