29 January, 2021

Indicators of demographic context and territorial expression of the COVID-19 pandemic in Portugal

COVID-19: a territorial view on demographic context and territorial expression of the pandemic

The expression of the pandemic on national territory continues to be characterised by a high degree of heterogeneity. Some of the results obtained in this context:

- In the Alentejo, Metropolitan Area of Lisboa (AML) and Centro regions, the only ones to exceed the national average, the number of deaths between December 21, 2020 and January 17, 2021 was 1.3 times higher than in the same period of reference (average for the same period in the years 2015 to 2019). In 72 of the 308 Portuguese municipalities the number of deaths between December 21 and January 17 was 1.5 times higher than that observed in the reference period.
- In the week ending on January 27, 2021, there were 90,234 new cases in Portugal, the highest value since the beginning of the COVID-19 pandemic in Portugal, with the exponential increase in the number of new cases in the last 7 days since 28 December 2020 continuing. The incidence rate of COVID-19 at 14 days was 1 628, corresponding to the number of confirmed new cases of COVID-19 per 100 thousand inhabitants in the last 14 days.
- On January 18, 2021, the date of the last data update at municipality level, the national incidence rate of COVID-19 at 14 days (1 266) was surpassed by the Centro (1 438), Alentejo (1 365) and AML (1 390) regions. With values above the regional average, the sub-regions of Viseu Dão Lafões (2,024), Beiras e Serra da Estrela (1 557) and Médio Tejo (1 557), in the Centro region, and the sub-regions of Alentejo Central (1 663), Alto Alentejo (1 548) and Baixo Alentejo (1 478), in the Alentejo, stood out.
- On January 18, 2021, 215 municipalities (70%) registered a number of new confirmed cases of COVID-19 (last 14 days) per 100,000 inhabitants above the threshold defined as extremely high risk (960 new cases per 100,000 inhabitants), of which 108 registered more than 1,500 new cases per 100,000 inhabitants.
- Within the framework of Statistics Portugal's Statslab, data on population mobility at the regional level suggest a decrease in mobility levels following the declaration of a new confinement period (January 15) and the closing of schools (January 22), highlighting, in particular, the decrease in mobility levels registered last Friday, Monday and Tuesday (January 22, 25 and 26), compared to the same days of the previous weeks (January 15, 18 and 19). On Sunday, January 24, on the contrary, the data analysed points out to a slight increase in mobility compared to the previous Sunday (January 17).

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I. Demographic and territorial context indicators

The number of deaths in the Alentejo, AML and Centro regions was 1.3 times higher than in the reference period

Figure 1 - Ratio between deaths in the last 4 weeks and deaths in the same reference period (average for the period from 2015 to 2019), Portugal, weeks between 29 March 2020 and 17 January 2021, weekly

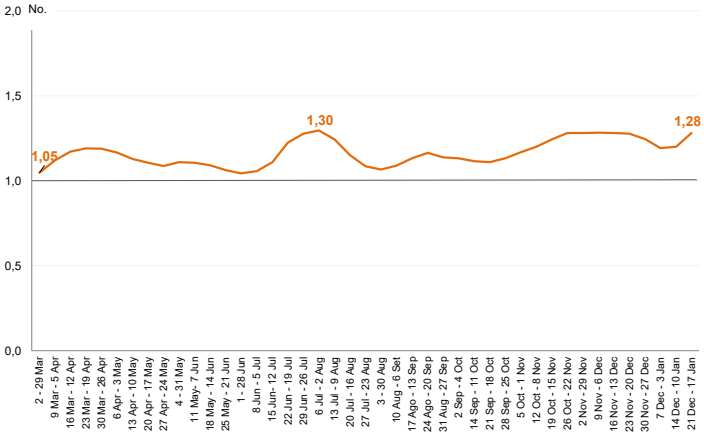
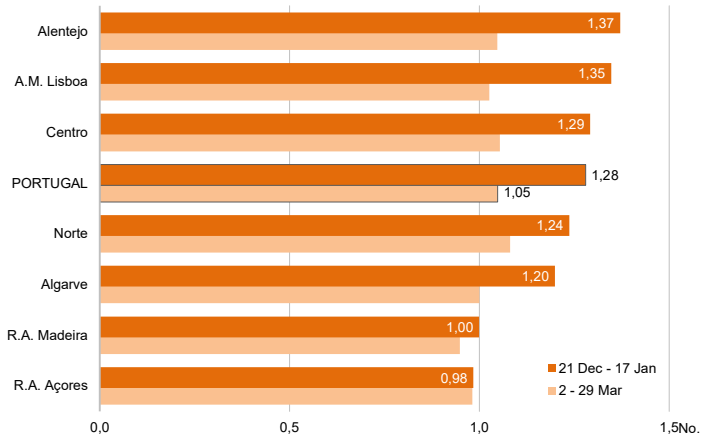


