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Socioeconomic residential segregation and public housing programs: A case study of the "Mi casa, Mi vida" Program in Córdoba City

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Abstract: In this work we study the problem of residential segregation in Córdoba city (Argentina), proposing to focus on the configuration of segregated places derived from a housing policy program. We seek to account for the effects derived from the implementation of public housing policy and to provide reflections on this complex problem, which is one of the features present in the new residential extensions that are built on the periphery of cities both through public or private actions, promoted by the real estate market. In this sense, we analyze the housing complexes developed by the "Mi casa, Mi vida" Program, called "city-neighborhoods", since they present new features that lead to questioning how the State intervenes in the production/reproduction of the socio-territorial segregation. The new conditions presented in this housing program, compared to what was developed in previous stages of public policy as to mention: the program scale; a more peripheral location, uniformity of the typology of the complexes and dwellings, targeting of social demand, the designation assigned, among others, would be the analytical dimensions with greater effect in relation to the social / spatial homogeneity present in the new residential areas. These aspects would represent serious limitations in terms of opportunities to access to the necessary satisfactors for the social reproduction of the population.

Key words: residential segregation; public housing programs; social homogenization

1 Introduction

In this paper, we address the study of residential segregation as a line of research we have been developing at the Institute for Housing and Habitat Research at the FAUD – National University of Córdoba since 2004 (first published work), proposing an approach centered on the analysis of a housing policy program. We seek to account for the effects resulting from the implementation of public housing policy and to offer insights into this complex issue, which is a defining feature of the new residential developments being built on the outskirts of cities, whether through public initiatives or interventions driven by the real estate market.

In this line of research, we are interested in studying how the social divisions present within urban spaces in cities are configured and reconfigured, that is, analyzing their evolution over time as it relates to the processes of urban transformation inherent in the urban growth of metropolises. With the development of information and communication technologies (ICTs) in the early 1990s, reconfigurations began to take place in the labor market, with territorial and urban effects that were reflected in the economic growth model. A new socio-spatial configuration, referred to as the "dual city"

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(Castells, 1995), has been a recurring theme in urban studies since that time.

The reproduction of inequalities within cities and the intensification of residential segregation processes among population groups ─ with a much greater intensity than in previous periods ─ becomes evident when analyzing the possibilities for access to land and housing for the various social sectors seeking them. Growth crises, stemming from imbalances between the demand for space (driven by economic growth) and the market supply of land and housing (held back by the private sector), "can only be corrected through a public housing policy that goes beyond the mere acceptance of market trends" (Castells, 1990:37). These growth crises result in "a lack of developed land" (as claimed by the private sector), promoting the relaxation of urban regulations to enable the opening of new developable areas (with the consequent capture of urban capital gains). Hence the importance of understanding the evolution of the urban structure's growth process, as well as the housing policies implemented by governments and their relationship to these dynamics.

In the case we present, a study of residential segregation, the socioeconomic dimension is prioritized as an analytical framework due to the high levels of poverty that persist in our Latin American cities. The aim is to investigate whether the relationship between poverty and the social division of space is intensifying conditions of residential segregation in certain parts of the urban landscape and, in this way, reinforcing the persistence of critical (conflict-prone) areas that would require specific consideration and treatment within public policies on territorial planning and management, in light of new scenarios of economic development.

Although the concepts of residential differentiation or social divisions in space are often used interchangeably with that of residential segregation, there are differences between these two meanings. In principle, it could be said that there has always been an unequal distribution of different social groups in space (Duhau, 2013) based on their membership in a particular social sector, ethnicity, race, or religion; and this need not be a negative condition—on the contrary, belonging to certain social groups (networks) can facilitate residents' social and spatial integration[1]. However, when we speak of urban segregation, we are referring to a social division of space mediated by coercive action and, therefore, carrying a negative connotation (Duhau, ibid).

