

## **Part II: Study Area and Research Background**

### **Part II(a): Metropolitan Buenos Aires, Argentina**

Buenos Aires is the capital and largest city of the Republic of Argentina, a country of over thirty-three million people at the bottom of South America. More specifically, Buenos Aires—and its metropolitan area—is on the shores of the Rio de la Plata, a large estuary on the country's eastern coast. One of the largest urban areas in Latin America, over a third of Argentina's total national population lives within Buenos Aires' conurbation (Blanco and Apaolaza 2018). Sprawling outward from the city's historic center and port, five-hundred years of development has produced a massive, dynamic metropolitan region that extends for kilometers in each direction across the flat topography of littoral Argentina.

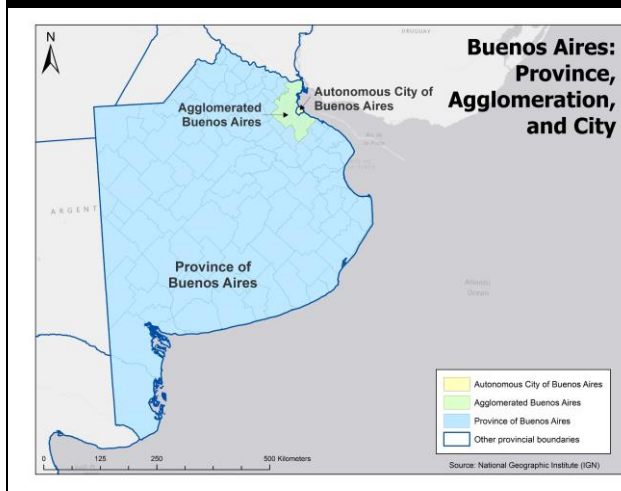
Originally a port town built on the processing and export of crops and minerals from the country's interior, Buenos Aires is now a major metropolitan center—both for the country of Argentina, the region of Latin America, and the entire globe—with over thirteen million residents and responsible for half of Argentina's national GDP. While its fortunes and economic well-being have waxed and waned over the centuries, it has always attracted a continuous flow of migrants, whether from the Argentine hinterland or its South American neighbors, seeking employment and an increased quality of life (Keeling 1996). This paper explores the degree to which those people forced to settle in Greater Buenos Aires' informal suburban neighborhoods—known as *asentamientos*—can access, via the region's massive public transit system, important destinations and activity sites within the conurbation.

Before delving into the history and geography of Buenos Aires' informal housing communities or its public transportation network, I will begin by defining the spatial unit of analysis for this project: “Agglomerated Buenos Aires.” Agglomerated Buenos Aires, or the *Agglomerado de Buenos Aires* (hereafter *AGBA*), as it is known in Spanish, is the technical name for the geographic area occupied by each of the administrative districts that the Argentine census authority (*Instituto Nacional de Estadística y Censos*—National Statistics and Census Institute or *INDEC*) has deemed part of the metropolitan area surrounding the centrally-located City of Buenos Aires (Gemini 2003). *AGBA* is designated to include the Autonomous City of Buenos Aires (*Ciudad Autónoma de Buenos Aires*—hereafter *CABA* or the Federal Capital), which anchors the entire conurbation, and thirty-two adjoining departments of the adjacent *Province of Buenos Aires*, together forming a large ring to the north, east, and south of the City.

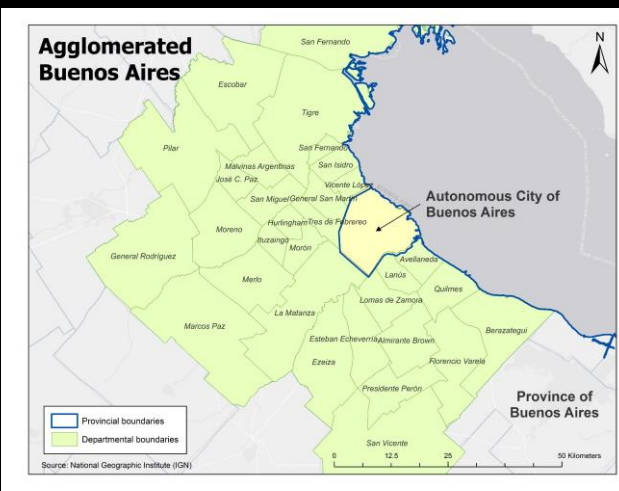
**Figure 2.1: Republic of Argentina**



**Figure 2.2: Buenos Aires Province**



**Figure 2.3: Agglomerated Buenos Aires**



While CABA is fairly small and bears the formal title of “City”, it operates politically as a province (the first-level administrative level in Argentina) and is an independent entity (it has its own mayor and legislature) from the similarly-named *Province of Buenos Aires* (which, despite its name, does not actually govern its namesake city and, furthermore, has its own capital and legislature in the city of La Plata, sixty-kilometers southeast of CABA). As with any other province in Argentina, the Province of Buenos Aires is divided into a series of second-level administrative areas known as *departamentos* (hereafter departments), several-dozen of which are located within CABA’s suburban sphere. While many of these departments are similar in size to CABA when seen on a map, they are governed by the provincial legislature in La Plata and possess little political autonomy. Lastly, it must also be noted that the federal government of Argentina (including the presidential palace, the legislature, and all bureaucratic headquarters) is based within the CABA federal district. As discussed later regarding transport planning and housing policy, these political distinctions, especially between province and department, are very relevant.

To manage the confusion regarding administrative areas, INDEC devised a classification scheme to determine which departments belong to the metro area as well as dictating an official name for this collection of political units. They start by noting that the historic way to define those provincial departments that encompassed Buenos Aires’ suburban sprawl is Greater Buenos Aires (*Gran Buenos Aires* or GABA)—an area that includes CABA and the adjacent twenty-four departments within the province: Almirante Brown, Avellaneda, Berazategui, Esteban Echeverría, Ezeiza, Florencio Varela, General San Martín, Hurlingham, Ituzaingó, José C. Paz, La Matanza, Lanús, Lomas de Zamora, Malvinas Argentinas, Merlo, Moreno, Morón, Quilmes, San Fernando, San Isidro, San Miguel, Tigre, Tres de Febrero, and Vicente López. Greater Buenos Aires, however, is only a descriptive term; there has never been a formal administrative unit or governmental body encompassing all these districts together. As will be shown, GABA contains those departments with the strongest historic and commercial ties to the City.

### Figure 2.4: Agglomerated Buenos Aires

Buenos Aires' core. Over time, suburban developments filled in vacant land in the departments immediately adjacent to CABA and then sprawled outward as people continued to migrate into and within the region (Gemini 2003).

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**Figure 2.5**

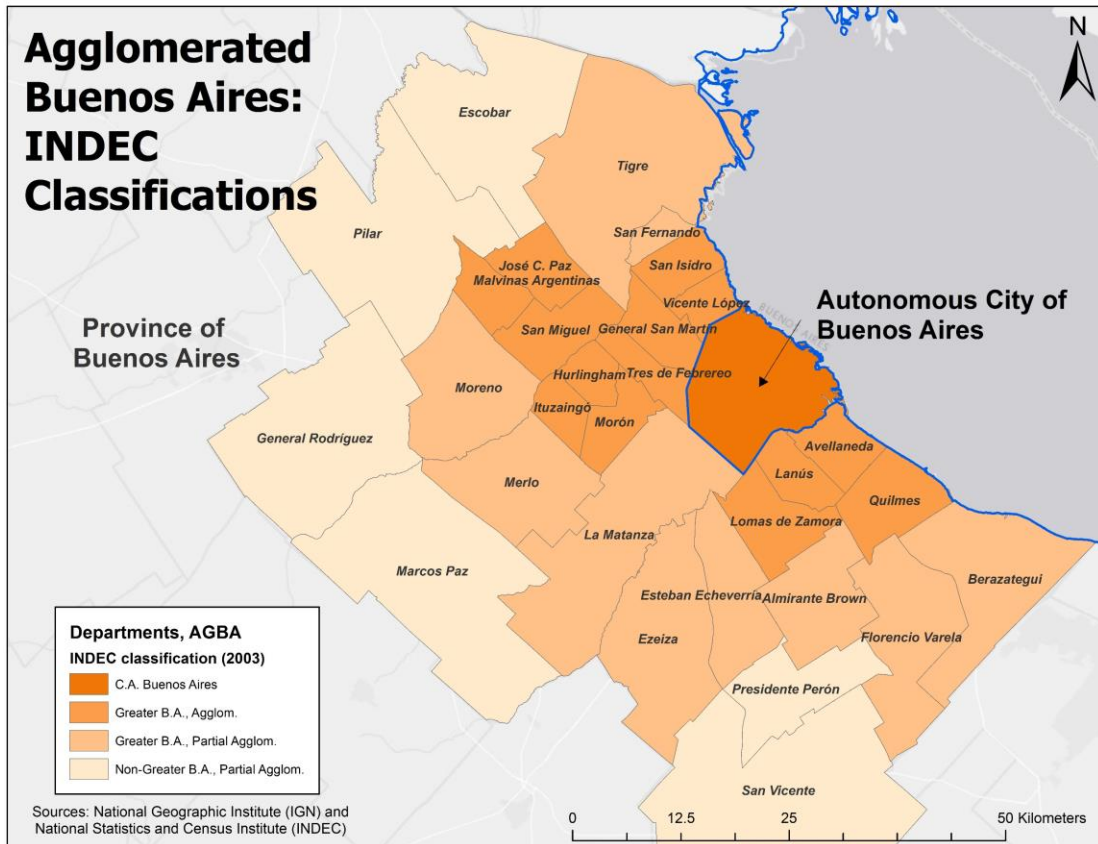
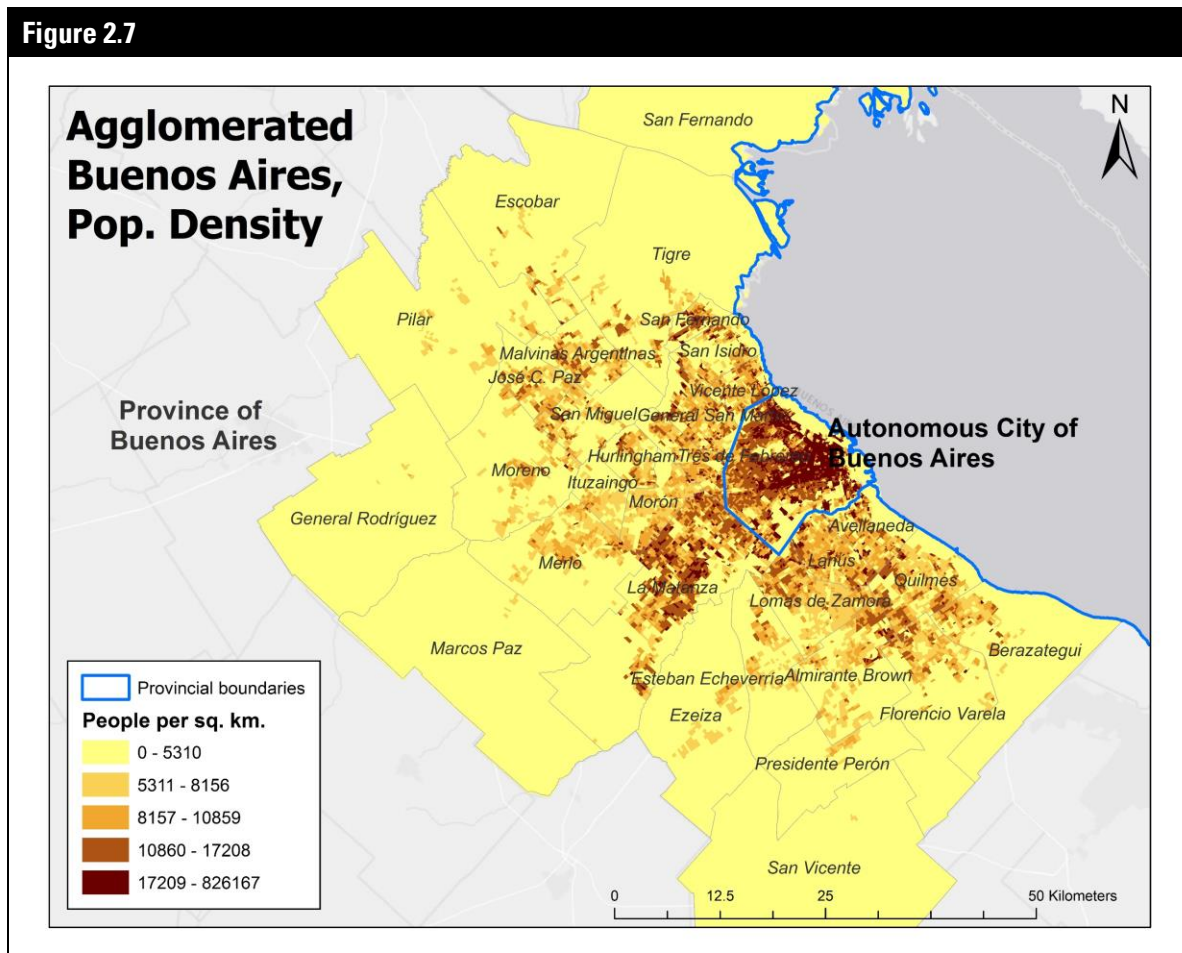