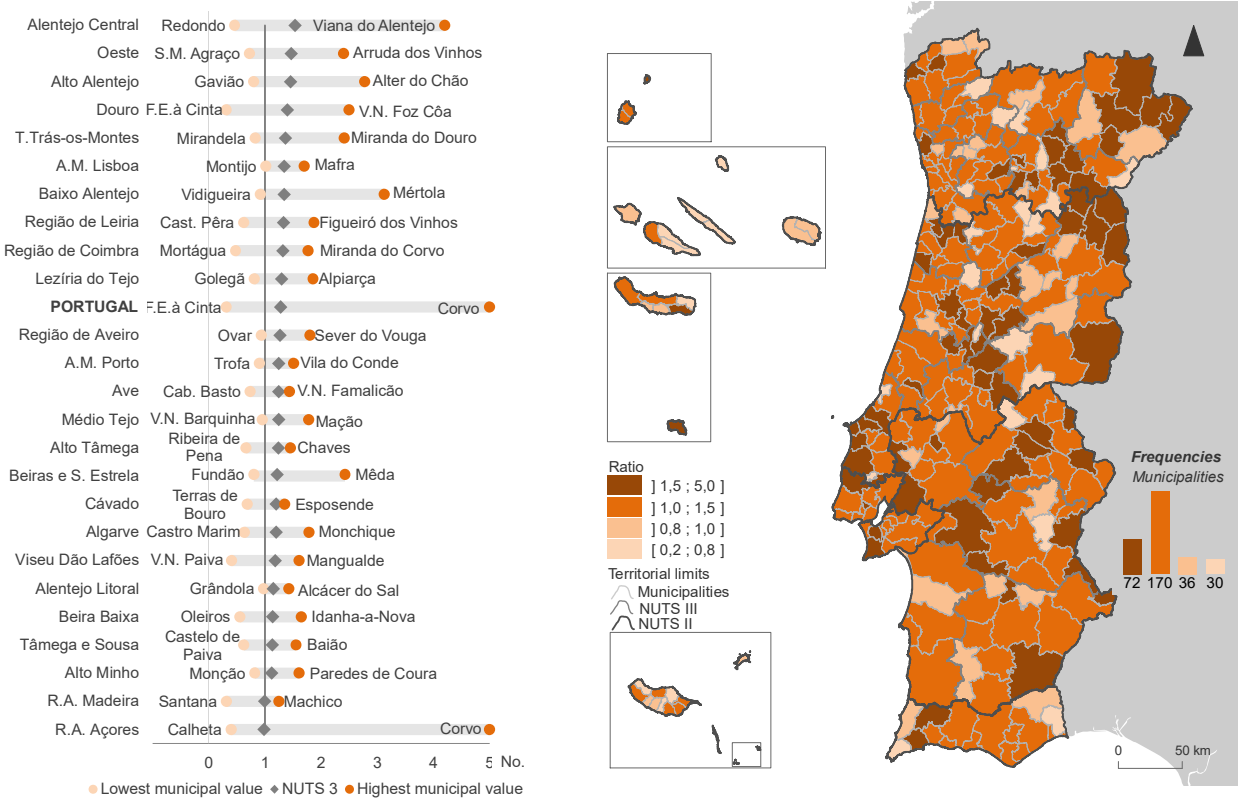
Figure 2 – Ratio between deaths in the last 4 weeks and deaths in the same reference period (average for the period from 2015 to 2019), Portugal and NUTS 2, weeks 29 March 2020 and 17 January 2021



Source: INE, I.P., Statistics on Deaths (Preliminary (2020 and 2021) and Final Results (2015 up to 2019)).

In 72 municipalities the number of deaths between 21 December and 17 January was 1.5 times higher than in the same reference period

Figure 3 - Number of deaths in the last four weeks (17 January 2021) per deaths in the same period of reference (average for the period from 2015 to 2019), Portugal, NUTS 3 and municipality

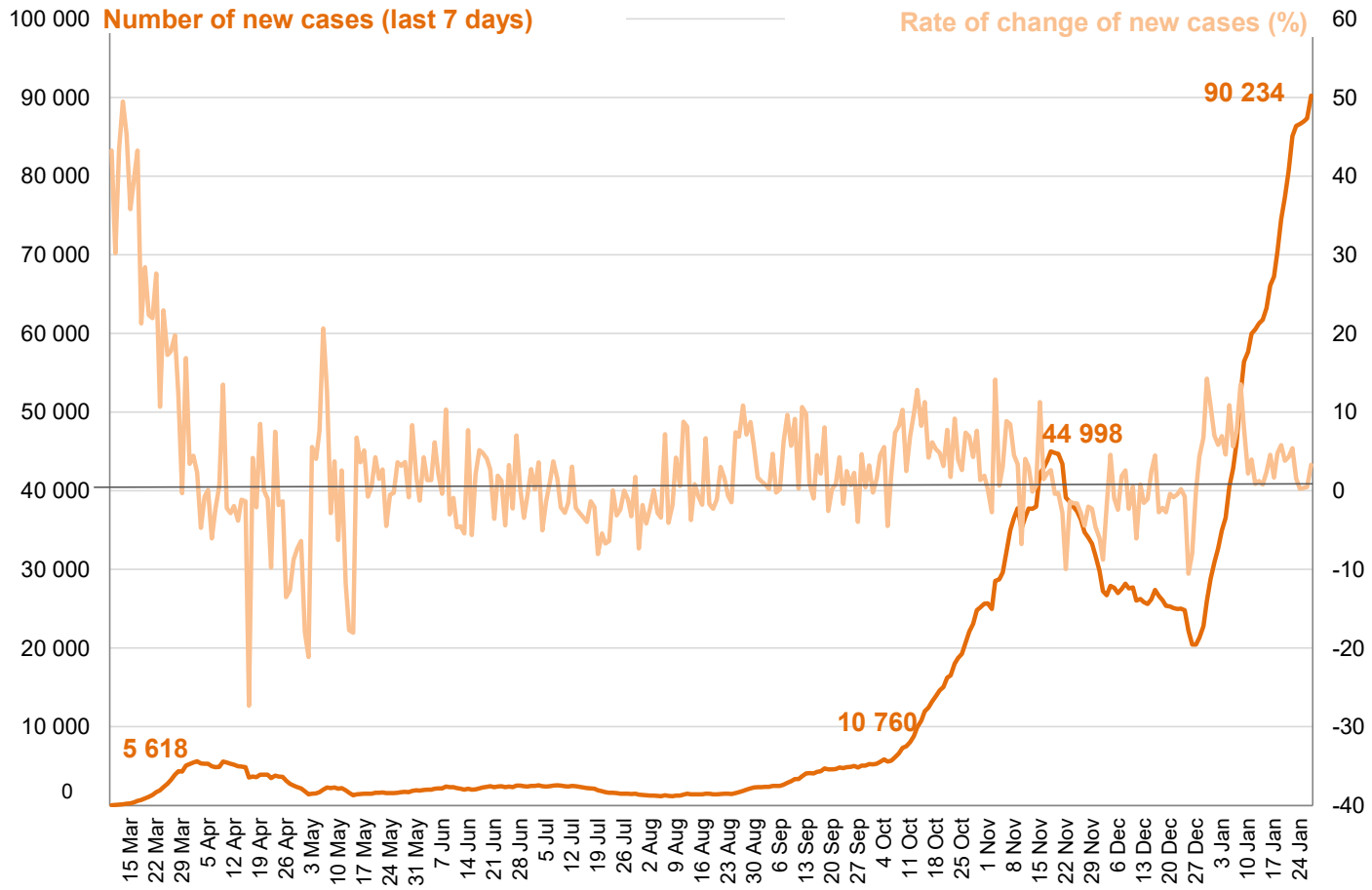


Source: INE, I.P., Statistics on Deaths (Preliminary (2020 and 2021) and Final Results (2015 up to 2019)).