The case of housing developments implemented through public housing policies is dichotomous in this regard, because even though the policy's objective is to improve the living conditions of vulnerable populations and provide access to decent housing, residents' options for choosing a specific location are limited, if not restricted. Following Harvey's (1989:121) hypothesis, the market limits the possibilities that different social actors have to choose a location in the city; the dynamics of urbanization create a structure where individuals can choose but cannot influence the production of that structure ─ and that is how the market operates and produces residential differentiation. Along these lines, reasoning, residential differentiation should be considered not as a passive product of a system of preferences based on social relations, but as a mediation through which social differentiations are produced and sustained (Harvey, 1989:123). Within this logic of how the market functions in urban development, individuals must adapt their preferences to their possibilities for locating within the city, based on the cost of urban land. The most disadvantaged sectors see their choices reduced or have no choice at all, given the gap between average household income and the value of developed land. In light of this, we ask: What is the role of housing policies? Can they intervene in this dynamic and facilitate access to housing locations, or are they subject to the same rules of the land market? We ask ourselves: To what extent might public housing policies be intensifying conditions of segregation? Given that, although there is no explicit coercive action involved (Duhau, ibid.), the policy's target groups (civil associations, nongovernmental organizations, organized residents) would have limited (or no) choice regarding the urban location of public housing programs.

In previous articles (Marengo and Elorza, 2016), we have examined segregation in the city of Córdoba, confirming

just how segregated the urban structure is, how this division—analyzed at the level of census tracts[2](which can be considered a large-scale analysis), and how its dynamics or evolution have unfolded over the time periods 1991–2001 and 2008.

In this paper, we will examine the phenomenon in two dimensions: at the urban scale, identifying how the population is distributed residentially according to social groups within the city; and at the housing-complex scale, analyzing the creation of socially homogeneous sectors in the city's peripheral areas through public housing policy, using as a case study the housing complexes built under the "Mi casa, Mi vida" program, which had the greatest impact due to the number of units built in the first decade of the 21st century in the city of Córdoba. We seek to describe the sociodemographic conditions present in residential spaces created through public housing policies and to investigate the resulting effects in terms of socioeconomic residential segregation.

2 Conceptual approach: segregation and housing policies

Sabatini (2004) defines residential segregation as the spatial clustering of families of the same social status, regardless of how social differences are defined. Therefore, it consists of a spatial relationship: one of territorial proximity or separation among people belonging to the same social group. The focus on analyzing this phenomenon in terms of the population's socioeconomic status is primarily a characteristic of our Latin American region (Rodríguez Vignoli, 2001; Sabatini, 2004); this analytical distinction can be linked to the historical and social factors that have converged in the development of cities across different continents.

In this regard, in the urban context, we understand segregation as the degree of mixing present in the urban structure (levels of homogeneity or heterogeneity within an analytical unit, which will depend on the physical scale at which the study is conducted) and the geographic distance between social groups in their distribution throughout the city (Marengo and Elorza, 2016). The geographic location of different social groups (defined by analytical dimensions such as nationality, race, religion, socioeconomic status, among others) is linked to the distinct ways in which these groups access the city and urban resources—a situation that highlights processes of social inequality that have their territorial correlate (Di Virgilio and Perelman, 2014).

The residential distribution of the population across specific urban residential areas is related to opportunities in terms of access to education, goods, and resources (social, cultural, and economic); more generally, it relates to the possibilities for social integration that each individual has in life. From this perspective, residential space serves not only as a means of recognizing the socioeconomic divisions present in the urban structure—mediated by a sea of heterogeneity—but also as a reflection of the segmentation between groups can contribute to reproducing conditions of social inequality in a given area. (Ward, 2012: 74).

In recent decades, with the growth of cities, social changes reflected in new residential preferences among high-income groups, rising land prices, and difficulties for lower-income groups in accessing urban land, it could be argued that segregation has intensified. In this process, the role of the land market and government action has had a central impact.

