The impact of the first days of mass quarantine in the Greater Santiago Metropolitan Region

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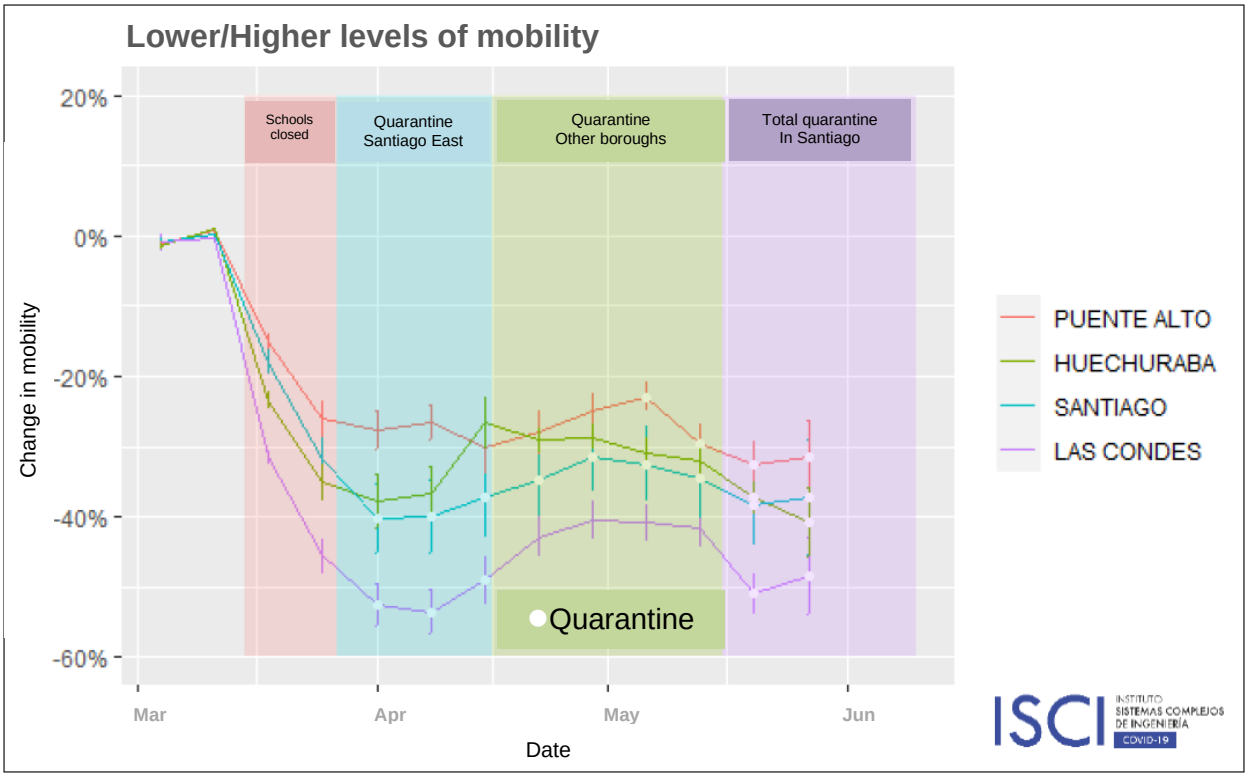
In this third mobility report we present data on the impact during the first two weeks of total quarantine in the city of Santiago that began on May 15. It is our hope that these reports contribute to the design and evaluation of mitigation strategies for the health and social crises in the COVID-19 pandemic. To study the information provided, we analyzed the journeys of the inhabitants of the Metropolitan Region using statistical data and information on the use of telecommunications infrastructure, delivered anonymously and aggregated by Entel, grouped at census zone level.

The results in this report show that during the second week of total quarantine, mobility did not decrease compared to the first week: all changes are rather small and of little significance. Consequently, mobility levels are not yet reduced to the expected levels, especially in lower-income communities. Today, more than ever, after almost four weeks of total quarantine and when new infections continue to increase in some communes and not decrease rapidly enough in others, it is urgent to understand what causes the rules of quarantine not being followed to generate public policies that have the greatest impact in reducing infection.

In our first two reports, we explain how we construct our mobility samples[1]. In Figure 1 we quantify the temporal evolution of mobility, showing how the weekly flow changes outside the home zone in relation to the base line in different boroughs of the Metropolitan Region. The boroughs included in the figure represent different socioeconomic strata. The points indicated in white mark those weeks where the borough had more than half of its population in quarantine. The vertical lines on the graph represent estimates of lower and upper levels of reduced mobility. For example, in the last week shown, we estimate that the reduction in mobility in Huechuraba is between 36% and 46%.