Table 2.6						
Department	Population (2010)	% of AGBA Population	Area (sq. km)	% of AGBA Area	Pop. Density (people/sq. km.)	Agglom., Class (2003)
C.A. Buenos Aires	2,890,151	21.55%	204.08	3.87%	14,050.67	CABA
Lomas de Zamora	616,279	4.58%	88.63	1.68%	7,037.23	GABA, Totally Agglom.
Quilmes	582,943	4.33%	91.91	1.74%	6,365.45	
Lanús	459,263	3.41%	50.20	0.95%	8,961.91	
General San Martín	414,196	3.08%	56.27	1.07%	7,354.78	
Avellaneda	324,677	2.55%	56.99	1.08%	6,088.92	
Tres de Febrero	340,071	2.53%	45.39	0.86%	7,444.32	
Malvinas Argentinas	322,375	2.40%	63.00	1.20%	5,113.58	
Morón	321,109	2.39%	55.29	1.05%	5,804.90	
San Isidro	292,878	2.18%	52.23	0.99%	5,603.50	
San Miguel	276,190	2.05%	83.51	1.58%	3,336.80	
Vicente López	269,420	2.00%	34.47	0.65%	7,793.95	
José C. Paz	265,981	1.98%	50.16	0.95%	5,305.54	
Hurlingham	181,241	1.35%	34.87	0.66%	5,122.64	
Ituzaingó	167,824	1.25%	38.06	0.72%	4,407.30	
Ring 1+ CABA	7,742,598	57.62%	800.98	19.07%	9,666.41	
La Matanza	1,775,816	13.20%	327.91	6.22%	5,432.18	GABA, Partially Agglom.
Almirante Brown	552,902	4.11%	129.04	2.45%	4,273.19	
Merlo	528,494	3.93%	174.53	3.31%	3,039.10	
Moreno	452,505	3.36%	185.48	3.52%	2,432.17	
Florencio Varela	426,005	3.17%	189.71	3.60%	2,244.50	
Tigre	376,381	2.80%	396.17	7.52%	953.55	
Berazategui	324,344	2.41%	220.11	4.18%	1,474.05	
Esteban Echeverría	300,959	2.24%	121.40	2.30%	2,481.45	
Ezeiza	163,722	1.22%	237.09	4.50%	689.06	
San Fernando	163,240	1.21%	24.41	0.46%	6,687.00	
Ring 2	5,064,368	37.64%	2,005.85	38.06%	2,524.80	
Greater Buenos Aires	12,806,966	95.26%	3,010.91	57.13%	4,253.52	
Pilar	232,463	1.73	385.57	7.32%	602.908	Non-GABA, Partially Agglom.
Escobar	178,155	1.32	301.97	5.73%	589.98	
General Rodríguez	87,491	0.65	367.36	6.97%	238.16	
Presidente Perón	60,191	0.45	120.48	2.29%	499.58	
San Vicente	44,529	0.33	658.69	12.50%	67.60	
Marcos Paz	43,400	0.32	425.831	8.08%	101.92	
Ring 3	616,229	4.80%	2,259.90	42.88%	272.68	
Agglomerated Buenos Aires	13,453,195	100.0%	5,270.81	100.0%	2,552.40	
Sources: Instituto Nacional de Estadísticas y Censos (2010); Gemini (2003)						

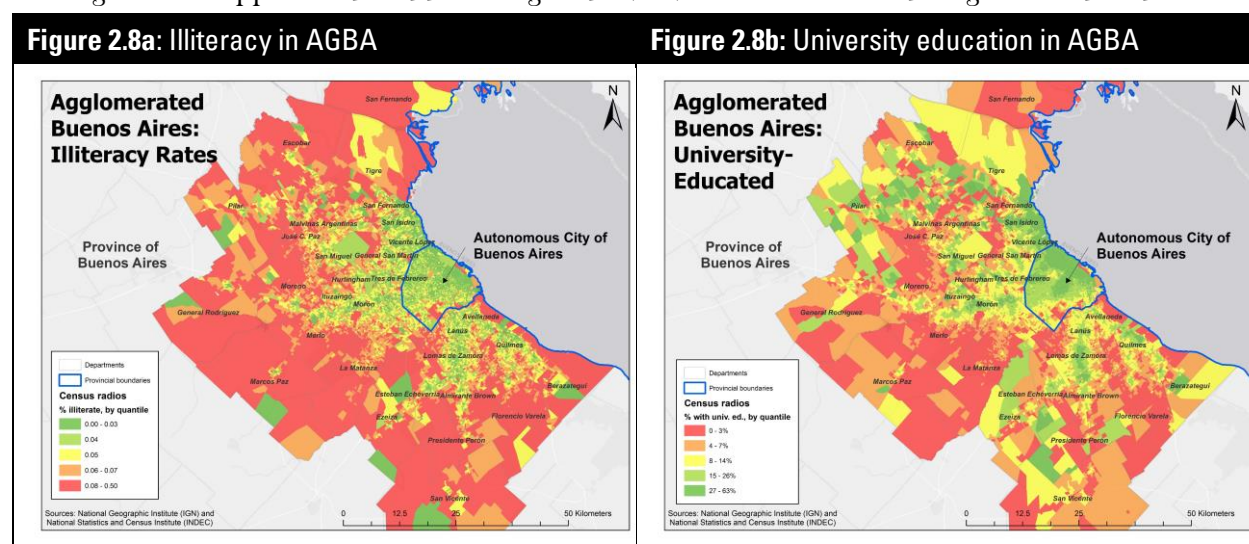


By reviewing additional datasets published by the Argentine federal government, including the *2010 National Census of Population, Households, and Housing*, carried out by INDEC, and commuting data produced by the Ministry of Transport, I learned more about the departments that comprise AGBA (Instituto Nacional de Estadísticas y Censos (INDEC) 2010). Looking first at population totals, the departments with the largest populations are those immediately surrounding CABA (itself with 3.2 million): four of the largest are La Matanza (1.4 million), Lomas de Zamora (0.7 million), Almirante Brown (0.5 million), and Quilmes (0.5 million). These are all departments classified as “entirely” or “mostly” urban; many of the least-populated are those located in AMBA’s suburban periphery: Presidente Peron (70,000) and San Fernando (200,000). **Figure 2.7** looks at a finer scale, considering patterns of population density across AGBA’s thirty departments. The highest densities are almost entirely within CABA’s boundaries, with axes of higher densities spreading out in all directions. This illustrates something that has historically characterized metropolitan Buenos Aires: high central densities that gradually decrease as one travels outward into the periphery. Any pockets of density outside of CABA are found along the city’s commuter railway lines (Van Gelder, et al. 2016). As will be explained below, the proliferation of the automobile during recent decades is changing this once-iconic pattern.



When it comes to income and socio-economic development patterns, the spatial distribution is quite similar. According to Blanco and Apaolaza (2018), “throughout its history, and in line with its Iberian colonial past, the central area of the city has maintained high material and symbolic value evidence in the residential predominance of the wealthier and more prestigious classes (pg. 3).” The inhabitants of the present-day federal district have long been wealthier than their suburban counterparts; the neighborhoods on CABA’s *northern* side—e.g. Recoleta, Palermo, and Núñez—are some of its most luxurious. Looking beyond the boundaries of the federal capital, however, reveals a continuation of this north-south wealth gradient. Since the nineteenth century, the region’s upper classes have lived on its northern side—both within the city and within the adjoining departments—while working and middle class porteños have called the southern and western neighborhoods (traditional centers of shipping and manufacturing) homes (Van Gelder, et al. 2016). Consequently, housing informality patterns follow this trend.

Unfortunately, INDEC—or any other Argentine public agency—does not publish any spatial data directly related to income to illustrate these trends. However, it does publish a wide variety of other datasets (acquired via the *2010 census*) concerning population and demographics, household characteristics, and housing quality which serve as mappable proxies for income (INDEC 2010). For instance, **Figures 2.8a-b** show illiteracy (inversely-related to income) and university-education (positively-related), respectively. While there are certainly pockets of “poverty” in just about every department, we can clearly see how illiteracy rates are much higher in the periphery than in the core; furthermore, many of the lowest rates are along the conurbation’s northern flank and immediately along transportation corridors (including those districts in the far north found along the motorways leading into the city). Some of the worst values for both metrics are in those zones furthest from the central business district and in the spaces between railroad lines, the very places we observe the *asentamientos* and other slum settlements in the periphery (Blanco and Apaolaza, 2018; Guerra, et al. 2018). The splotches of university-educated people in the suburbs are linked to the growth of upper- and middle-class gated suburbs in those zones during recent decades.



In 2009, the Ministry of Transportation carried out a survey—known as the Metropolitan Mobility Survey (hereafter referred to by its Spanish initialism, *ENMODO*) that surveyed 22,170 households from across AGBA—which, alongside its main goal of providing data on mobility, origins/destinations, and modal preference within the conurbation, also provided a snapshot of regionwide socioeconomic trends (Secretaría de Transporte (ST) 2011). For instance, 44% of all people are employed (with the majority—87%—in the private sector), 27% are students (two-third of whom are in public schools), and 12% are retired. In terms of schooling, more than half of all AGBA residents are believed to have, at most, a secondary-level education; 25.8% have either no education or partial completion of primary school and only 5.7% have anything above university-level. Before continuing, however, I will discuss the origin of ENMODO’s data, as I heavily utilize its data throughout this paper. The sample size, while large and inclusive of people from across the study area, is only a fraction of the total population (the ~70,000 people surveyed from the study households are just 0.5% of AGBA’s total population). While the survey made a concerted effort to survey riders of different backgrounds and travel mode proclivities, its representativeness, especially of underserved or marginalized groups, is taken with some caution.

Nevertheless, this paper focuses on just two of metropolitan Buenos Aires’ characteristics: its informal housing communities (i.e. the *asentamientos*) and its public transportation system. While these two topics may appear distinct, neither can be described or explained without the other; understanding the history of the transportation system is necessary for understanding the perceived lack of services within the *asentamientos*. At the same time, the specific locations of AGBA’s informal housing is clear reflection of its mobility landscape, making it difficult to tell the story of either feature in isolation of the other. As such, I will begin by briefly overviewing the current transportation system—because it is responsible, directly or indirectly, for a considerable amount of Buenos Aires’ contemporary urban geography—before delving into the characteristics and history of the *asentamientos* and informal housing in AGBA.