II. The expression of the pandemic in the municipalities

On January 27, 2021 the highest number of new confirmed cases in the last 7 days was recorded since the beginning of the pandemic

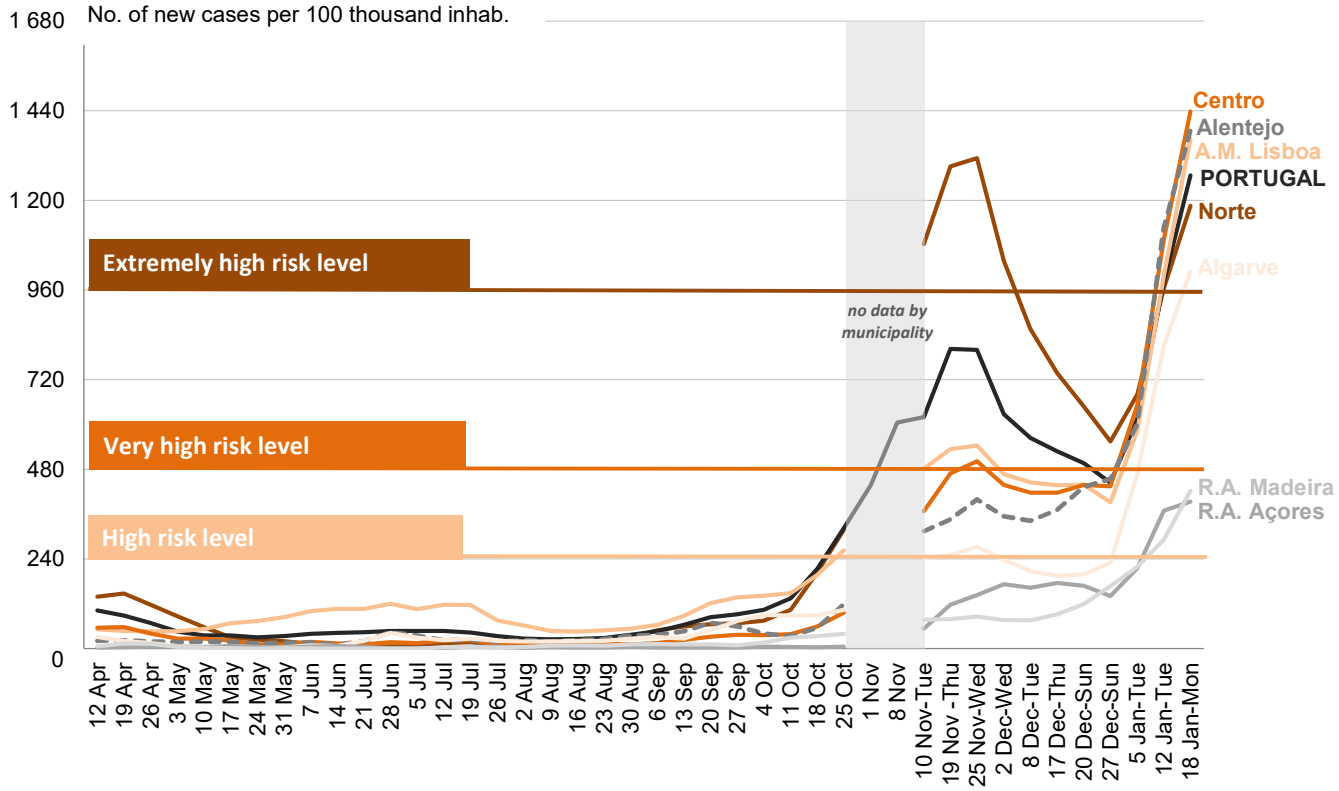
Figure 4- Number of new confirmed cases (last 7 days) of infection by SARS-CoV-2/COVID-19 and respective rate of change, Portugal, per day (10/3/2020 to 27/1/2021)



Source: Directorate-General of Health, Daily COVID-19 Status Report (released up to January 28).
Note: The number of new cases includes the +4,375 confirmed cases resulting from the historical update released by the Directorate-General of Health in the COVID-19 Status Report made available on 16 November (data on the situation up to 15 November) with impact on the new cases in the last 7 days for the period 15-21 November. The dates marked on the graph axis correspond to Sundays.