On the one hand, the mechanism of land prices plays a decisive role in the social segmentation of space, guaranteeing privileged groups exclusive access to areas positively associated with desirable landscape features—features typically promoted through real estate developers' marketing strategies and linked to road infrastructure developments and the model of private car mobility. As Duhau (2013) argues, segregation occurs through the real estate market; real estate developers interpret differences in class and ability to pay and operate accordingly, specializing in specific niches.

On the other hand, the state intervenes in the production of socioeconomic residential segregation, either directly—by concentrating the low-income population in peripheral areas of the city through housing policies (which offer lower levels

of services and urban amenities and entail longer travel times and higher transportation costs)—or indirectly, through its influence on the pricing of urban land, via urban land-use regulations and building codes, or through the implementation of public works projects (Jaramillo, 1999; Sabatini, 2004; Hidalgo Dattwyler, 2007).

With regard to the objective of this study, we are interested in analyzing the direct action of the state through housing policies. Studies conducted on the implementation of housing policies in different cities across the region (Rodríguez and Sugranyes, 2005; Brain and Sabatini, 2006; Hidalgo Dattwyler, 2007; Bonduki, 2014), a consistent pattern has been identified: housing projects are increasingly located on the periphery of cities' central areas.

In a paper presenting the results of a study on social housing policy in Chile and its influence on residential segregation, Sabatini and Wormald critique the book *Los con techo*, edited by Alfredo Rodríguez and Ana Sugranyes in 2005, based on the scant attention paid to the location of housing complexes, "although it revealed concern for the urban dimension of the social housing problem, highlighting its location on the urban periphery, this variable, location, did not appear as a factor that could make a difference for residents of different housing complexes, but rather as a constant that added to other, perhaps more severe limitations of the housing, such as its small size and questionable quality" (Sabatini and Wormald, 2013: 17). They propose the hypothesis that social housing itself—even when small in size and of low quality—could have very different effects on people's lives, on household progress, and on the consolidation of neighborhoods, depending on its degree of spatial segregation. In this regard, they criticize the limitations of the "social targeting" criteria of housing subsidy policies, which—by being directed at the low-income population—have created large, socially homogeneous zones in the city's outlying areas. "And this homogeneity is the most harmful aspect of residential segregation, because it isolates those who live in these complexes from other people or families of different social status" (Ibid: 17).

We revisit this argument because we agree that the location of social housing complexes is the central variable for understanding residential segregation, as is scale, that is, the scale of the interventions (in terms of the number of housing units)—a critical factor when analyzing targeted policies (aimed at a homogeneous population without socioeconomic mix) in light of the actual opportunities for access to various urban resources available to the residents living there. However, we also recognize other variables that are important for achieving better living conditions, such as housing quality and size—especially for low-income populations, who face greater difficulties in adapting and modifying their homes to meet their needs. This often leads to health and socio-emotional problems, as well as increased demands on public social infrastructure (health centers, schools, etc.).

In this regard, we consider it necessary—for the study of this phenomenon in relation to social housing policies—to integrate different categories that contribute to the analysis of the production of social homogeneity in residential areas, not only due to the socioeconomic status of the population but also due to the uniformity of the physical-structural response offered in housing complexes and its consequences for the construction of urban environments. As Cravino (2012) argues, it is interesting to investigate the "place effects" that take shape around social housing neighborhoods and determine conditions of access to the city in relation to social representations, territorial stigmas, and other factors associated with how other population groups perceive these neighborhoods.

2.1 Dynamics of socioeconomic residential segregation in the City of Córdoba

Drawing on analyses published in previous articles (Marengo-Elorza, 2016), we consider it necessary to provide an introduction to the dynamics of socioeconomic residential segregation in the City of Córdoba, highlighting the main transformations that occurred during the time periods 1991 –2001 and 2008, to provide a general context for the analysis of the "Mi Casa, Mi Vida" program.