## **Part II(b): Transportation in Metropolitan Buenos Aires**

While volumes can be written on the various facets of metropolitan Buenos Aires’ public transportation system, I will profile two components critical to understanding the region’s informal housing crisis: (a) the spatial expanse of the system and its individual modes and (b) the variation in mobility trends and modal preferences between socioeconomic groups.

Showcased on **Figure 2.9**, agglomerated Buenos Aires has a massive transportation system. Emanating outward from CABA and its central business district, the entire network features thousands of kilometers of commuter railways, subways, highways, and bus lines countless other forms of informal transit and non-motorized travel, all of which crisscross the territories of CABA and all the departments in AGBA (totals are summarized in **Table 2.10**). The suburban railway network—consisting of seven radial commuter lines (**brown** on **Figure 2.9**) and 259 stations—consists of 800 kilometers of track alone! At the same time, there are over 340 bus lines (shown in **teal**, a total length of 11,000 kilometers), serviced by 170 individual companies that operate 17,000 total units (CAF 2011). While there is a subway (**yellow**), it is entirely within CABA’s boundaries. Filling in the rest of the territory are motorways (**light yellow**) and national/provincial routes (**red**).



Figure 2.9

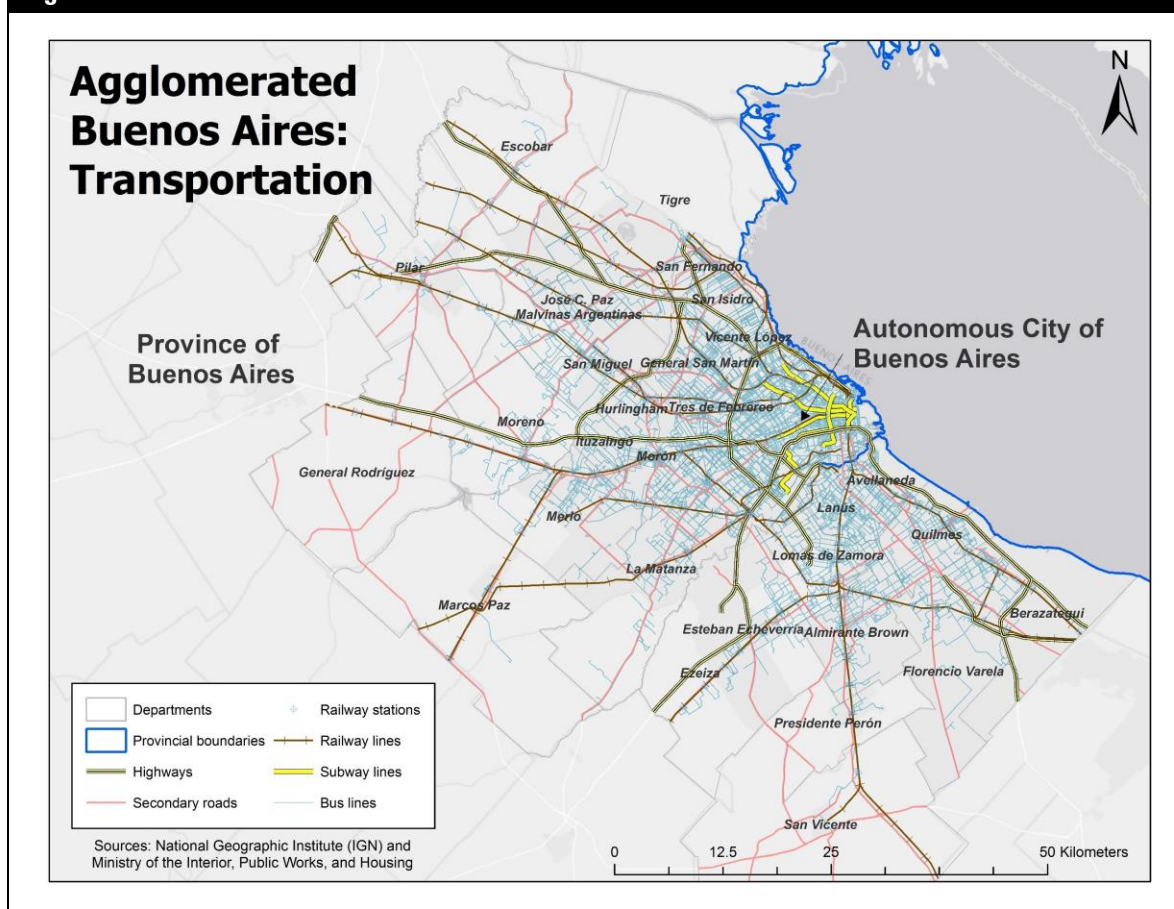


Table 2.10

Geographic Area	Railroad trackage (km)	Railroad Stations	Bus Route Length (km)	Subway trackage (km)	Motorways (km)	National/ Provincial Routes (km)
<b>C.A. Buenos Aires</b>	84.97 km (12.62%)	43 (17.92%)	2,916.34 km (25.59%)	62.14 km (100.0%)	56.35 km (16.2%)	69.45 km (5.51%)
<b>GABA, Totally-agglom.</b>	190.21 km (28.23%)	93 (38.75%)	4,074.57 km (35.76%)	0.00 km (0.0%)	108.41 km (31.2%)	313.48 km (24.88%)
<b>GABA, Partially-agglom.</b>	231.06 km (34.30%)	73 (30.42%)	3,520.47 km (30.90%)	0.00 km (0.0%)	114.90 km (33.0%)	441.15 km (35.01%)
<b>GABA</b>	<b>506.24 km (75.14%)</b>	<b>209 (91.67%)</b>	<b>10,511.38 km (92.24%)</b>	<b>62.14 km (100.0%)</b>	<b>279.65 km (80.44%)</b>	<b>824.08 km (65.41%)</b>
<b>Non-GABA, Partially-agglom.</b>	167.48 km (24.85%)	19 (7.92%)	883.76 km (7.76%)	0.00 km (0.0%)	68.00 km (19.56%)	435.86 km (34.59%)
<b>AGBA</b>	<b>673.72 km</b>	<b>228</b>	<b>11,395.14 km</b>	<b>62.14 km</b>	<b>347.66 km</b>	<b>1,259.94 km</b>

Sources: National Geographic Institute (IGN) and Ministry of the Interior, Public Works, and Housing (2018)

**Figure 2.11a** – Constitución, a major rail terminal



**Figure 2.11b** – Retiro, the second major rail terminal



**Figure 2.11c** – typical CABA subway platform



**Figure 2.11d** – typical CABA subway car, Line B



**Figure 2.11e** – suburban rail station under renovation



**Figure 2.11f** – typical suburban rail station



**Figure 2.11g** – typical city bus (a *colectivo*)



**Figure 2.11h** – street-car line/tram in CABA

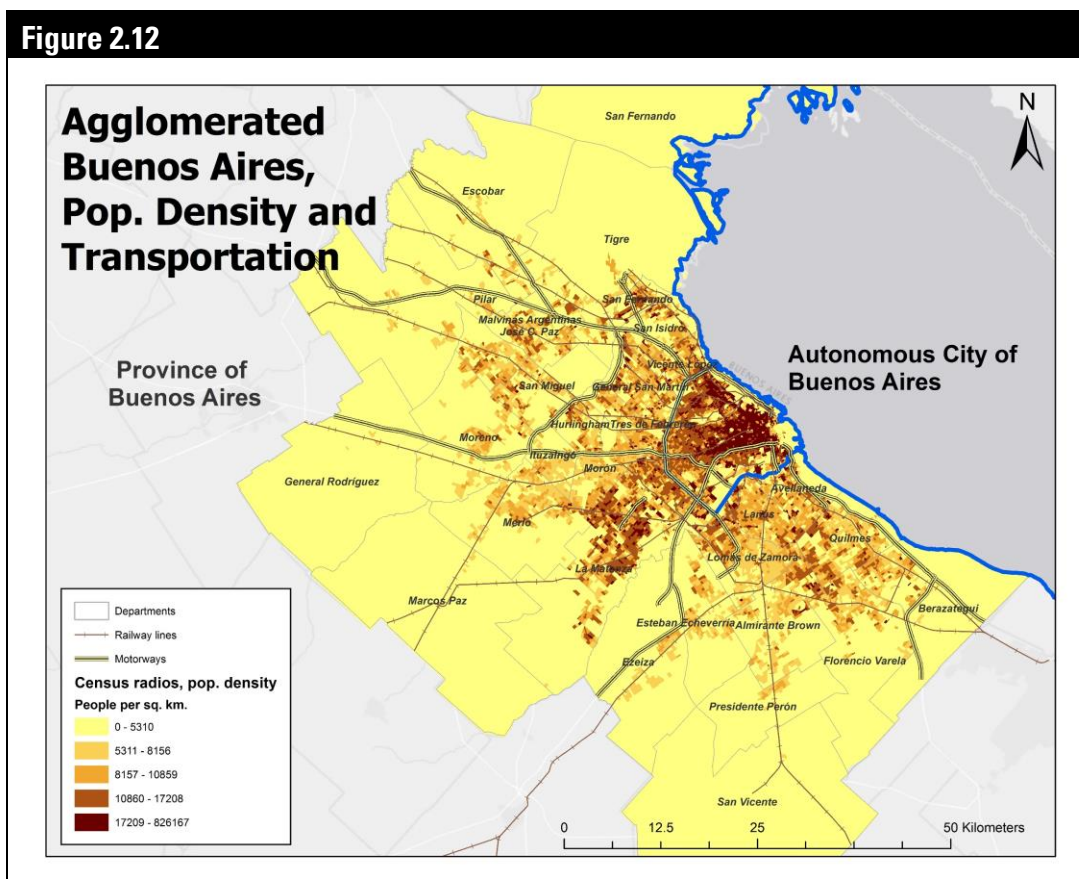


An assortment of photos from Buenos Aires' transportation system.



When looking at the spatial extent of the network, there are some striking trends. For one, the areas of densest transit coverage are in CABA and the districts immediately surrounding the federal district; coverage is substantially more dispersed in suburban departments. Second, the roadways and highways display a radial pattern, with nearly every line culminating somewhere within CABA and a near total lack of circumferential beltways (in contrast, as will be seen, to actual commuting trends in recent years). Buses, meanwhile, have the most extensive coverage, facilitating access within interstitial spaces between rail lines. The region's flat topography has allowed each mode—albeit at different times in history—to easily sprawl in all directions away from the city's center and port, with few barriers to growth other than each other (Lascano-Kezic and Durango-Cohen 2012). The recent boom in highway construction has unsurprisingly followed suit.

Considering these route networks vis-à-vis population density patterns (**Figure 2.12**) showcases the important relationship between housing and mobility in Buenos Aires. While the history is explored in depth below, this population pattern is a direct consequence of the temporal evolution in the transportation technologies available for workers to commute towards their jobs in the city center: the initial railroads produced high densities around their fixed routes and stations while the subsequent buses allowed for housing developments to sprawl across the remaining landscape, shuttling passengers to either the nearest station or directly into the city center via an expanding network of roads.



As a result, formal neighborhoods were built anywhere within a manageable travel of the federal district, which has largely remained the core of employment throughout AGBA. As the conurbation grew outward, the innermost departments of the metro area have become entirely urbanized (some possessing miniature central business districts of their own). Any land that remains unoccupied and beyond the reach of developers is either undesirable (oftentimes they are riverbanks prone to flooding—the only physical obstacle on the otherwise-flat landscape—or could be near dumps and polluted industrial land) or, as was historically the case in the departments furthest from CABA, too far away from jobs to reasonably commute.