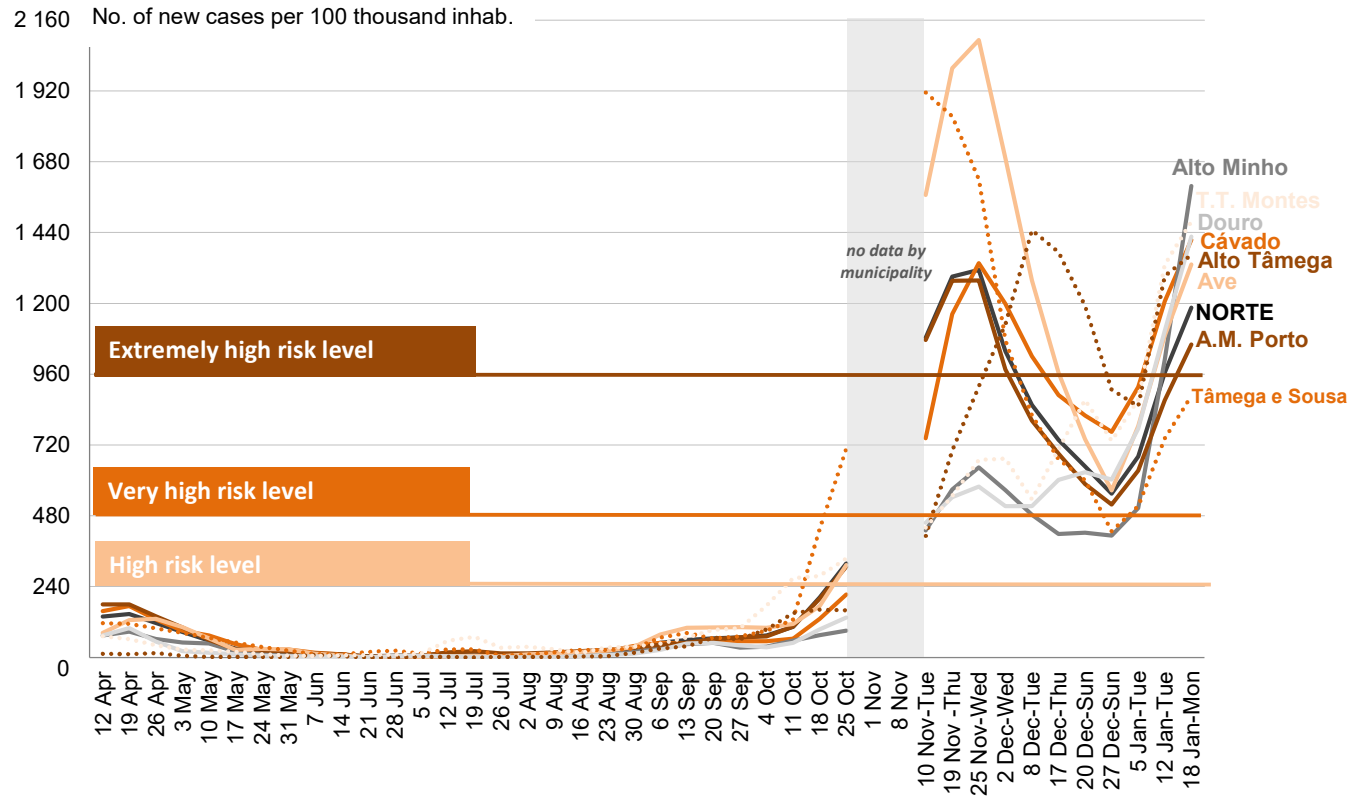
The Centro, Alentejo and AML regions exceeded the national incidence rate at 14 days and the Norte region registered the highest number of new cases confirmed in the last 14 days

Figure 5 - 14-day cumulative incidence rate of SARS-CoV-2/COVID-19, Sundays - 12 April to 25 October; 10, 19 and 25 November, 2, 8, 17, 20 and 27 December, 5, 12 and 18 January, Portugal and NUTS 2



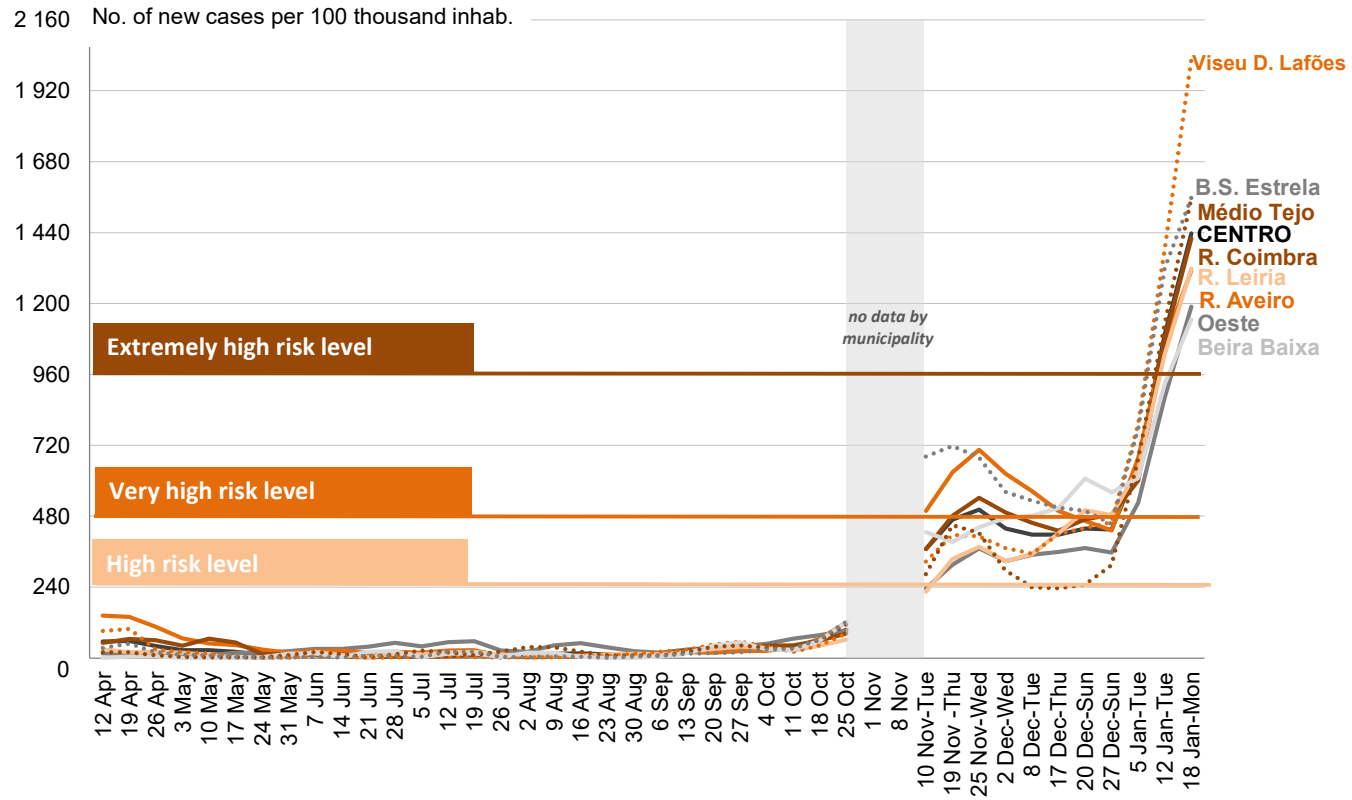
Source: Directorate-General of Health, Daily COVID-19 Status Report (released up to January 25). INE, I.P., Annual estimates of resident population, 31 December 2019.
Note: The absence of values at the regional level on 1 and 8 November is due to the interruption in the dissemination of data at the municipality level in the COVID-19 Status reports. The dates marked on the graph axis correspond to Sundays until 8 November and then to the reference days associated with the 14-day cumulative incidence indicator that is now being released weekly by the Directorate-General of Health (see technical note at the end of the press release).