Studies on the evolution of urban growth in the region's major cities, as well as in the metropolises of developed countries, indicate that the defining feature of recent decades has been the spread of urbanization, associated with a process of intensifying residential segregation. The general trend is toward expanded metropolization, the formation of metropolitan areas with diffuse boundaries and regional scope, and a decline in the density of inhabited space (UN-Habitat, 2012; Shlomo, Jason Parent, and Beli, 2010). It is evident that the annexation of developable land has accompanied the urban transformations that have taken place in recent decades, even as population growth has slowed (Figure 1).

In the case of Córdoba, the increase in the number of people living in the suburbs, the decentralization of activities toward the periphery, and the development of large-scale commercial, recreational, and residential projects on the city's outskirts have resulted in development characterized by greater physical and functional dispersion within the urban structure. The significant expansion of the urban form (compared to the industrialization era) is attributed to reduced state intervention in regulating growth, the relaxation of regulations to facilitate private investment, and the growing polarization of the social structure.

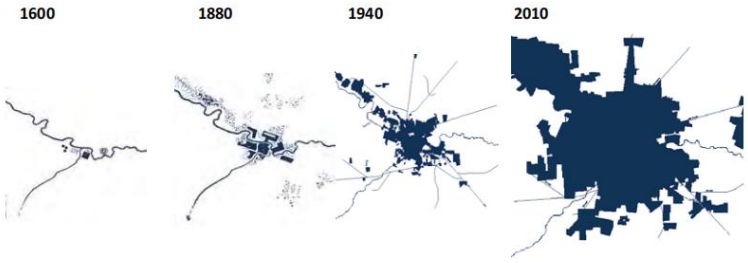


Figure 1. City of Córdoba: evolution of the urban area. Source: Municipality of Córdoba

Since its origins, the city of Córdoba has been characterized by segregation; its development has been shaped by a pattern of differentiation in the residential locations of various social groups, with high-income sectors located in the city center and the northwest growth corridor (forming a high-income cone) and low-income sectors in the outer ring. (Figure 2. Urban land values as of 2000. Source: City of Córdoba).

Beginning in the 1990s, it became evident that the socio-spatial patterns emerging in the periphery were associated with a more divided city, as the process of developing residential subdivisions began special residential areas with restricted access, a term referring to high-income real estate developments known as "Countries"—due to the prevalence of private green spaces required for this type of development, as well as their sports and recreational facilities—and other neighborhoods that, while not meeting the same standards, share perimeter fencing and control over access and internal movement (gated communities). A migration process is taking place, with residents moving from the city's traditional and established neighborhoods to these new residential areas, located in the northwestern growth corridor, driven by the real estate supply of land and gated communities.

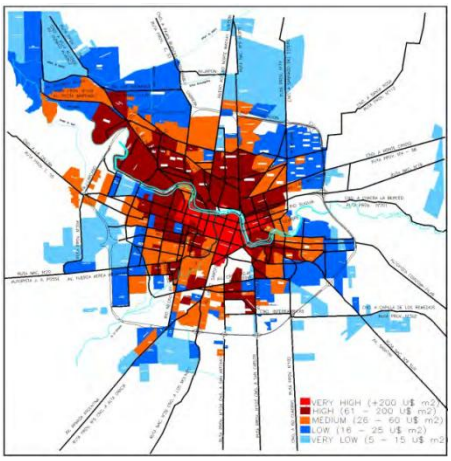


Figure 2. Urban land values as of 2000 (expressed in dollars). Prepared by the author. Source: Municipality of Córdoba