What has begun to change the landscape, however, is the growth in automobile ownership. Cars, the newest major player on the mobility scene, are pushing the limits of low-density growth, with its newest suburbs closely resembling the auto-centric neighborhoods found around North American cities (at similarly-long distances from downtown). With this increase in individual mobility for some (car ownership is strongest among the wealthy), housing locations have changed and, as a result, so have employment centers, with service-type jobs scattered across the departments of AGBA (rather than before, when work was primarily in CABA’s governmental, financial, or industrial areas). More people live and work outside of the federal district than ever before (see Table 2.13 below) although, as is seen on the map, the transport system has yet to catch up to this trend, i.e. the lack of transversal links and persistent density of transit in the core (Keeling, 1996; ST 2011). These territorial dynamics—echoed in Blanco and Apaolaza (2018)’s statement that “due to the unequal distribution of infrastructures and the severe social fragmentation between different areas of [AGBA], differential mobility is also closely associated with ... territorial structure”—contribute to my hypothesis that peripheral *asentamientos* will see longer travel times to activity sites than more established, central neighborhoods (pg. 5).

**Table 2.13 – Distribution of trips, by origin and destination**

Origin ↔ Destination	All Trips	Mode					Purpose		
		Bus	Rail	Subway	Car	Non-Motor.	Work	Study	Health
CABA ↔ CABA	24.6%	22%	5%	60%	22%	23%	27%	25%	25%
CABA ↔ GABA	14.1%	23%	56%	40%	18%	0%	20%	8%	14%
GABA ↔ GABA	61.3%	54%	39%	0%	60%	76%	53%	66%	61%

Source: ST 2011

Alongside its physical expanse, the other aspect of AGBA’s transportation system worth discussing is the modal split and how it varies by income. Looking first at the entire region, most trips—according to ENMODO—are made on public transport (43%); only 26% are made privately (i.e. primarily personal autos but also include taxis) and a remarkable 31% are *non-motorized* (i.e. walking and biking). As for specific modes, buses (or *colectivos*, as they are known locally) are most common, taken for 39% of trips. Walking-based trips are next (24%), followed by private car (12%) and train/subway (10%). The relative prominence of public transit and walking, at least in

comparison with driving, contrasts starkly with the automobile-centric cities of the United States and the Global North (in fact, only 64.9% of *porteños* own a car) (page 19). Lastly, mode is also related to trip length; most walking, bus, private car, or subway trips begin and end within the same or adjoining departments whereas train trips overwhelmingly begin in CABA and end in the provincial departments of AGBA (or vis-versa) (ST 2011). The introduction of income data, however, makes these findings even more interesting.

ENMODO, as a matter of fact, provides some insight into mobility trends vis-à-vis socioeconomics. Using households' self-reported monthly incomes, users were classified into one of five quintiles, the first being the lowest and the fifth being the highest (see **Table 2.13**). While these values are estimations extrapolated from the sample of households surveyed, and may not be fully representative of actual values, they still exhibit some important trends. For instance, lower quintile families are typically less educated (most with nothing more than a primary education) and have larger households. Even more importantly, they most spend, proportionally, more of their income on travel than wealthier households.

<b>Income Quintile</b>	<b>Quintile population (est.)</b>	<b>Average people per household</b>	<b>Average monthly income (pesos)</b>	<b>% of income spent on travel</b>	<b>Education Level, Mode</b>
<b>1st</b>	3.7 million	4.63	\$1,321	17%	Primary
<b>2nd</b>	2.8 million	3.41	\$2,193	13%	Primary
<b>3rd</b>	2.4 million	2.94	\$2,987	11%	Secondary
<b>4th</b>	2.1 million	2.62	\$4,116	9%	Secondary
<b>5th</b>	1.9 million	2.36	\$7,424	6%	Secondary
<i>ST, 2011</i>					

When considering the mobility trends of the different quintiles (summarized in **Table 2.14** below), lower-income groups overwhelmingly take public modes (84% of the lowest-quintile and only 59% of the highest) and vis-versa with the wealthy and private modes (over 40% of the two highest quintiles and a mere 15% of the lowest). Nearly a quarter of all trips taken on public transit, or on the bus, were taken by the lowest quintile while the opposite can be said for private modes and trips made with private automobile. This latter trend is emblematic of motorization trends in other cities in the Global South, where members of the higher classes gravitate increasingly towards private car travel as they increase their wealth (Vasconcellos 2001). This contrasts with perhaps one of the more striking income-based findings: that more than a third of walking trips are made by the lowest income bracket. Given that lower-income groups are primarily found in Buenos Aires' periphery, where transit networks are sparse, this perhaps suggests that these people are having to walk to activity sites rather than taking transit.



Table 2.14							
Income Quantile	Trip generation rate	Modal breakdown, people within an income quintile					
		Public Transit	Bus	Rail	Private	Auto	Non- Motor.
1st	1.36	23.3%	24.2%	22.4%	15.6%	13.9%	36.4%
2nd	1.46	20.5%	20.9%	20.0%	19.3%	19.2%	21.3%
3rd	1.53	18.9%	19.1%	19.3%	21.4%	21.2%	16.6%
4th	1.64	18.5%	18.2%	19.4%	21.4%	22.3%	14.0%
5th	1.78	18.9%	17.6%	19.0%	22.3%	23.4%	11.7%
ENMODO 20XX, pp. 20, 31, 35, 39, 45, 48, 50							

These statistics, as it turns out, were the subject of a recent paper on income, travel expenditures, and mobility in AGBA. Guerra, et al. (2018) modeled whether certain variables affected regional household travel expenditures. They found, unsurprisingly, that household income is a strong predictor of transport expenditures, especially when that household owned a car. While other variables—like distance from the center and households living in lower density neighborhoods—were found to be positive predictors of expenditures, the paper has limited application to this study because there is no way of differentiating the modal-specific spending habits of each household. Given that automobile ownership and upkeep is inherently more expensive than transit, these results are biased—for instance, they claim that job and transit accessibility increase expenditures—towards those who own cars, something few low-income Argentines will possess. Nevertheless, it is still striking—and an indication of the importance of this study—that three-times as many jobs are accessible to car-owning porteños than transit-takers.

After establishing some of the overarching trends related to transportation and mobility in the study area, I can now turn my attention to the primary object of study: *the asentamientos*.

### Part II(c): *Asentamientos*

While Metropolitan Buenos Aires’ public transportation system is an important component of this project, the main subject of interest is transit accessibility vis-à-vis another unique element—related, in this case, to housing—of the region: its *asentamientos*. *Asentamientos*, a Spanish term that roughly translates as “settlements”, are a type of informal housing community found exclusively *outside* of the federal district. They were initially founded as illegal, if well-organized, occupations of vacant land that, over time, are slowly transitioning towards becoming formal neighborhoods. Aided by state actions, they have theoretically benefited from the division and regularization of residential lots, provision of public services (e.g. plumbing, electricity, paved streets, etc.), and the ability of occupiers to eventually own the land upon which they settled and constructed their homes. Their inhabitants, meanwhile, are primarily migrants from Argentina’s interior provinces, immigrants from the countries that neighbor Argentina in South America, and locals unable to afford housing in any of Buenos Aires’ formalized neighborhoods.

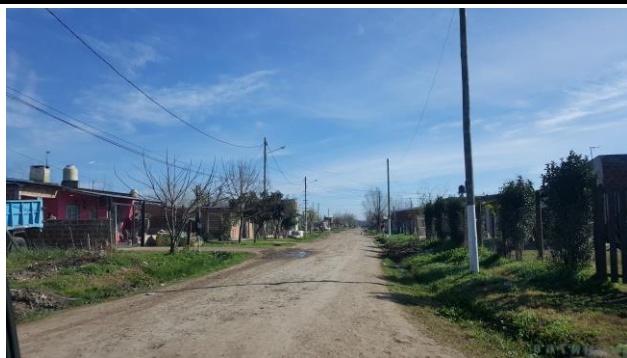
While all of these constitute the definition of *asentamiento*, perhaps the most important characteristic is that they are all located in the suburban periphery of the agglomeration (perhaps obvious given their characteristics), beyond the borders of CABA (Van Gelder, et al., 2013). This is important because it sets the *asentamientos* apart from the other primary type of informal housing in metro Buenos Aires, the *villa*. *Villas* are similarly illegal and home to destitute migrants but are instead located exclusively in the city's core; they exhibit high population densities (with very little vacant land in CABA, they are crammed onto miniscule plots of land), contain no formal street grids or urban form, provide residents with no path to land ownership, and see no formal services from the state or private utility companies.

As for the *asentamientos*, most got their start when a group of homeless families—most often people who were previously living in *villas* but unable to afford their own housing—collectively invaded an unoccupied tract of land in one of the conurbation's suburban departments. Given that progressive urbanization has already taken over most of the premium locations within these districts (*and therefore those with the greatest accessibility to opportunity sites*), most available vacant land is along riverbanks or near dumps, pollution-emitting factories, or dangerous infrastructure like railroads or high-voltage electricity lines (Keeling, 1996). In other words, land that would have already been developed if it had any commercial value.

Once settled in place, these people—depending on their neighborhood solidarity—began to formally take-over the territory by laying a rudimentary street grid (trying to connect with the local street pattern in whichever district they decided to settle), dividing up the land into individual parcels, and pressuring the authorities to provide essential services and awarding land ownership titles (Cravino, et al. 2007). Essentially a form of institutionalized illegitimacy, the *asentamientos* are both a means for families to illegally access land in the city while also putting themselves on a path to legal ownership of that land and, therefore, hoping to make amends with the same land titles laws they broke in the first place. A paradox in and of themselves, they are a unique product of Buenos Aires' history and have not been well-studied outside of Argentina.

Some photos of an *asentamiento* in the Pilar district are shown below.

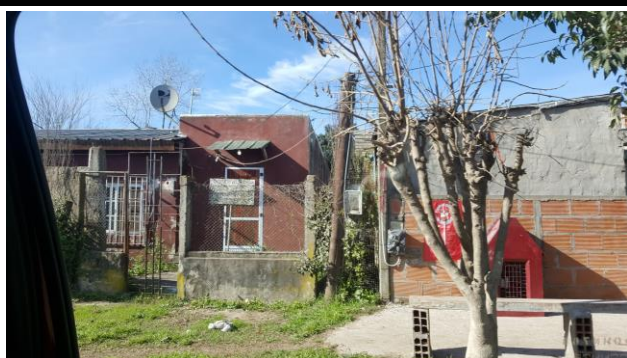
**Figure 2.15a** – Dirt streets are common, which are often impassible after a heavy rain