Figure 6- 14-day cumulative incidence rate of SARS-CoV-2/COVID-19, Sundays - 12 April to 25 October; 10, 19 and 25 November, 2, 8, 17, 20 and 27 December, and 5, 12 and 18 January, Norte region and respective NUTS 3 sub-regions



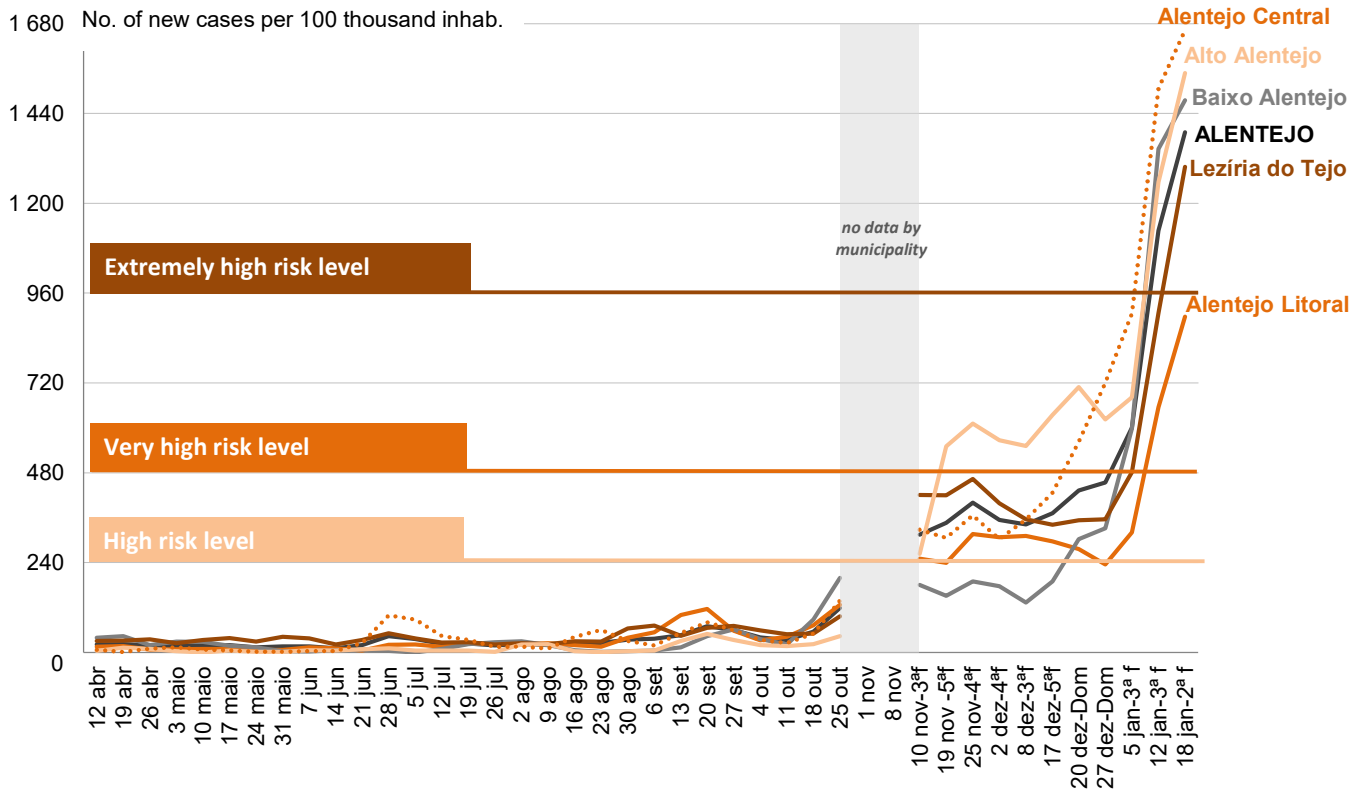
Source: Directorate-General of Health, Daily COVID-19 Status Report (released up to January 25). INE, I.P., Annual estimates of resident population, 31 December 2019.
Note: The absence of values at the regional level on 1 and 8 November is due to the interruption in the dissemination of data at the municipality level in the COVID-19 Status reports. The dates marked on the graph axis correspond to Sundays until 8 November and then to the reference days associated with the 14-day cumulative incidence indicator that is now being released weekly by the Directorate-General of Health (see technical note at the end of the press release).

Figure 7- 14-day cumulative incidence rate of SARS-CoV-2/COVID-19, Sundays - 12 April to 25 October; 10, 19 and 25 November, 2, 8, 17, 20 and 27 December, and 5, 12 and 18 January, Centro region and respective NUTS 3 sub-regions



Source: Directorate-General of Health, Daily COVID-19 Status Report (released up to January 25). INE, I.P., Annual estimates of resident population, 31 December 2019.
Note: The absence of values at the regional level on 1 and 8 November is due to the interruption in the dissemination of data at the municipality level in the COVID-19 Status reports. The dates marked on the graph axis correspond to Sundays until 8 November and then to the reference days associated with the 14-day cumulative incidence indicator that is now being released weekly by the Directorate-General of Health (see technical note at the end of the press release).

