



Universidad de
SanAndrés

COMPUTATIONAL TOOLS FOR RESEARCH

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Work N^o2

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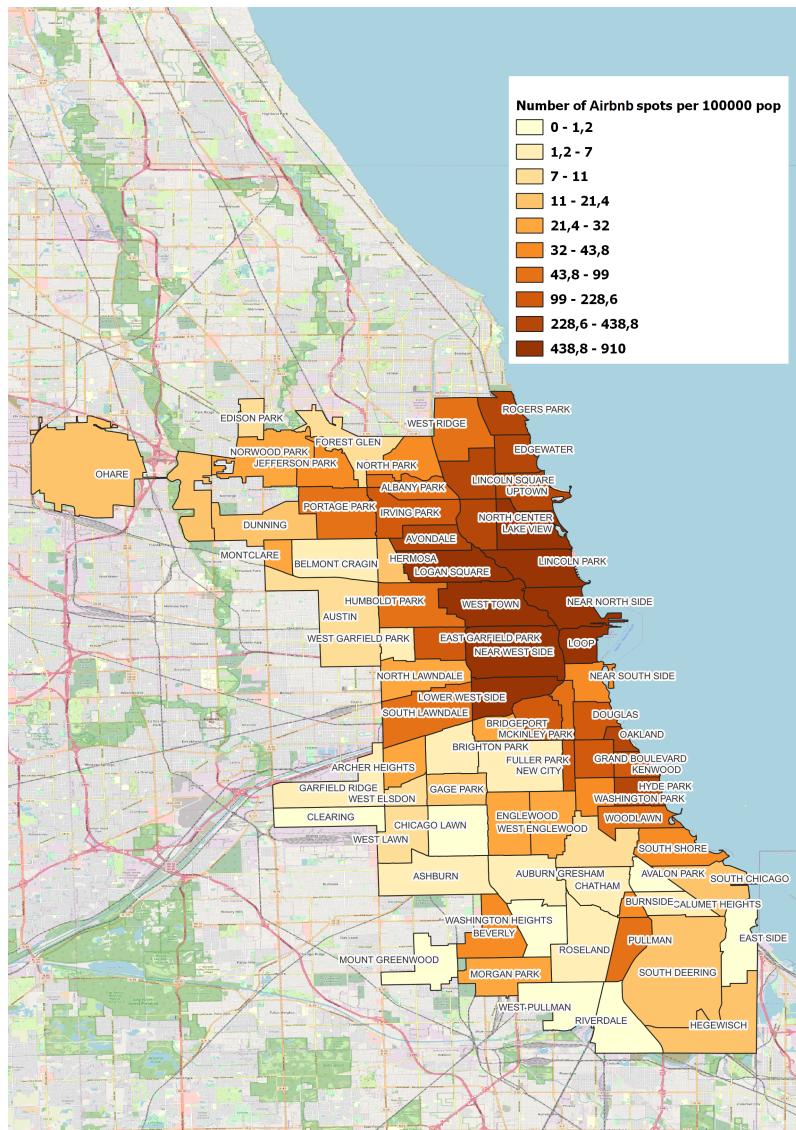
July 9, 2022

Working with Chicago Airbnb data.

Here we will show some data about the Airbnb spots in Chicago and some relations with socioeconomic indicators of the areas that compound it. To this end, then, we will use a database about Airbnb spots, socioeconomic indicators, and crime by community area in Chicago.

So, in Figure 1 we show a map in which we can visualize the number of Airbnb spots in each community area of the city of Chicago. We used a map with ten deciles to show more about the heterogeneity of the variable, allowing a better understanding of the intensity with which the number of Airbnb spots is distributed across Chicago. We can see that Northeast Chicago has the more number of Airbnb spots.