**Figure 2.15b** – The wall and gate of a self-constructed structure; some wires present



**Figure 2.15c** – Another self-constructed shelter, with some electricity wires present



**Figure 2.15d** – While uncommon in most settlements, some *asentados* can afford used automobiles



**Figure 2.15e** – a cement wall separating the *asentamiento* from a neighboring gated community



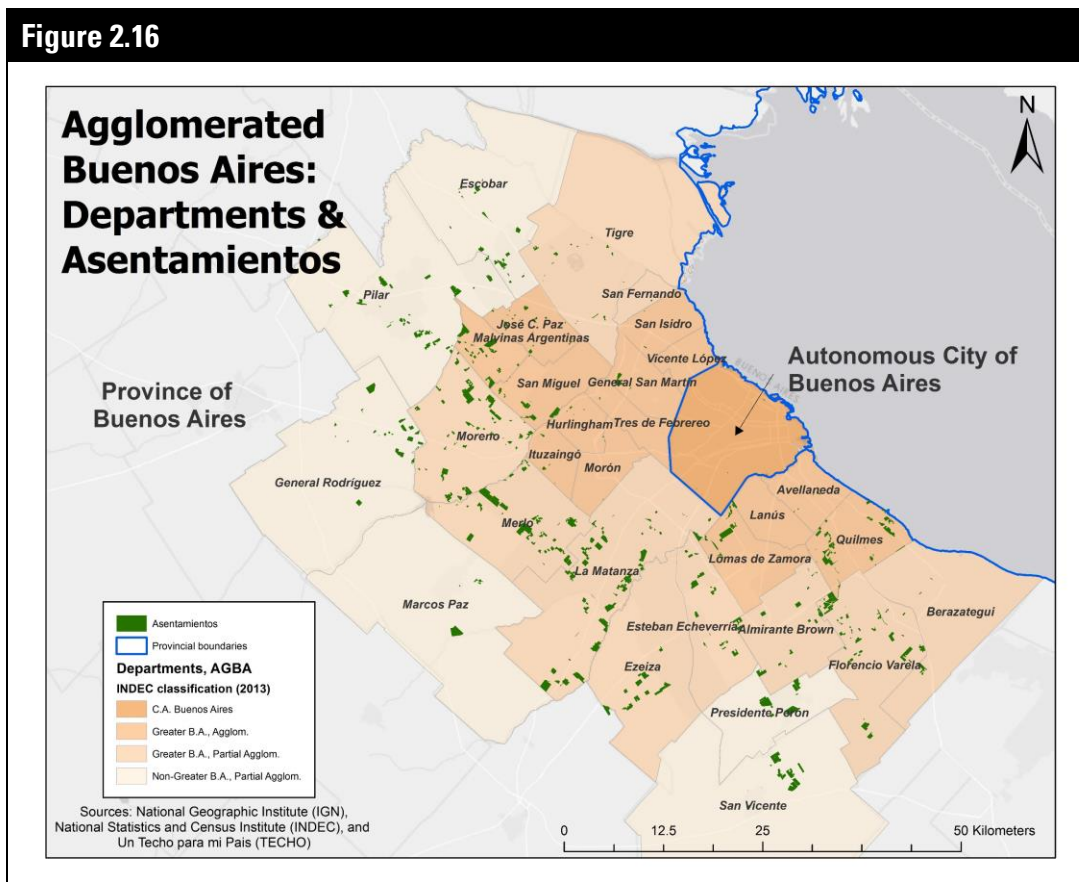
**Figure 2.15f** – a small convenience store/grocer within the neighborhood, a sign of permanence



The *asentamientos*' peripheral locations, seen on **Figure 2.16** below, contextualize some of their integral characteristics. For instance, they are often comprised of young families who need the additional space in these parts of AGBA to build home structures that accommodate greater numbers of people, whether children, grandparents, or siblings (*villeros*, meanwhile, often have little more than one room at their disposal). In fact, many of the families moving into the *asentamientos* come directly from a *villa*, the first place most migrants to Buenos Aires move when

arriving from an interior province on neighboring country. After establishing themselves in the city (and accruing some amount of money), *villeros* will then relocate outward to one of the more spacious *asentamientos*. This move can be an individual effort—if the family is moving to preexisting *asentamiento*—or collective, if a group of families is organized enough to establish a new *asentamiento* (a process that requires organizing and the pre-identification of vacant, invadable land in the suburbs). A difficult and risky process, *asentandos* are motivated by the prospect of eventually owning a piece of land that will provide them with greater residential security, an asset with economic value that can be passed on to future generations, and general stability for their new city lives (Cravino, et al. 2008, pg. 175-179; Van Gelder, et al. 2013).

**Figure 2.16**



It must be noted, however, that living in the *asentamientos* comes with many risks and challenges. Perhaps the most pressing, public services have been slow to manifest in most areas—residents still frequently lack access to clean drinking water, electricity, sewage removal, trash disposal, and *transportation*. Residents have either had to fight local authorities—as has been the case with schools and health centers—to provide these services or work together to provide their own (i.e. public spaces, communal eating halls, etc.). Few have gained full ownership of any land and others have struggled to gain access to credit or financial assistance, a consequence of banks refusing to lend to people whose home addresses are within a known *asentamiento*, to improve



their living situations. These funds are especially crucial for families who need to respond and rebuild after emergencies like floods, which often plague the low-lying *asentamientos*.

Unsurprisingly, education levels are also low, restricting employment to low-skill positions. Further exacerbating this already tenuous situation, many of these types of jobs are found in Buenos Aires' center or other centrally-located nucleations. Given the *asentamientos*' suburban locations and the metro area's poor-quality transit system, unemployment is exacerbated. As a matter of fact, families who elect to live an *asentamiento* over a *villa* must trade the job access of the centrally-located, albeit crowded and tenuous, *villas* for the more spacious but distant *asentamientos*. Additionally, *asentados* often face discrimination by employers, service-providers, and even emergency services who refuse to help people with home addresses in known *asentamientos*—they are popularly perceived as illegals, even in cases where they are well-organized or have acquired land ownership (Cravino, et al. 2008, pg. 132-133, 188-190).

I will now overview my two primary sources, both from within Argentina, for ethnographic and qualitative information on the *asentamientos*: a 2013 report produced by an NGO working on housing and a 2007 study by an Argentine sociologist. The Argentine government, as so happens, does not officially recognize or define the physical boundaries of the *asentamientos* and *villas*; this task has fallen upon academics and non-profit organizations. These studies serve to (1) provide hard data and survey results to confirm the dire conditions of inequality in the *asentamientos*, (2) highlight the need for further studies of their transit services and mobility options, and (3) foreshadow some of the parameters that I included in my methodology.

### **Part II(c.1): TECHO (2016)**

The best source for contemporary information and socio-economic data on the *asentamientos* and *villas* in Argentina is the non-profit organization “TECHO”, or “Un techo para mi país”.<sup>1</sup> Active throughout Latin America, TECHO specializes in housing policy and, among its many roles and functions in Argentina, has performed extensive surveys—often in coordination with other universities, government agencies, and civil society organizations—in the country's informal housing settlements (which it officially defines as *a collection of a minimum of eight families grouped together on contiguous territory, more than half of whom do not own the land and lack access to two of three basic services—running water, electricity, or sewage*) and produced an online map of their locations. Building on prior surveys carried out by TECHO's Center for Social Investigation, the most recent edition, from 2013, provided details on the quantity, location, and principle characteristics of the country's informal settlements. The goal of their survey was to provide dynamic housing information to authorities and fellow community organizers so that they can improve the services and housing rights guaranteed to all of Argentina's inhabitants.

Carried out across Argentina during April 2013, a coordinated team of volunteers interviewed—using a series of pre-determined, standardized questionnaires—residents of 1,834 settlements nationwide (*villas* and *asentamientos*). Data was collected on attributes commonly

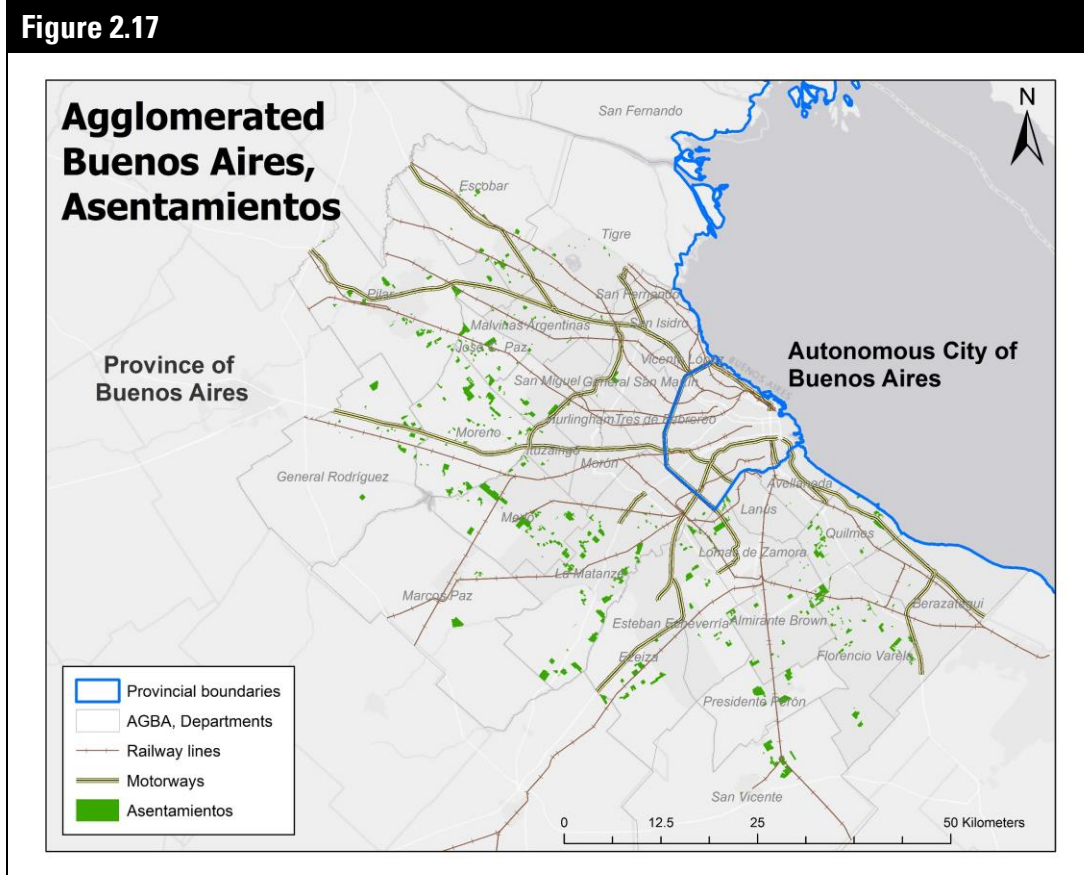
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<sup>1</sup> <http://www.techo.org/paises/us/>



associated with the settlements: status as *villa* or *asentamiento*, access to water, sewage, electricity, and gas; quality of roads; provision of street lighting; flood frequency; emergency service response rates; distance to services, and geographic coordinates. These data were cross-checked with existing surveys, government reports, and university studies, entered into an online database, and the location of each settlement geo-referenced. The last of these, new to TECHO's 2013 survey, was done to specifically help diagnose the accessibility of informal settlements to city services and infrastructure. While the project was carried out nationwide, the survey revealed there to be 786 precarious settlements in AGBA, 550 *asentamientos* and 236 *villas*. Nevertheless, as TECHO itself acknowledges, it is key to remember these data are from 2013 and that conditions and quantities may have changed since (Gregorini 2013).

TECHO's statistics on these *asentamientos* are contained in **Table 2.18**; listed by department, I tabulated the number of communities, their quantities of families, total areas, densities, and populations relative to the rest of AGBA.