As a result of housing initiatives carried out by the government (at various levels) during this period, new neighborhoods emerged along the entire peripheral ring, primarily in the southeastern sector, with a relative degree of integration into the urban fabric where they were situated. As a result of these policies by 2001, the city had lost the residential and socioeconomic mix that characterized large sectors of the housing fabric in the pericentral and intermediate areas, and the geographic distance between the high-income sectors located toward the northwest and the low-income sectors located on the periphery—and primarily toward the southeast quadrant—had increased. During the 2001–2008 period, the dynamics of segregation[3] exhibited an ambivalent pattern: on the one hand, areas with low or moderate segregation increased (that is, social mix was partially restored in certain established urban sectors undergoing urban renewal and building densification), while processes of segregation based on the location of social groups (Rodríguez, 2001) intensified in other peripheral areas associated with opposing social sectors. (Figure 3). Toward the northwest and the southern axis, the high- to very-high-income population is concentrated (in new gated communities and exclusive neighborhoods that have become established and expanded over the course of the period), while in the peripheral arc (excluding the northwest development axis)—where the largest number of people with unmet basic needs reside—the housing programs implemented during the period and aimed at relocating vulnerable populations are concentrated.

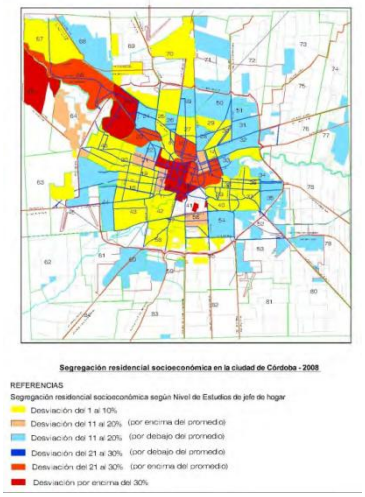


Figure 3. Residential segregation in Córdoba in 2008. Prepared by the author. Source: Statistics and Census Office of the Province of Córdoba

2.2 The case of barrio-ciudades developed under the "Mi Casa, Mi Vida" Program

In the previous section, we analyzed the dynamics of the phenomenon of socioeconomic residential segregation during the period 1991–2008, and in previously published articles (Marengo and Elorza, 2016), we examined how the location of public housing complexes during this period contributed to the creation of peripheral areas characterized by homogeneity, noting how the concentration of the population living in poverty intensified toward 2008 in what is termed "segregation by group location."

We aim to advance the analysis from a "micro" perspective, using as a case study the public housing complexes developed under the "Mi Casa Mi Vida" Program—specifically those designated as "barrio-ciudades"—due to the scale of their intervention and their effects on residential segregation. Although they adhere to the traditional "housing-first" logic of Argentine housing policy (Rodulfo, 2006), they present new features when examining how the state intervenes in the production and reproduction of the process of socio-territorial segregation. The new conditions emerging in this housing program, compared to those in earlier stages of public policy: in terms of the program's scale; increasingly peripheral locations; uniformity in the typology of housing complexes and units; targeting of beneficiaries; and assigned designations, among others—would be the analytical dimensions with the greatest impact on the social and spatial homogeneity present in the new residential areas, an aspect that would represent serious limitations on opportunities for access to the resources necessary for the social reproduction of the population.

In this regard, we conducted an analysis of the location of the housing complexes using satellite images, a description of the complexes (which is uniform across the different neighborhoods), and a presentation of the sociodemographic and housing conditions of the households residing in these housing complexes based on data provided by the 2010 Census, in which census data were systematized at the neighborhood level. It should be noted that these neighborhoods were inaugurated beginning in 2004; therefore, the data allow us to understand living conditions during a time period limited to 2010 (the date of the most recent National Census).

2.3 a The urban-residential proposal of the social housing policy

The "Mi Casa, Mi Vida" Program has aimed to eradicate shantytowns in flood-prone areas by relocating their residents to new housing complexes. During the implementation period from 2003 to 2010 and up to the present, it has been the largest-scale program in terms of intervention and impact on the city's layout. Through this initiative, approximately 70 shantytowns have been relocated, and 9,870 housing units have been allocated, located in 47 new neighborhoods. The location of these neighborhoods has shaped a new distribution of the city's poor population, relocating it from the central and intermediate rings to peripheral areas, where services and amenities are of lower quality (Marengo and Elorza, 2016:139).