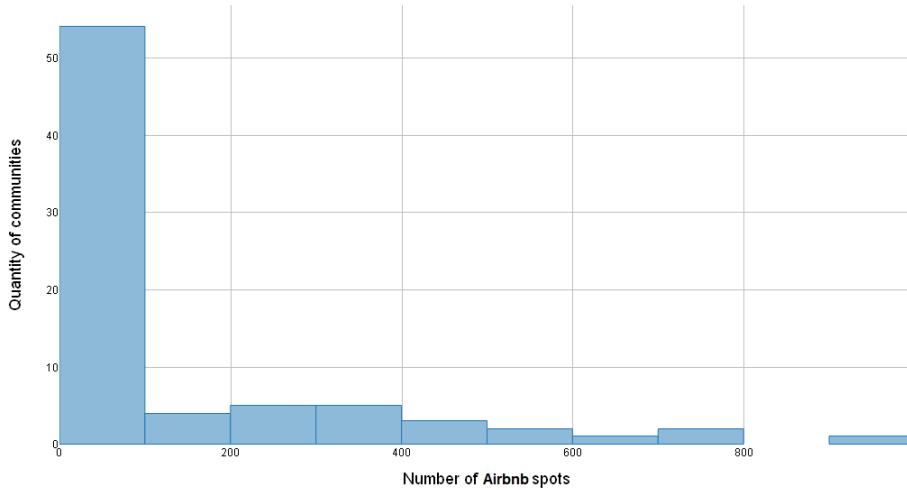
Figure 1: Number of airbnb spots in every area of Chicago.



Source: Own elaboration based on data provided by Rodrigo Valdes.

This kind of relation can be seen in the histogram of Figure 2. There, the number of communities with a high number of Airbnb spots is very low, meanwhile, more than 50 communities has less than a hundred of Airbnb spots per 100000 population. The histogram is clearer to show this than Figure 1 because we can show the frequency with which different amount of Airbnb spots appear.

Figure 2: Number of Airbnb spots in Chicago



Source: Own elaboration based on data provided by Rodrigo Valdes.

But, why ? To answer this question, we show the areas with more income per capita in Figure 3. In general, the relation is clear: areas with more income per capita has more Airbnb spots. This fact is also founded when we plot the number of spots against the income per capita like in Figure 4, using this type of graph to visualize the correlation between both variables.

Figure 3: Income per capita in Chicago.

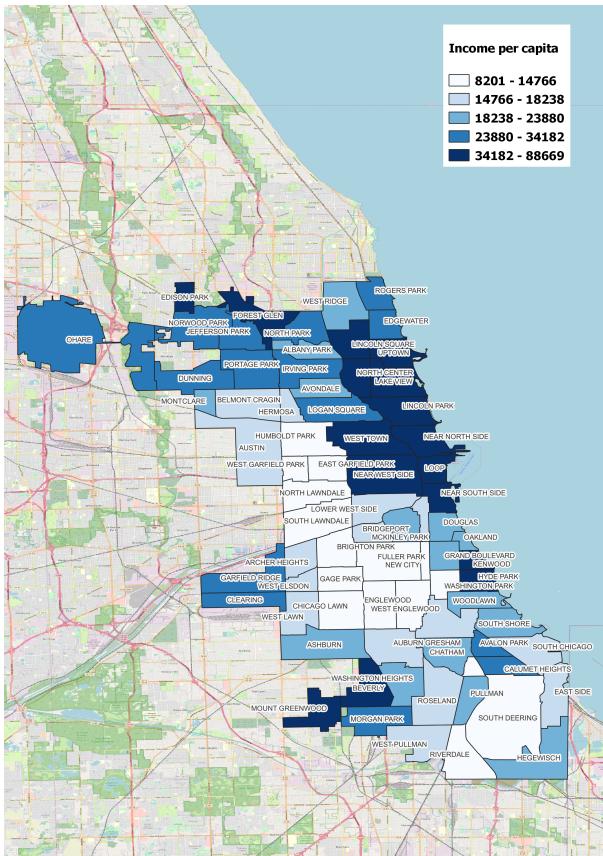
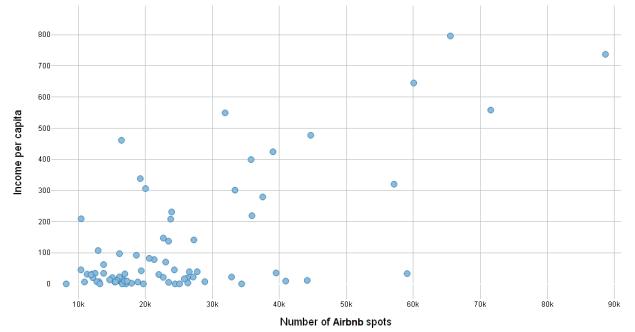


Figure 4: Income and spots relation



Source: Own elaboration based on data provided by Rodrigo Valdes.