**Table 2.18**

Department	% of AGBA Population	No. of <i>Asent.</i>	% of all <i>Asent.</i> in AGBA.	No. of fam. in <i>Asent.</i> (est.)	% of AGBA fam. in <i>Asent.</i>	Families per <i>Asent.</i>	Area of <i>Asent.</i> (sq. km.)	% of Dept. Pop. in <i>Asent.</i>	% of Dept. Area with <i>Asent.</i>
C.A. Buenos Aires	21.55%	0	0.00%	0	0.00%	0.0	0	0.00%	0.00%
Quilmes	4.33%	43	7.40%	19,995	8.55%	465.0	5.44	15.78%	5.92%
José C. Paz	1.98%	26	4.48%	6,575	2.81%	252.9	4.10	11.37%	8.18%
Malvinas Argentinas	2.40%	20	3.44%	3,495	1.49%	174.8	1.10	4.99%	1.75%
Lomas de Zamora	4.58%	17	2.93%	11,440	4.89%	672.9	2.98	8.54%	3.40%
San Miguel	2.05%	17	2.93%	7,642	3.28%	449.5	2.74	12.73%	3.32%
Ituzaingó	1.25%	12	2.07%	819	0.35%	68.3	0.29	2.24%	0.76%
Hurlingham	1.35%	11	1.89%	3,011	1.29%	273.7	0.68	7.64%	1.92%
Avellaneda	2.55%	7	1.20%	2,305	0.99%	329.3	0.24	3.09%	0.43%
General San Martín	3.08%	6	1.03%	6,245	2.67%	1,040.8	0.83	6.94%	1.47%
Lanús	3.41%	5	0.86%	2,200	0.94%	440.0	0.36	2.20%	0.70%
Morón	2.39%	3	0.52%	125	0.05%	41.7	0.02	0.18%	0.04%
San Isidro	2.18%	3	0.52%	320	0.14%	106.7	0.06	0.50%	0.11%
Tres de Febrero	2.53%	2	0.34%	315	0.13%	157.5	0.05	0.43%	0.10%
Vicente López	2.00%	0	0.00%	0	0.00%	0.0	0.00	0.00%	0.00%
GABA, total agglom.	57.62%	172	29.60%	64,487	27.57%	374.9	18.89		
La Matanza	13.20%	69	11.88%	34,681	14.83%	502.6	13.69	8.98%	4.19%
Moreno	3.36%	66	11.36%	18,423	7.88%	279.1	9.20	18.73%	4.94%
Florencio Varela	3.17%	48	8.26%	17,925	7.66%	373.4	7.69	19.36%	4.05%
Merlo	3.93%	46	7.92%	19,490	8.33%	423.7	10.26	16.96%	5.90%
Almirante Brown	4.11%	22	3.79%	11,040	4.72%	501.8	4.33	9.18%	3.35%
Esteban Echeverría	2.24%	19	3.27%	13,800	5.90%	726.3	3.95	21.09%	3.26%
Tigre	2.80%	16	2.75%	2,920	1.25%	182.5	0.83	3.57%	0.21%
Ezeiza	1.22%	12	2.07%	10,020	4.28%	835.0	3.87	28.15%	1.63%
Berazategui	2.41%	3	0.52%	460	0.20%	153.3	0.60	0.65%	0.27%
San Fernando	1.21%	2	0.34%	520	0.22%	260.0	0.04	1.47%	0.01%
GABA, partial agglom.	37.64%	303	52.15%	129,279	55.27%	426.7	54.47		
Greater Buenos Aires	95.26%	475	81.75%	193,766	82.84%	407.9	73.36		
Pilar	1.73	35	6.02%	13,170	5.63%	376.3	7.54	26.06%	1.96%
Escobar	1.32	22	3.79%	7,980	3.41%	362.7	2.66	20.60%	0.88%
General Rodríguez	0.65	21	3.61%	5,178	2.21%	246.6	3.99	27.22%	1.09%
San Vicente	0.33	15	2.58%	4,685	2.00%	312.3	4.05	48.40%	0.62%
Presidente Perón	0.45	9	1.55%	6,780	2.90%	753.3	4.30	51.82%	3.56%
Marcos Paz	0.32	4	0.69%	2,340	1.00%	585.0	2.75	24.80%	0.65%
Non-GABA, part. agglom.	4.80%	106	18.24%	40,133	17.16%	378.6	25.28		
AGBA	100.0%	587	100.0%	233,899	100.0%	398.5	98.64		

Source: TECHO 2013

The survey's results within Buenos Aires implicate substantial inequalities. Starting with electricity, only 31.1% have metered electricity units, 6.1% have community units, and 62.4% have either irregular or none. Statistics are not much better for sewerage—over a third reported having no more than a cesspool for waste disposal, with a mere 3.3% hooked up to the public network. In fact, the state is responsible for sewage in only 16.4% of the surveyed *asentamientos*, forcing neighbors to find their own solutions. Similar results appeared for drinking water, where just 4.8% reported regular access to the public network while more than 40.8%, the largest share, got their water through an illegal connection to that same grid. A majority of AGBA's *asentamientos* also lack asphalted roads (52%) while their residents painted a tenuous picture of emergency services. Nearly a quarter felt that firefighters and the police sometimes, or even never, attended to issues in the community, with nearly a third saying the same about ambulance services.

Not all results were wholly bad: most of these same settlements also reported lighted streets (even if they had to do this themselves) and state-sponsored trash collection. Somewhat similarly, environmental hazards were not as prevalent as popularly perceived. Large majorities (70%) of the communities did not have a dump, high tension power lines, train lines, industrial waste sites, large inclines, agricultural plantations, or landfills within even 100 meters of their land. Riverbanks, however, were the feature most commonly within the confines, or within 50 meters, of an *asentamiento* (35%), followed by high-traffic roads (20%) and dumps (15%). Curiously, this is the same percentage of communities that also reported rampant flooding after any rain event (a commonality with the climate of coastal Argentina).

<b>Table 2.19</b>					
<b>Service</b>	<b>Inside the neighborhood</b>	<b>Less than 10 blocks</b>	<b>11-30 blocks (1-3km)</b>	<b>31-50 blocks (3-5km)</b>	<b>Beyond 50 blocks (5+ km)</b>
<b>Kindergartens</b>	11.5%	49.3%	24.9%	3.3%	10.9%
<b>Primary school</b>	10.9%	48.9%	25.6%	3.2%	11.4%
<b>Secondary school</b>	8.3%	42.8%	29.4%	5.7%	13.8%
<b>Hospital</b>	0.0%	2.6%	19.9%	23.4%	54.0%
<b>Medical center</b>	10.3%	39.2%	30.7%	6.7%	13.1%
<b>Police station</b>	1.2%	15.9%	38.6%	20.1%	24.3%
<b>Public transit</b>	19.8%	60.1%	8.9%	0.6%	10.6%
<b>Plaza</b>	23.3%	37.1%	18.0%	4.5%	17.0%
<b>Recreation center</b>	10.8%	26.2%	19.5%	5.1%	38.4%
					<i>Source: TBD</i>

Lastly, TECHO also inquired into the distances between each settlement and the nearest iteration of a range of services. Shown on Table 2.19, the results are mixed. Schools, generic medical centers, and public transit centers all seem to be close, whereas hospitals and rec centers are much further away. Since these are low-order and high-order services, respectively, it is hard to immediately prognosticate on *accessibility* since we do not know how long it takes to get to these

places (or how much it costs). The proximity of schools and health centers is likely a good sign for service access, although poor quality streets or unreliable transit could make these journeys more difficult. Conversely, good public transit to hospitals makes that five-kilometer distance more accessible compared to one without. This shows the importance of this project's incorporation of travel time!

Altogether, TECHO's report showcases that some services are clearly lacking in AGBA's *asentamientos*. This sentiment is captured in perhaps the most interesting of TECHO's interview questions: the greatest threat to individual neighborhoods. While insecurity was a common answer, the largest cohort felt the lack of services was most grave (with lack of pavement—apparently a separate concern—still representing 15%). Using travel time data to quantify the provision of one of these services, public transportation and its *accessibility*-inducing mobility services, can help strengthen the argument to policymakers that inequalities exist and must be fixed.

## **Part II(c.2): INHABITAT (2006-07)**

One of the other only primary sources for information on the *asentamientos*, is the quantitative-ethnographic work of Argentine sociologist Cravino, et al. (2008). Just one part of a larger project entitled INHABITAT, the author and her collaborators carried out a survey in four different *asentamientos* in metropolitan Buenos Aires—one each from the departments of Moreno, San Miguel, Quilmes, and La Matanza—during July and August 2006. While there was some variability between those communities selected—degree of organization, ability to mobilize, location relative environment hazards, outside help, and service provision—and other commonalities—far from their municipal centers and hospitals, roads of poor quality, and absent public spaces. All in all, 480 people were interviewed. Their responses comprise the only primary source on the *asentamientos*, with direct documentation of their living conditions and personal observations. All the while, they are hardly recent and represent a tiny sampling of the million-plus *asentados* and *villeros* in metropolitan Buenos Aires; while I used their opinions and observations to shape parts of my methodology, I understand the risk that they are biased and likely out-of-date.

INHABITAT's findings, at least for 2007, corroborate many of the prior descriptions of the *asentamientos*. They are young (most residents under age 40), mostly comprised of migrants from the interior of Argentina, have relatively few foreigners (only 22%, although most are from Bolivia and Paraguay), are poorly-educated (a near-majority, 47.5%, have only a primary-level education, followed by those with either primary or secondary incomplete—just 0.2% made it to the university level), and highly illiterate. Employment-wise, the largest share of people were employed (around 40%), with most in low-skill, temporary jobs. While few were fully unemployed, substantial numbers were on state-sponsored employment plans or reported being housewives—almost none were retired. For those who worked, nearly all were in typical **working-class positions**: construction and carpentry (25%), domestic workers (17%), street vendors (13.7%), service sector workers (11%), and mechanic (4.2%) (pg. 92-144).

Their households, meanwhile, were densely-populated and lacked some of the same services highlighted earlier. While running water and electricity were commonplace in the four study areas, sewage disposal was uncommon, creating unhygienic conditions that promoted the

spread of disease. Meanwhile, less than a quarter of households had either a television or landline phone, something the authors attributed to the reticence of utility companies to extend services into the *asentamientos*. Even when these services were formally provided (and not merely clandestine connections to the grid), outages were still common. Lastly, these four settlements were all flood prone, with residents (the majority of whom either had self-constructed their home or purchased one from a prior owner) often at risk of losing property—primarily furniture. That relatively few people owned their property (approximately 20% had proof of purchase or ownership of their land, whereas over 60% were merely occupiers) made it difficult to replace lost property or receive help from public authorities (pg. 169-175, 182).

Much like the TECHO report, INHABITAT also collected important information on mobility preferences and the geographic location of common activities. For instance, employed *asentados* primarily worked in their same department (48.1%), with 17.7% going to a separate AGBA department, 8.7% into the federal district, and 28.8% not leaving the neighborhood. In **Table 2.20**, some of the other common trip types—and their destinations—are summarized. As is clear, few activities took *asentados* far beyond their neighborhoods—everyday shopping (e.g. groceries), construction goods, schooling, socialization, and religious practices all took place nearby. Only luxury goods (e.g. furniture, appliances, etc.) required lengthy trips, if purchased at all. In terms of familial trips, many respondents either had no family in the area to visit or, if they did, their extended members often lived with them or in the same *asentamiento* (pg. 185-8).

<b>Table 2.20</b>					
<b>Activity</b>	<b>Inside Asent.</b>	<b>Immediately Around Asent.</b>	<b>Outside Asent., Same Dept.</b>	<b>Outside Asent., Other Dept.</b>	<b>Not Applicable</b>
Everyday Shopping	79.8%	21.9%	2.1%	3.8%	
Luxury Goods	4.6%	22.7%	22.1%	23.0%	28.3%
Construction Goods	4.6%	41.0%	9.2%	4.8%	40.0%
Study	24.0%	32.3%	6.7%	12.0%	22.1%
Socialized with Friends	53.3%	7.9%	6.3%	3.1%	29.0%
Practiced Religion	56.9%	24.6%	11.2%	7.3%	
<i>Cravino, et al. 2008, pg. 117, 119-20, 122</i>					

As for the modal breakdown of these trips, most people reported taking the bus, followed closely by those who travel on foot and those who bike. Merely 5% ride the train (although, as the authors mention, the four surveyed sites were all far from their nearest station), and only 1.5% reported owning their own car. While data on the *quality* of these transit services was not collected, some respondents' answers alluded to an apparent crisis. One person felt they were not able to rely on the available public transit system to reach relevant employment sites, another felt it might be worthwhile to simply move to an *asentamiento* or *villa* closer to jobs, and a third felt her



neighborhood was essentially isolated like in a “desert” or an “island” given the difficulties of accessing proper services and employment (pg. 166, 175). All of these provide concrete evidence that the *asentados* are party to inequality of accessibility.