[1] For more details see: https://covidanalytics.isci.cl/reportes/

Figure 1 – Temporal evolution of mobility (flow of departures from the home zone) in different boroughs of the Metropolitan Region.



Source: Prepared by the authors based on telecommunications infrastructure data and quarantine data from https://www.gob.cl/coronavirus/cuarentena/.

We observe that mobility remains relatively constant during the second week of total quarantine with respect to the first. In several boroughs, especially those with lower incomes, the reduction in mobility still does not exceed 30-40%. Table 1 shows data for each of the boroughs of the Metropolitan Region that have been in total quarantine over recent weeks, confirming the patterns in Figure 1 (in which we report the midpoint between the lower and higher levels of estimations of reduced mobility).

As we expressed in our first reports, it is still essential to understand why citizens do not adhere to quarantines more strictly. We believe it is imperative to improve communication between government and citizens about the importance of quarantines in order to overcome the health crisis facing the country, as well as government support to more vulnerable sectors of the population. The reduction of face-to-face procedures and the digital divide is a measure that could also help.

The Complex Engineering Systems Institute (ISCI) and Entel have taken all measures necessary to maintain and protect the information used within the current legal framework.

Tabla 1 - Variación Movilidad Comunas en Cuarentena Últimas tres semanas.

	Comuna	Semana Antes Cuarentena	Primera Semana Cuarentena	Segunda Semana Cuarentena
1	Vitacura	-43.3%	-53.2%	-50.9%
2	Lo Barnechea	-37.9%	-51.2%	-49.6%
3	Las Condes	-41.5%	-50.9%	-48.4%
4	Providencia	-41.3%	-49.8%	-47.8%
5	La Reina	-38.0%	-48.1%	-46.4%
6	Colina	-34.9%	-47.9%	-44.7%
7	San Miguel	-40.8%	-41.2%	-41.5%
8	Ñuñoa	-34.7%	-43.0%	-41.3%
9	Huechuraba	-32.1%	-37.2%	-40.8%
10	Peñalolen	-37.2%	-39.2%	-38.6%
11	Santiago	-34.5%	-38.2%	-37.3%
12	Macul	-34.8%	-38.6%	-36.5%
13	La Cisterna	-33.9%	-34.2%	-35.4%
14	Buin	-31.5%	-40.6%	-34.4%
15	Padre Hurtado	-26.0%	-37.2%	-34.4%
16	Quinta Normal	-33.0%	-36.8%	-34.1%
17	La Florida	-32.4%	-33.8%	-33.3%
18	Recoleta	-30.7%	-33.8%	-33.2%
19	Lampa	-26.9%	-35.0%	-32.8%
20	Estación Central	-30.7%	-32.5%	-32.8%
21	San Joaquín	-30.8%	-32.2%	-32.6%
22	Pudahuel	-24.9%	-33.8%	-31.8%
23	Independencia	-29.0%	-32.4%	-31.8%
24	Puente Alto	-29.6%	-32.6%	-31.5%
25	Conchalí	-32.0%	-34.0%	-31.5%
26	Maipú	-23.7%	-33.5%	-31.3%
27	Pedro Aguirre Cerda	-29.6%	-31.6%	-31.1%
28	Quilicura	-28.1%	-32.4%	-31.1%
29	Cerrillos	-28.6%	-31.4%	-29.7%
30	La Granja	-28.3%	-30.0%	-28.7%
31	Lo Prado	-26.9%	-30.1%	-28.1%
32	San Bernardo	-26.4%	-28.5%	-28.1%
33	Renca	-26.9%	-27.5%	-27.5%
34	El Bosque	-27.4%	-29.3%	-27.3%
35	Cerro Navia	-24.2%	-26.9%	-26.8%
36	Lo Espejo	-23.6%	-25.5%	-25.1%
37	La Pintana	-23.6%	-24.3%	-23.4%
38	San Ramón	-22.6%	-23.8%	-23.0%
	Promedio	**-31.1%**	**-35.8%**	**-34.6%**
	Std. Dev	**5.5%**	**7.7%**	**7.3%**

Fuente: Elaboración propia en base a datos estadísticos e información del uso de la infraestructura de telecomunicaciones.