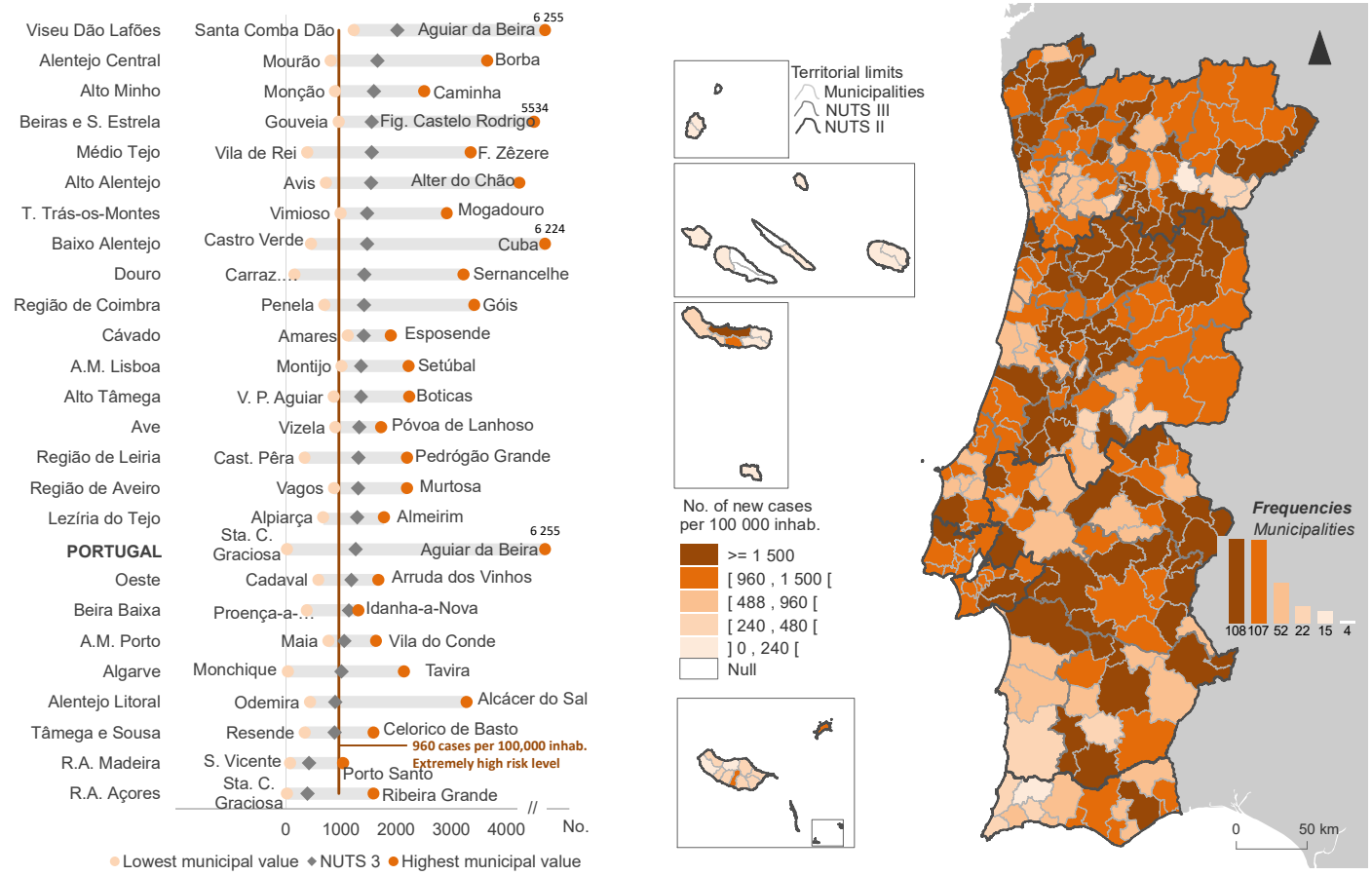
Figure 8- 14-day cumulative incidence rate of SARS-CoV-2/COVID-19, Sundays - 12 April to 25 October; 10, 19 and 25 November, 2, 8, 17, 20 and 27 December, and 5, 12 and 18 January, Alentejo region and respective NUTS 3 sub-regions



Source: Directorate-General of Health, Daily COVID-19 Status Report (released up to January 25). INE, I.P., Annual estimates of resident population, 31 December 2019.
Note: The absence of values at the regional level on 1 and 8 November is due to the interruption in the dissemination of data at the municipality level in the COVID-19 Status reports. The dates marked on the graph axis correspond to Sundays until 8 November and then to the reference days associated with the 14-day cumulative incidence indicator that is now being released weekly by the Directorate-General of Health (see technical note at the end of the press release).

On January 18, 2021, 70% of the Portuguese municipalities were at extremely high risk

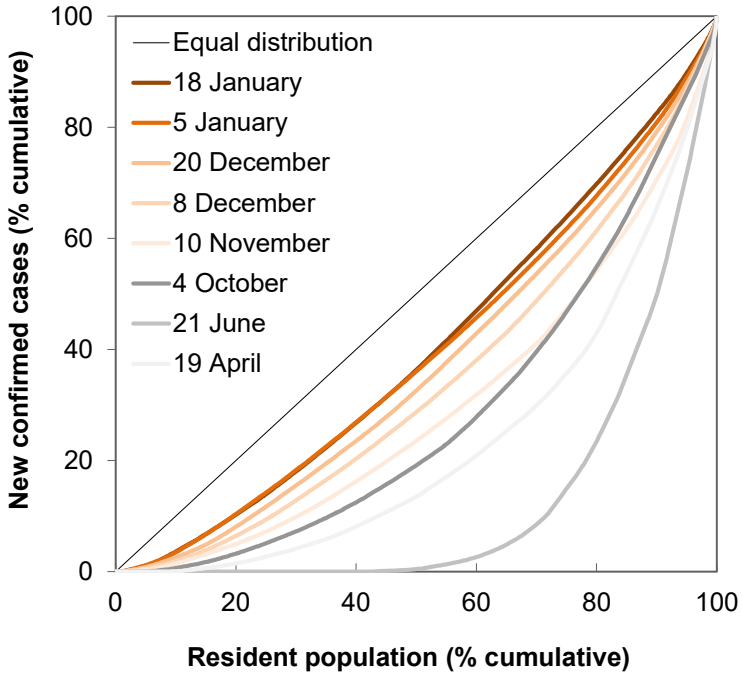
Figure 9 – 14-day cumulative incidence rate of infection by SARS-CoV-2/COVID-19 on 18 January, Portugal NUTS 3 and municipality