Alongside these qualitative studies, INHABITAT also performed basic geospatial analyses to tabulate the distances between the *asentamientos* of greater Buenos Aires. Centered on their own dataset of *asentamiento* locations, they determined the average distance from each settlement to its nearest health center, clinic, hospital, primary school, secondary school, middle school, kindergarten, and public transit stop. Looking at the results, public schools were, on average, the closest feature class, followed by public transit, health centers/clinics, and private schools. Interestingly, the results were disaggregated based on whether a given settlement was closer to CABA (first-ring) or further away (second-ring). The results, shown in the last two columns of **Table 2.21**, indicated, as is hardly surprising, that peripheral communities must travel further distances to reach every single feature class.

<b>Table 2.21</b>			
<b>Feature</b>	<b>Distance to feature</b>		
	<b>Across Entire Metro Area</b>	<b>First- Ring Departments</b>	<b>Second-Ring Departments</b>
<b>Health Center, Public</b>	0.61 km	0.56 km	0.68 km
<b>Clinic, Public</b>	0.64 km	0.61 km	0.71 km
<b>Hospital, Public</b>	2.52 km	2.02 km	3.42 km
<b>School, Any</b>	0.33 km	0.30 km	0.40 km
<b>School, Public</b>	0.39 km	0.36 km	0.42 km
<b>School, Private</b>	0.60 km	0.49 km	0.78 km
<b>School, Initial Level</b>	0.65 km	0.60 km	0.73 km
<b>School, Primary Level</b>	0.47 km	0.45 km	0.51 km
<b>School, Middle Level</b>	1.01 km	0.92 km	1.19 km
<b>Public Transit Stop</b>	0.4 km	0.3 km	0.6 km
<b>Public Transit Stop, with at least 3 lines</b>	6.3km	4.1 km	10.0 km
<i>Source: Cravino, et al. 2008</i>			

It must be noted, however, that these calculations—from all indication—are simple Euclidean, straight-line distances and originate from those *asentamientos* identified by INFOHABITAT during 2006-2007, which are somewhat inconsistent with the more recent map created by TECHO. Furthermore, and as will be explored in the literature review on accessibility below, these are just distances and do not reflect the actual amount of time or money that would be required to access these places—simple spatial proximity is not relevant if that journey is costly in time or money. Just as with the data produced by TECHO, my project builds on these existing data by adding the element of **time**.

Unfortunately, there is not much information on the *asentamientos* from ENMODO. While it did record the households' housing types, the only category that pertains are those labelled "villa de emergencia," which could hypothetically apply to any informal or illegal housing (*villa* or *asentamiento*) across AGBA. Without knowing the degree to which these households (3.1% of the total population) are technically *asentados*, I hesitate to use their data or summary statistics as a means of avoiding potential bias (ST 2011).

## **Part II(d): *Asentamientos*. A History of Transportation**

Understanding the history of the *asentamientos* shows them to be not only inextricably linked to the development and degradation of the region's transportation system but also, at a larger scale, nothing more than a response to unfavorable government policies—at the local and national level—and incompetent planning that have failed to meet the housing needs of Argentina's lower classes. Their number and population continue to rise—through economic growth and crisis—with little concrete evidence that infrastructure and services, including transportation, are being provided in a manner that sufficiently improves lives on the ground (Keeling, 1996; Van Gelder, et al. 2016). While their existence is defined as an expression of opposition to state oppression of poverty, exclusionary housing policies, and the economic inequalities produced by neoliberal restructuring, these same forces perhaps also explain why the *asentamientos* nevertheless remain deprived of critical services like transportation.

Investigating the history of the *asentamientos* reveals that, despite not emerging until the 1970's and 1980's, their roots lie in the early history of metropolitan Buenos Aires. For much of the city's history, the predominant form of illegal housing was the urban *villa*. As European immigrants and domestic migrants arrived in the city during its boom period at the end of the nineteenth century and the decades prior to World War I, they would often settle in informal tenements (called *conventillos* or *villas miseria*) near the port facilities and factories along the southern edge of what is now the federal district. Overcrowded and nestled onto whatever open land was available, they were usually only the temporary home of migrants as they first got settled and found jobs in Argentina. Conditions, nevertheless, were still poor—dense with irregular construction materials (usually waste materials from factories) and tight alleys instead of streets.

Around the same time, however, the region's transportation network was beginning to take shape—the subway through the central business district, tramways throughout the city's innermost neighborhoods and departments, and a vast network of railways, with a half-dozen lines headed in each direction out from terminals in the city center were all built during the first decades of the twentieth century (Keeling, 1996). With much of the land along these routes—especially the trams and railways—largely unoccupied (aside from agriculture), it was cheaply sold and developed into suburban neighborhoods for working class people previously stuck in crowded tenements. This growth would not have been possible without these railways and tramways, the former of which was originally built for exporting agricultural goods during the 1870s and then eventually gained the capacity to carry passengers. With faster locomotives in the early 1900s, people could commute into Buenos Aires daily, living in settlements that spring up along individual lines' stations (before cars, people had to live within walking distance of the stop). Train fares, to boot, were cheap. Initial

growth came to many of the departments (e.g. Tigre, Moreno, Merlo, and Moron) that now comprise GABA (Keeling, 1996; Pirez, 2002).

Aiding this growth were relatively lax housing regulations—a system of *loteos populares* emerged whereby developers could lay out “subdivisions” of empty lots—each with minimal services and infrastructure—and sell them cheaply to willing buyers. While the customers, often low-income workers, took on the burden of constructing the house or providing basic services, the land was legally their own. (Van Gelder, et al. 2016; Borthagaray and Natale, 2017; Blanco and Apaolaza, 2018). This meant that people often only lived in the *villas* temporarily and could afford their own housing along the up-and-coming railway suburbs in a short time. The *loteos* ensured a consistent means of legal housing for low-income Argentines throughout the first half of the twentieth century, even as the number of migrants grew spectacularly (for instance, import substitution policies during the 1940s pushed over 200,000 rural migrants into the city each year alone). Between 1930 and 1970, the people living in CABA, and the departments of would-be AGBA, increased from 3 million and 1.8 million, respectively, to 3.5 million and 5.5 million.

Up through the mid-1970s, the continuous stream of people into Buenos Aires, albeit comprised increasingly less by Europeans and more by neighboring South Americans, was so great that the *villas* remained around (despite the *loteo popular* and other government-support housing programs that were scuttled by political and economic turmoil in the post-war decades). Hundreds of thousands of people were still living in the same crowded, unregulated, self-constructed communities wedged onto vacant land in the city’s center (Van Gelder, et al. 2013; Van Gelder, et al. 2016). At the same time, the railway network—which had peaked in ridership during the 1940s—fell into the beginning of a long decline thanks to a botched nationalization of the railroads. Before World War II, they had been owned by private British interests.

With fewer public investments, the system was marked with inefficient services, frequent labor issues, poor management, deteriorating infrastructure, and, most importantly, greater competition from buses and automobiles (Keeling, 1996). Buses captured much of the lost market with cheap fares and flexible routes—initially running routes that fed passengers to rail stations, they expanded into new areas and even competed directly with rail. Their relative affordability was buoyed by domestic oil production, which deflated gasoline prices. Of key importance to this paper, the buses greatly expanded the territory available to commuters; the spaces between adjacent railways quickly filled in with new roads and developments and, as stated before, brought near-complete urbanization—except for river banks and polluted spaces—to those departments bordering upon the main city (CAF 2011).

Major changes, especially to housing, came suddenly after the ascension of Argentina’s military dictatorship in 1976. First and foremost, the military passed the Eradication Law in 1977, banning all *villas* from the federal district. Supposedly to curb overpopulation in the city, improve the city’s image ahead to the 1978 World Cup, and to construct new urban highways, the *villas* and their 280,000 residents were evicted, with many of their homes demolished. According to Van Gelder, et al. (2016), seventeen of thirty-one *villas* were destroyed. At the same time, they also oversaw a new national housing policy that revoked the *loteo popular*, instead mandating that all

new developments be fully stocked with requisite urban infrastructure. Apparently required to curb urban sprawl, the new regime essentially killed the preeminent legal avenue for low-income Argentines to own land. The costs of new lots, with the price of services built-in, was immediately prohibitive. Lastly, to make matters worse, the military also halted rent controls in the city, hoping to spur private housing developments. Rising rents, coupled with continued economic disarray, were unaffordable to low- and middle-income porteños, pushing many out of legal residences.

Out of this policy triad emerged the *asentamiento*: the thousands of people fleeing the urban center, without an affordable, legal recourse to secure housing, collectively settled on whatever vacant land they could find. These spaces, as mentioned before, were either undesirable or undevelopable lands in those departments immediately bordering CABA or, in the outer municipalities, lands too distant to feasibly commute on the existing transit system. By 1981, only 30,000 people were still living in Buenos Aires' *villas* whereas 287,000 people were living in informal settlements in the periphery. Keeling (1996) states that 46% of them were within 30 kilometers of the center, 35% were between 30 and 40, and 19% had to live in settlements beyond 45 kilometers; their peripheral nature was there from the beginning.

Compared with the *villas* that many were fleeing, these *asentamientos* “came into existence as a consequence of an instantaneous and organized land invasion (pg. 1965)”, often with help from outside organizations like churches, NGOs, or lawyers (Van Gelder, et al. 2016). The decision to divide these spaces into lots, and to lay out a street grid contiguous with the surrounding neighborhoods—was a direct legacy of the recently-abolished *loteo*. As alluded towards before, these spaces were “in the urban periphery and generally in locations where there is less of an incentive to react for a landowner (whether the state or private) in comparison with the central areas (VG 2016; pg. 1965).” Since the land was often not of value to its previous owner, there was often (but not always) lessened resistance from the state. Keeling (1996) tells the story of one *asentamiento* that was settled by exiled *villeros* along a riverbank in the Quilmes department in 1981, met with resistance by the dictatorship (who tried to bulldoze the complex but were halted by mass protests), and then succeeded in establishing a formal neighborhood after the territory's previous owners agreed to sell the land (unprofitable otherwise) to the state to be regularized (pg. 1106-7). As is clear from this anecdote, well-organized *asentados* were more likely to prevail and have their settlements persist (Van Gelder, et al. 2013; Van Gelder, et al. 2016).

While the military dictatorship collapsed by 1983 and was replaced by a democratic government, the issues facing the *asentamientos* did not much improve, especially when it came to the provision of services. For instance, even though the new government stopped the crack-down in illegal settlements, and reversed the ban on *villas* within the city, neither the *loteo* nor rent controls returned; most families remained in place in the new *asentamientos* rather than return into the city. Curiously, some *villas* did reappear in the city and even in places where they had been previously destroyed. Nevertheless, economic malaise affected the country throughout the 1980s and early 1990s and kept many in poverty. As an attempt to resuscitate the economy, the national government turned to neoliberal policies in the 1990s, privatizing most public services (e.g. gas, water, electricity, telecommunications, and *transport*) and opening land development to

international actors. The implications for marginalized Argentines were deleterious: private utility companies stopped or reduced services for low-income groups, local governments lacked the authority or power to counteract private interests, and land values increased in an unregulated, speculative real estate market. Meanwhile, federal legislation to officially regularize illegal land tenure and property rights in the *asentamientos* failed to materialize. All the while, all advances made in housing and service provision were wiped away when the Argentine economy collapsed in 2001-02, the result of the country defaulting on its enormous national debt. By 2002, estimates are that over half of all Argentines were in poverty (Van Gelder, et al. 2013; Van Gelder, et al. 2016).