But we got two clear exceptions, Mount Greenwood and Washington Heights Beverly. These could be related to a lot of factors, but we had the hypothesis that these areas are more insecure, so demand for Airbnb spots is weak¹ and then supply is low. Then, in Figures 5 and 6 we show these.

Figure 5: Thefts per 100000 population

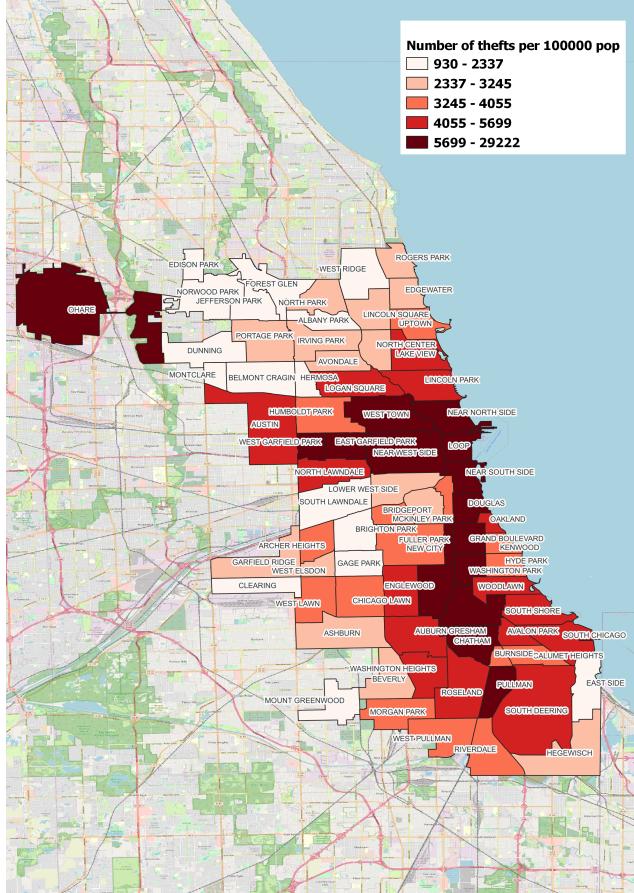
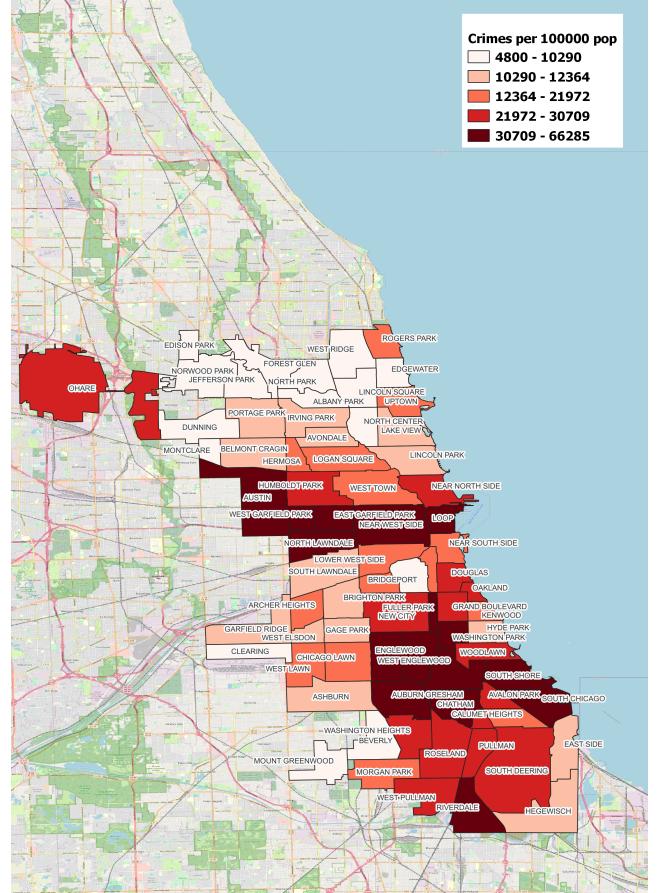