Source: Directorate-General of Health, Daily COVID-19 Status Report (released on January 25); INE, I.P., Annual estimates of resident population, 31 December 2019.
Note: In the graph, in NUTS 3 sub-regions with zero data status, the municipalities with the lowest value in the indicator are identified.

Figure 10- Territorial concentration of new confirmed cases of infection by SARS-CoV-2/COVID-19 (last 14 days), in relation to the resident population, based on the distribution by municipality.

Location Curve



Location Coefficient

		LC
18 January – Monday		13.7
12 January – Tuesday		13.3
5 January – Tuesday		14.3
27 December – Sunday		15.9
20 December – Sunday		17.4
17 December –Thursday		19.8
8 December – Tuesday		22.0
2 December – Wednesday		25.1
25 November – Wednesday		27.5
19 November – Thursday		28.7
10 November – Tuesday		28.9
Sundays	25 October	28.4
	18 October	30.4
	11 October	31.3
	4 October	32.2
	6 September	35.1
	9 August	44.9
	12 July	51.8
	21 June	61.6
	17 May	39.8
	19 April	40.1

Source: Directorate-General of Health, Daily COVID-19 Status Report (released up to January 25); INE, I.P., Annual estimates of resident population, 31 December 2019.
Note: For the calculation of the location coefficients zero cases were considered for the municipalities with no value in the Directorate-General of Health Status report (0 or< 3 cases).

STATS lab

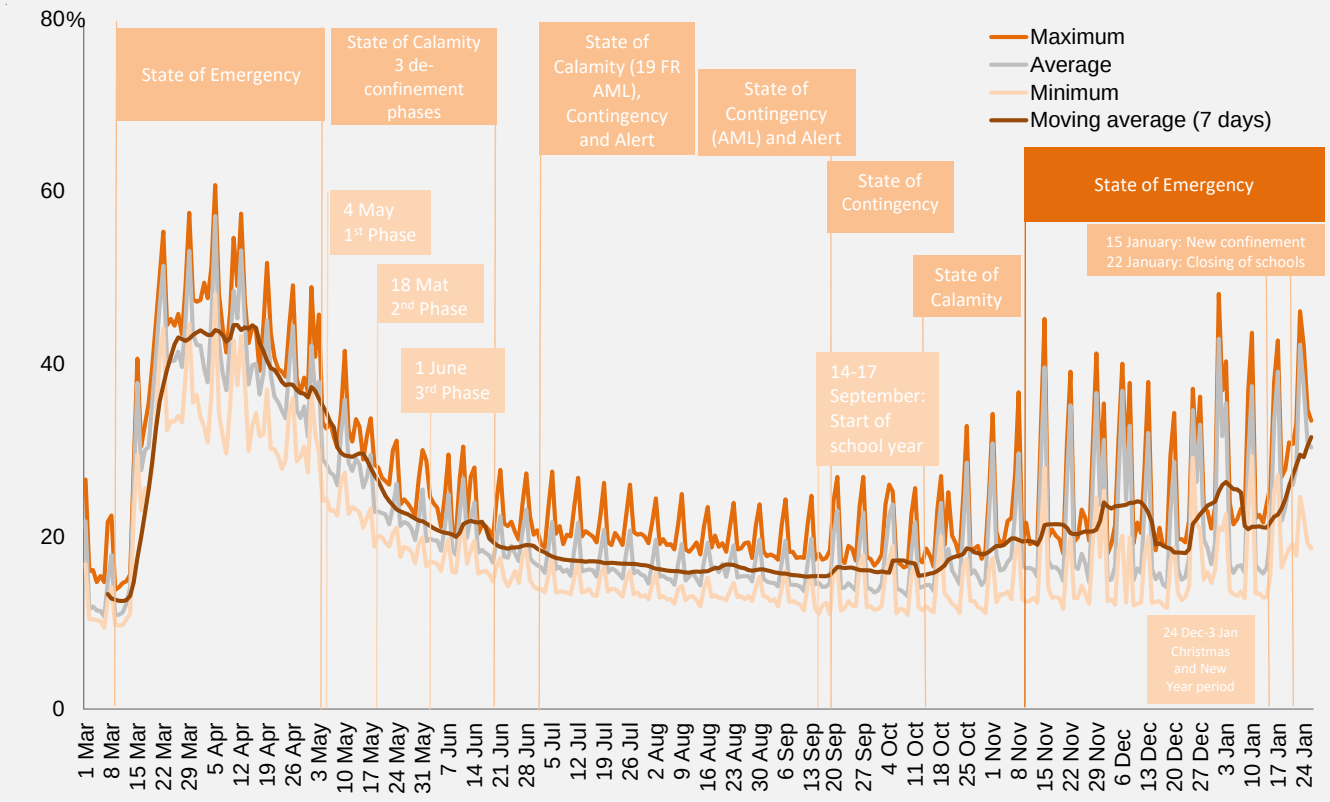
Population mobility indicators at regional level: an analysis based on information from Facebook's "Data for Good" Initiative

Taking advantage of Facebook's "Data for Good" initiative, the figure below shows the proportion of the population "staying put" between 1 March 2020 and 26 January 2021, namely the minimum, average and maximum values calculated based on the NUTS 3 sub-regions. The proportion of population that "stayed put" is based on the number of Facebook users associated with a single reference grid of 600mx600m during 8 am and 8 pm on day x, requiring at least three occurrences during that time period.