This period was particularly tumultuous for public transportation services, which continued their decline in quality. The railways, bleeding money and passengers, were privatized. Buses continued their ascendance while the government turned its spending and sanctioning priorities towards roadways and highways; privately-operated suburban motorways were constructed, linking the formerly-isolated and largely-agricultural northern departments (most notably Pilar) with the urban center. Little was invested into railroad infrastructure or management even though metropolitan Buenos Aires exceeded 12 million people by the end of the decade (CAF 2011). Pirez (2002) explores the effect of privatization on public services: “in the absence of any democratic decision making at the metropolitan level, key decisions are left to market forces ... including developers and private companies now controlling privatized public services (pg. 145).” Without a state presence, utility and transport companies concentrated their services in wealthier areas, where they could get the best return on their investments; poorer areas, including the *asentamientos*, saw fewer services and higher prices. As for transit, Pirez notes, “the metropolitan transport system is the best example of [post-neoliberal] fragmentation. Different modes of transport co-exist with no coordination other than that provided by the users themselves ... [the result of] three regulatory systems in juxtaposition (municipal, provincial, and federal) (pg. 153).”

One of the more well-documented consequences of this deregulation was the appearance of gated communities and car-centric suburbs in AGBA’s peripheral departments. After the construction of the tolled motorways during the 1990s, upper- and middle-class porteños could live in suburban enclaves in distant departments, namely Pilar, and then commute daily into the city center, with less than 45 minutes travel-time. Taking advantage of the lack of strong land use regulations in the metro area, developers built on large tracts of previously-agricultural land, attracting well-to-do families looking for more space and safer housing away from the dense neighborhoods of the federal district, where the region’s wealthy had historically resided (and, despite these recent changes, still largely remain today). By the 1990s, according to Pirez, gated communities in the region’s periphery comprised a surface area 1.5 times the size of CABA yet with just 17% of its population! This dispersion of population, however, is just another iteration of the regionwide trend away from Buenos Aires’ tradition of exclusive mono-concentricity, except the wealthy are now fleeing to the periphery instead of just the *asentados*.

With many of these remote departments cash-strapped, filled with cheap, underutilized land, in desperate need of tax revenue, and conveniently located along the region’s upgraded motorways, they modified or waived planning regulations to lure real estate developers. Aided by



provincial legislation that gave municipalities leeway over the development of their land, these outer departments relaxed regulations to attract residents. Rural outposts with nothing more than one or two small towns (the only places within those departments that had any kind of public services, if at all) along a railway line or roadway, they quickly filled with the homes of upper-class commuters—in fact, De Duren (2006) notes that constructions booms immediately followed the completion of roadway projects in 1993 and 1996. Nevertheless, the services provided to these developments, as private constructions, were limited to just their residents; many of the people who had previously lived in these municipalities—some in *asentamientos*—saw no benefit. In Pilar, for example, “spatial changes were led by investors and did not correspond to a development of local government institutions, or to a local municipal plan on how to guide local growth ... 80% of people still lacked piped water [by 2001] and sewerage (De Duren 2006, pg. 322).”

Since the 1990s, two trends have predominated: the *asentamientos* have continued to grow with a continuous lack of access to requisite services and public transportation, still poor in many areas, has shown signs of a rebound. In terms of the first, the resurgent Argentine economy, which saw the government’s debt paid off and dropping unemployment, led to another real-estate boom, increasing land prices and rents, once again pushing at-risk citizens into informality. These people joined those others shoved onto illegal *asentamientos* during the crash, when more than half of Argentines were in poverty.

The government made some inroads providing low-income citizens with housing (the Federal Social Housing Program was launched in 2004, with the goal of building 38,000 units in AGBA) but has failed to produce widespread results—the FSHP, for instance, lacked funds to purchase land for housing, meaning that many homes had to be constructed in inaccessible locations where land was cheap. Government reinvolvement in utility provision, a reversal of trends from the 1990s, has led to some improvements in services; the census in 2010 showed fewer homes in poor condition even if the number of people living in informal communities had exceeded one million. Like transportation, the responsibility for housing and land use policy also spans multiple levels of government, complicating the comprehensive planning needed to improve the situation in the *asentamientos* (Van Gelder, et al. 2016).

In terms of present-day transportation conditions in Buenos Aires, Lascano Kezic and Durango-Cohen (2012) provide an excellent overview of planning politics and ridership patterns, illustrating why I expect mobility conditions within the *asentamientos* to be poor. For instance, planning responsibilities remain atomized between federal, provincial, and municipal governments, a problem that persisted throughout Buenos Aires’ metropolitan history. The national government, for instance, controls the commuter railways (re-nationalized in the 2000s), subways, highways, and buses that run routes between the federal district and the outlying province. It also holds ultimate authority over all funding responsible for projects that involve both the city and the province while simultaneously controlling transit subsidies, which are a substantial expenditure—0.7% of national GDP in 2012, according to Guerra, et al. (2018). Such spending (initially introduced during the 2001-02 economic crash, these subsidies remain in place) keeps transit fares affordable for many low-income porteños but have diverted funds away from the maintenance and

upgrade of the existing system (pg. 106). Meanwhile, the province sanctions all travel across municipal borders, and the municipalities supervise modes that stay within those boundaries. The city of Buenos Aires, meanwhile, controls just bus stop locations, subway extension planning, and taxicab licenses despite operating its own planning agencies and having nearly a quarter of the metropolitan area's total population and a relatively large tax base. This is reflected by the fact that the entirety of the subway network is within CABA's boundaries, as well as all the region's bus rapid transit lines, a more recent innovation.

Alongside the disarray in planning circles, the number of people owning private automobiles has skyrocketed, especially as the country's economy has stabilized and produced a growing middle class. This has, in turn, siphoned away much-needed fare revenue from buses and rail lines, the latter of which still sees relatively low ridership. Lascano Kezic and Durango-Cohen (2012) note that this has been ongoing for decades but has accelerated in the last twenty years, aided by government subsidies, the construction of new highways, and user discontent with poor-quality transit (pg. 110-111). For instance, the modal split in 1992—according to Vasconcellos (2001)—was 60% public, 24% private/auto, 9% non-motorized, and 7% other—while today, at least according to ENMODO, it is 43% public, 26% private, and 31% non-motorized (ST 2011).

<b>Table 2.22</b>				
<b>Mode</b>	<b>Share</b>			
	<b>1972</b>	<b>1992</b>	<b>1996</b>	<b>2007</b>
Bus	54.3%	49.85%	42.7%	31.33%
Subway	5.4%	3.62%	4.3%	3.74%
Train	7.2%	6.37%	6.45%	5.08%
Automobile	15.4%	24.29%	31.4%	41.94%
<b>Total number of trips</b>	<b>17.4m</b>	<b>18m</b>	<b>19.3m</b>	<b>26.3m</b>
<i>Source: CAF 2011, pg. 30</i>				

Public transportation, the traditional leader in Buenos Aires' modal split, has seen some improvements in recent years despite losses relative to private automobiles. Trains, still losing traffic and revenue compared with their heyday, were initially franchised out to private operators during the 1990s and then partially re-nationalized during the 2000s. They have seen some new investments (electrification of railway lines, for instance). Ridership levels are at approximately 250 million people and the rail lines remain one of the easiest ways to reach the city center from the metropolitan outskirts (reflected in ENMODO). Given the age—and their history as the initial progenitors of suburban growth in AGBA—their stations are associated with high residential densities and as centers of commerce within the departments they serve (Blanco 2014). Nevertheless, they have struggled against a negative popular image, with a now-long established legacy of poor service quality, rampant safety violations, insufficient investment in capital (e.g.

tracks, stations, locomotives, and rail cars), poor on-time performance, significant fare evasion, and debates over funding.

Buses, meanwhile, have retained their spot atop the regional modal split and are still privately-operated. Companies continue to bid on routes put out by the state (the location of a given route is determined by the government body whose jurisdictions it serves) and awarded to them through concessions. While not strictly a public service, the companies are still held to federal safety and technical regulations and have received help in purchasing and maintaining new equipment. Furthermore, efforts have made to ensure intermodal connections, having buses stop at rail or subway stations to permit connections. In some parts of the metro area (albeit primarily within CABA), segregated bus lanes were installed. Fares—which are distance-based—are heavily subsidized by the state, with discounted tickets available to seniors and students (Guerra, et al. 2017). As seen in the ENMODO results, the bus is also the preferred mode of the lower classes—the busiest routes, as it turns out, are those serving southern and northwestern departments of AGBA, where many of the region’s poor, working-class people (including the *asentados*) are to be found (Keeling, 1996).

Recent transportation system improvements, however, have overwhelmingly favored residents of CABA and the wealthier communities in the region’s periphery. The federal government, alongside the city and provincial governments, has pushed for the electrification of suburban railway lines, expanded the City’s subway system, and constructed several Bus Rapid Transit corridors throughout the City of Buenos Aires. It has also implemented a region-wide fare card program (known as the SUBE), helped fund the purchase of newer vehicles, added a transit safety agency, and added university programs in transit engineering (CAF 2011; Borthagaray and Natale, 2017).

In AGBA’s peripheral zones, away from CABA and its wealthy residents, services are still poor, with chronic congestion, unreliable services, frequent accidents, poor management, and transit that is over-capacity (CAF 2011; Gutierrez 2014). Some scholars, like Pirez (2002), Gutierrez (2014) and Blanco (2014), attribute this imbalance to inequitable spending on automobile-based transport—which has increased air pollution and street congestion while attracting paying customers away from transit—and *the lack of a proper, regional planning authority*. With such a body, transportation and land use planning could be coordinated comprehensively, with departments working together with the federal, provincial, and CABA governments, to ensure that the transit system is more efficient and equitable for all porteños, not just the minority wealthy enough to drive or to afford buy or rent their own home or apartment.

While the city enjoys walkable streets and transit coverage greater than 90%, *substantial mobility problems remain in place for those living further from the central business district*. Despite the continued growth in the conurbation’s periphery, “Greater Buenos Aires concentrates residents and overall wealth in the central city. The densest neighborhoods are centrally located and emanate radially from the center ... [and] the highest income households are located in central locations of Buenos Aires, where the best transportation infrastructure and urban amenities are located (Guerra, et al., 2017, p.3).” In terms of explaining this inequality, Pirez (2002)—despite

making his observation over a decade ago—is correct in noting that there “is no democratic decision-making process at the metropolitan level, so key decisions are left to the market ... and more powerful economic actors (such as developers and private companies providing public services) ... without the necessary accountability to the citizens that represent the real city (pg. 158).”

In conclusion, there is ample evidence to support the hypothesis that the residents of metropolitan Buenos Aires’ *asentamientos* enjoy poorer transit-based access, quantified through average travel times, to daily activity sites than those people living in the formal, legally-established neighborhoods that surrounded them.

- First and foremost, *asentamientos*—by their nature—are found exclusively in peripheral spaces, both relative to their individual districts and the whole metropolitan region. If the land upon which they were settled was more transit accessible—and not already plagued by floods, pollution, and other environmental hazards—it would have been developed. While it could be argued that their peripheral locations will inherently make travel times longer, this is still not an excuse for not providing essential, accessibility-enhancing transportation services to these areas.
- Aiding this initial spatial disadvantage is the long-ongoing deterioration of transportation and other public services in the metro area; since the 1950s, rail and bus services have been poor, especially in the metropolitan periphery (which, aside from the recent construction of wealthy gated communities, has always been resource-poor compared to the cosmopolitan city). With a near continual decrease in funding from the state (whether because of reduced fare revenue from passengers lost to driving or the general disengagement of the state from the economy through neoliberal regulatory policies), poor transit-accessibility is to be expected everywhere with no reason to expect the worst conditions to be for those marginalized people living in the region’s most precarious locations.
- Lastly, with profit-minded utility companies choosing to forgo low-income areas in other spheres, it would come as no surprise to see longer travel times for *asentados* than their (relatively) wealthier neighbors, a reflection of infrequent, overcrowded, and under-supported transit services. Despite being transit-dependent, their low-incomes and stigmatized popular image likely to do no help attract the highest-quality transit services that could be provided.