Figure 6: Crimes per 100000 population

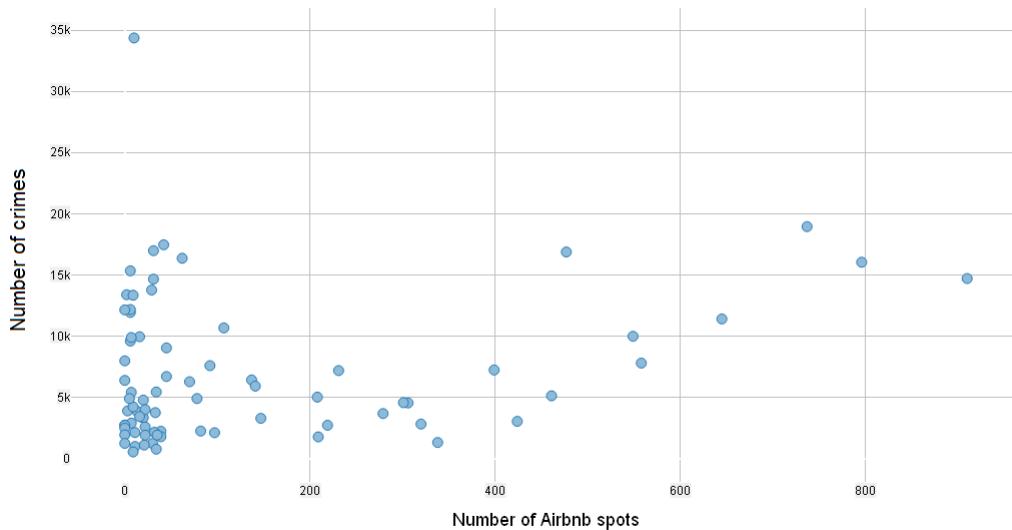


Source: Own elaboration based on data provided by Rodrigo Valdes.

But against our hypothesis, crimes and thefts are not, *a priori*, something that determines where are the most Airbnb spots. This is also shown in the next figure where we plot the number of spots per 100000 population against the number of crimes (Figure 7). As we could infer previously, the relation is not clear.

¹If a big part of the demand is for tourists motives, it could also be that these areas do not have tourist attractions, but suppose attractions are homogeneous across Chicago.

Figure 7: Airbnb spots and crimes in Chicago.



Source: Own elaboration based on data provided by Rodrigo Valdes.

Working with Buenos Aires data.

Here we will show two socioeconomic indicators of the Province of Buenos Aires and the Autonomous City of Buenos Aires (CABA by its acronym in Spanish). First, we will look at the Unsatisfied Basic Needs indicator that sheds light on families that are in a situation of worrying poverty. Second, we will analyze the unemployment rate.

The choice of the type of map responds to the objective of highlighting the visualization units, in this case, the departments of the Province and City of Buenos Aires. The chromatic scale, organized by deciles, makes it possible to differentiate by intensity the distributions of different rates of unemployment and also of unsatisfied basic needs (UBN).