It is possible to observe that on Sundays there is generally less mobility of the population than on other days of the week. It is also noteworthy that after the first confirmed cases of COVID-19 and following the declaration of the first State of Emergency, there is a decrease in the mobility of the population, followed by an increase in the levels of mobility after the implementation of the de-confinement measures.

Considering the moving average of the last 7 days, there has been an overall reduction in the average levels of mobility following the declaration of the State of Emergency on November 9 and subsequent renewals. In this context, the days before Christmas and after New Year are the exception, where there is an increase in mobility due to the general cancelling of measures restricting circulation. This tendency to reduce mobility is accentuated after the entry into force, on January 15, 2021, of extraordinary measures to limit the spread of the pandemic, including a new confinement period, followed by the closing of schools. In particular, the decrease in mobility levels recorded on Friday, Monday and Tuesday, January 22 (-8 p.p.), 25 (-9 p.p.) and 26 (-7 p.p.), compared with the same days of the previous weeks (January 15, 18 and 19), should be noted. On the contrary, there is a slight increase in mobility (+2 p.p.) on Sunday, January 24 compared to the previous Sunday (January 17).

Proportion of the population "staying put" between 1 March and 26 January – minimum, average and maximum values of NUTS 3 sub-regions

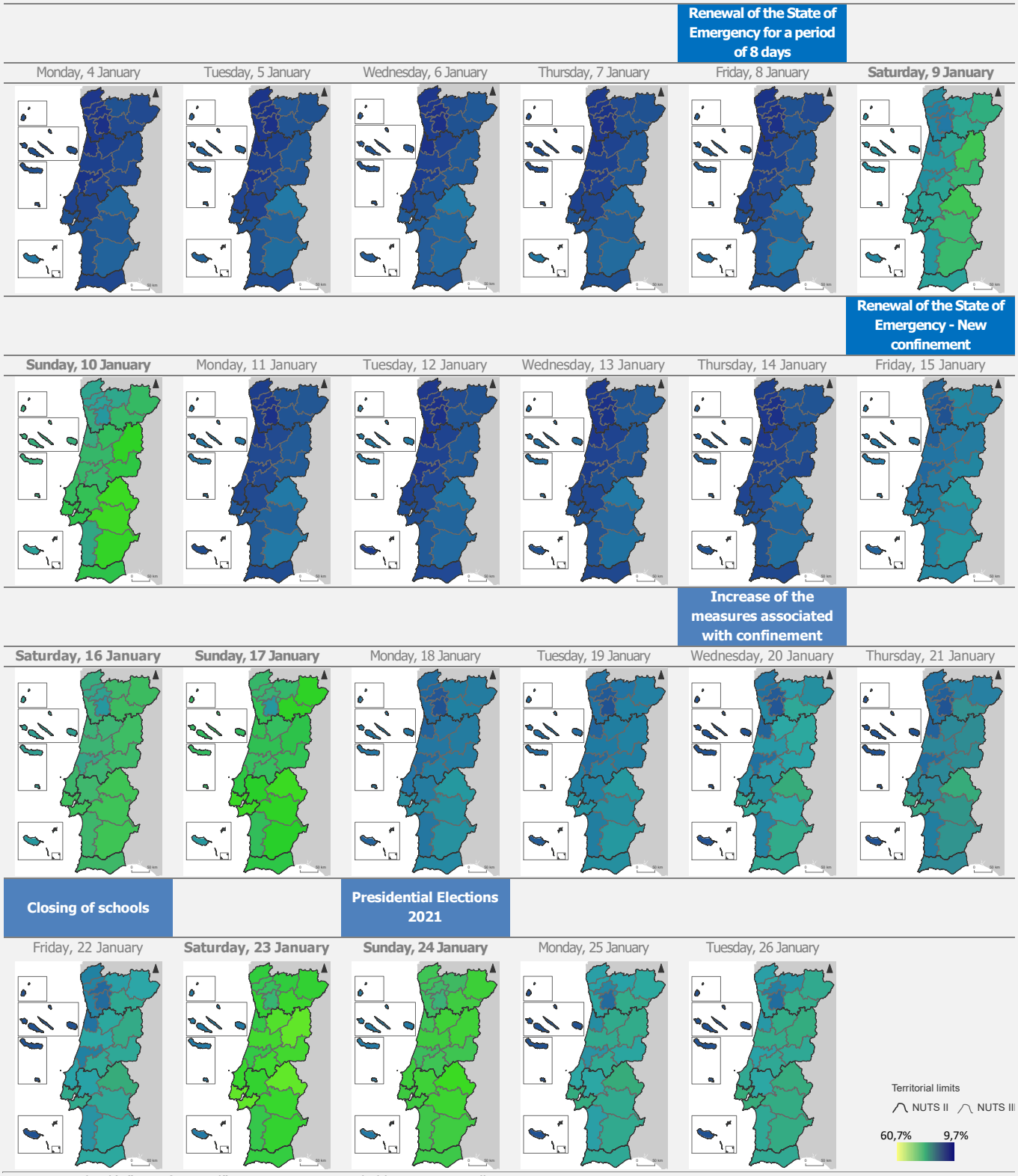


Source: Facebook's "Data for Good" Initiative. Data provided by Carnegie Mellon University. Note: The dates marked on the graph axis correspond to Sundays.

The following figure shows the mobility levels of population between January 4 and 26, 2021 for the 25 NUTS 3 sub-regions. Overall, there are lower levels of mobility at weekends. Also noteworthy is the decrease in mobility on working days following the declaration of a new confinement period. In particular, there was a decrease in mobility levels in most sub-regions on January 22 (Friday), January 25 (Monday) and January 26 (Tuesday) compared to the same days in previous weeks (January 15, 18 and 19).

STATS lab

Proportion of the population "staying put" between 4 and 26 January 2021 by NUTS 3



Source: Facebook's "Data for Good" Initiative. Data provided by Carnegie Mellon University.

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