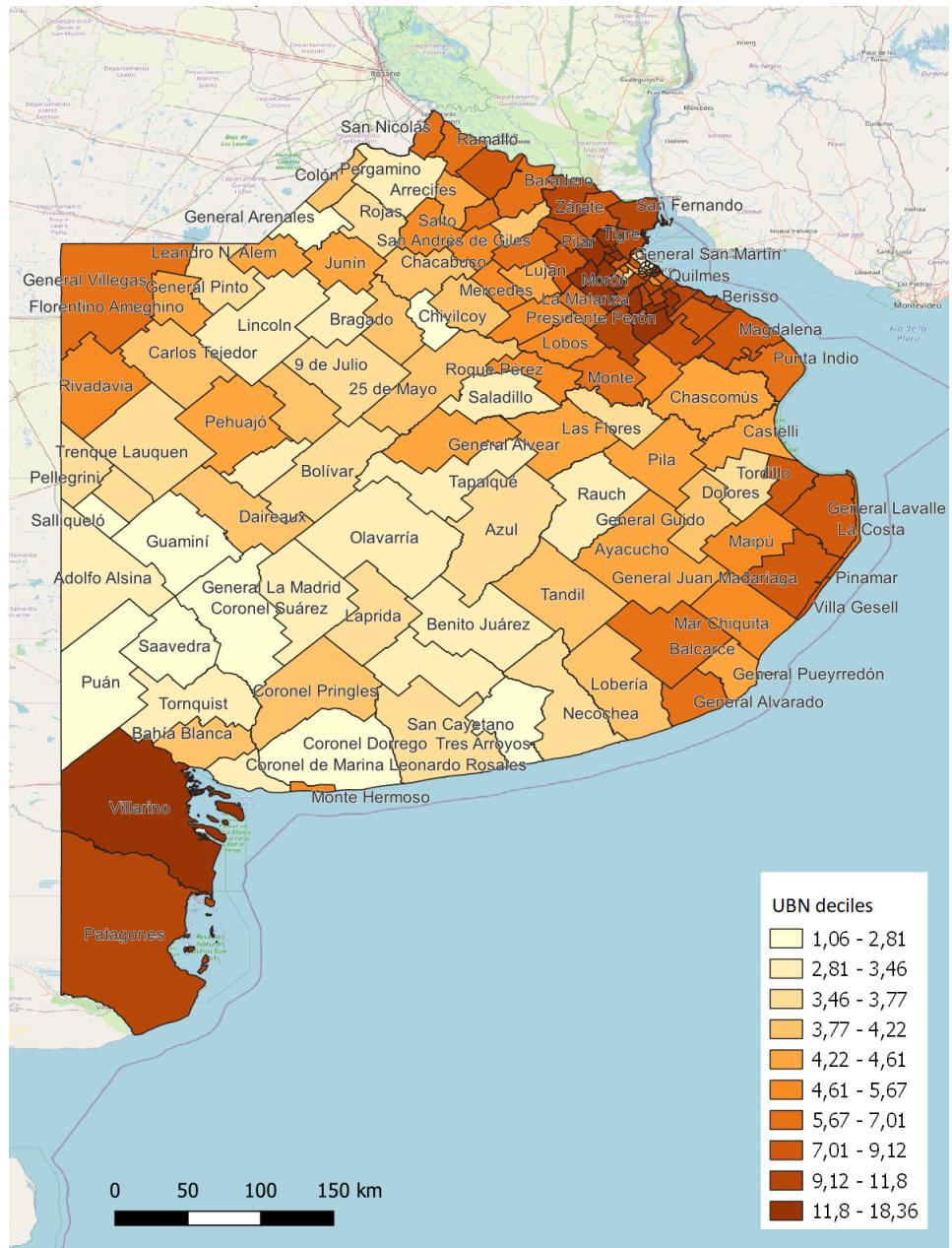
In Figure 8 we show the percentage distribution of unsatisfied basic needs by deciles for the province of Buenos Aires and Buenos Aires City shows that Presidente Perón department has 18.36% of the population under UBN. In turn, the department of Saavedra is the one with the lowest rate, 1.06%.

In the Autonomous City of Buenos Aires, the ranking of the communes with the highest percentage of people with UBN is made up of communes 1, 3 and 8 with 16.37%, 14.57% and 11.77% respectively.

In the Province of Buenos Aires the departments can be analyzed under the aggregate category of electoral sections, in this sense, the second and third sections present the highest levels of unsatisfied basic needs, the range is between nine and fourteen percent of the population under UBN.

On the other hand, the departments with the lowest level of urbanization in the Province of Buenos Aires present UBN levels of around 4%, the only exception being the department of Villarino (16.37%) and Patagones (9.56%) in the south of the province of Buenos Aires.

Figure 8: Unsatisfied Basic Needs deciles in percentage. Province of Buenos Aires and Autonomous City of Buenos Aires



Source: Own elaboration based on Instituto Nacional de Estadística y Censos (INDEC Argentina)

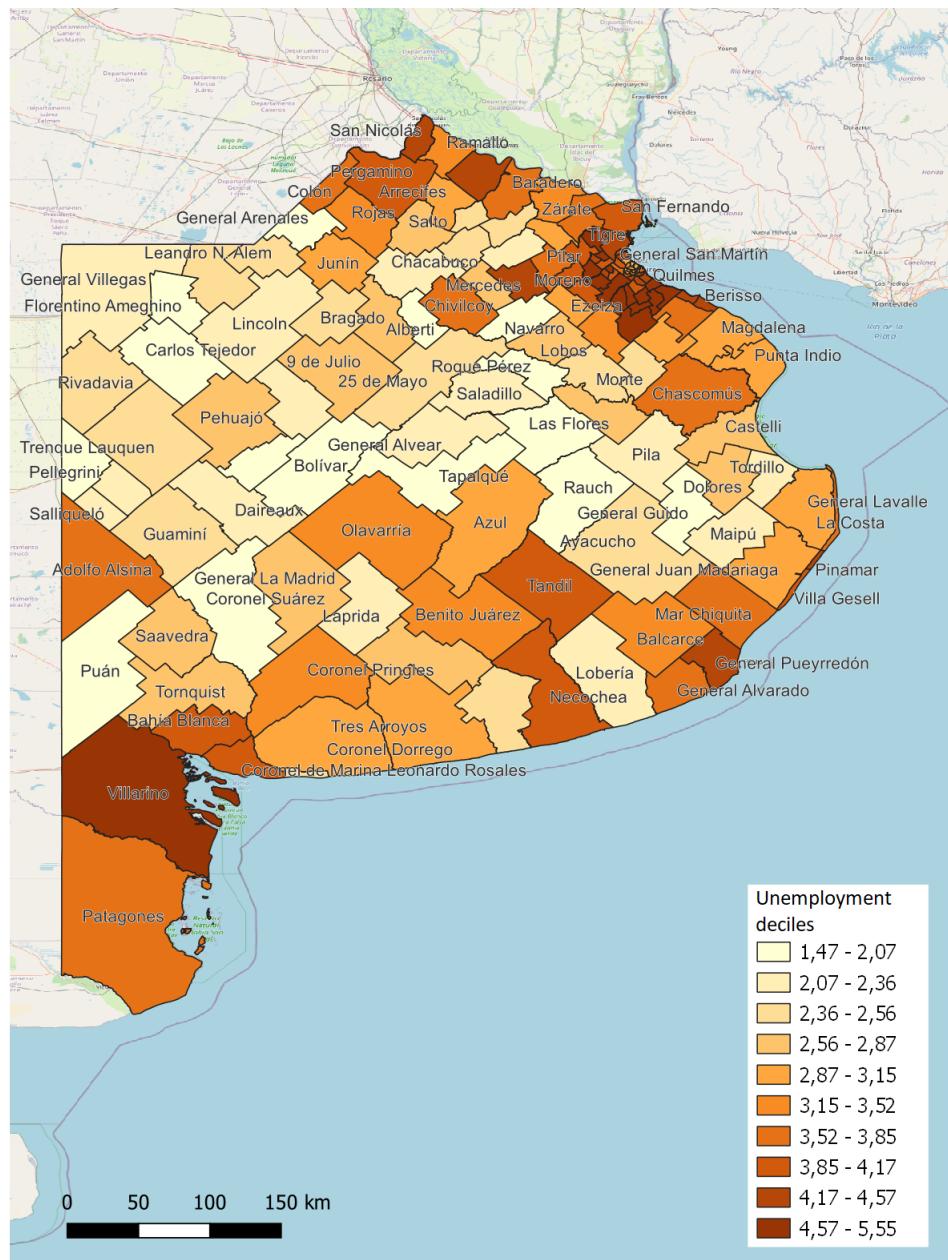
In figure 9 we show the distribution by unemployment rate deciles for the Province of Buenos Aires and the Autonomous City showing that the departments with high levels of unemployment are found in the metropolitan area.

To have a general idea of the range of unemployment, the extreme values are the department of Villarino with 5.55% of unemployed people, while the lowest department is Carlos Tejedor with a rate of 3.9% respectively.

In comparative terms, the metropolitan area of Buenos Aires has higher levels of unemployment than the city of Buenos Aires. The first 15 positions are populous departments of the province such as Florencio Varela, Ezeiza, Moreno, Berazategui with 5.55, 5.26, 5.15 and 5.04% respectively. On the other hand, the departments with the highest rate in the City of Buenos Aires, are communes 8, 4 and 9 with 4.57%, 4.53% and 3.81% unemployment

respectively.

Figure 9: Unemployment deciles in percentage. Province of Buenos Aires and Autonomous City of Buenos Aires



Source: Own elaboration based on Instituto Nacional de Estadística y Censos (INDEC Argentina)