Families were relocated to housing complexes with complete infrastructure (drinking water supply, electricity, street lighting, paved roads, and sewer systems) provided by the program. In the case of neighborhoods comprising more than 250 housing units, the program included community facilities (providing each complex with schools, a health center, a police station, and commercial spaces). These larger-scale interventions—11 in total—were designated "neighborhood-cities" and were populated by residents relocated from various shantytowns, as shown in Table 1. Under this model, 52% of the housing units constructed as part of the aforementioned housing initiative were developed.

Table 1. Number of housing units by barrio-ciudades and informal settlements of origin of the population. Source: Habitat Directorate, Ministry of Social Development, Government of the Province of Córdoba

	Barrio-Ciudades	Number of Housing Units	Origin Villages
1	Ciudad Ampliación Cabildo	570	-Villa Costa Cañada Suarez, Villa Tachito, Villa Cabo Farina, Villa Costa Canal Carbó, Villa Mirizzi and Villa Richardson
2	Ciudad de Juan Pablo II	359	-El Terraplén - Costa Canal Parque Liceo III (Partial), La Cañada-Parque Liceo I, La Cañada de La Nestle- Villa Azalais Oeste, La Cañada II (A and B) and Villa Km. 8 (Partial)
3	Ciudad de los Cuartetos	480	-Costa Canal Parque Liceo III, Villa El Chateau, Villa Urquiza and La Salada
4	Ciudad de mis Sueños	565	-Costanera San Vicente, La Maternidad - Agustín Garzón, La Rotonda – Costa Suquía San Vicente, Ferrocarril Mitre, Galpones FFCC frente a Terminal, Villa Ferrocarril Mitre, Los Vagones, Villa Minetti, Guiñazú, Los 40 Guasos – Costa Canal, Los Mandrakes, Caceres y Vélez Sarsfield
5	Ciudad Evita	574	-Capullo de la Esperanza, Santa Bárbara, Santa Rita, Capillita, Los 40 Guasos, Costa Canal 1° de Mayo y Ampliación 1° de Mayo
6	Ciudad mi Esperanza	380	-Villa Sangre y Sol, Villa Corea y Villa Km 10
7	Ciudad Obispo Angelelli	564	-Villa Obispo Angelelli, Villa Mirizzi, Villa Libertador anexo - Costa Canal Sur – Carbó, Cortaderos Sur, La Cascada, Virgen de Fátima Organización Comunitaria: Mutual Esperanza
8	Ciudad Parque Las Rosas	312	-La Tablita, Villa 7 Alcantarillas, Estación Flores (La Escuelita) y Villa La Lagunilla
9	Ciudad Villa Retiro	264	-La Cañada de Parque Liceo III, Guiñazú Sud y Villa Liceo Gral Paz
10	Ciudad Sol Naciente	638	-Villa Rivera Indarte, Villa Tersuave, Villa Manuela, Cortaderos Los Boulevares, El Infiernillo I y II, Costa Canal San Francisco y Canal de las Cascadas
11	Ciudad Ampliación Ferreyra	460	-Casillas, El Trencito y Villa los 40 Guasos
	Total housing units	5166	

Due to the lower cost of land, as mentioned in the previous section, the housing complexes have been located on the city's outskirts (Figure 4), particularly along the southern, southeastern, and northeastern growth corridors. With the exception of two housing complexes—Ciudad Juan Pablo Segundo and Ciudad Parque Las Rosas—the rest of the housing complexes are located outside Av. Circunvalación, in areas characterized by scattered residential developments within a

rural-industrial context. In many cases, this situation leads to conflicts between land uses—for example, rural activities such as the application of agrochemicals in areas where people live, or waste dumping sites[4], among others (Figures 5 and 6).

Regarding urban mobility from these housing complexes, previous studies have analyzed the difficulties residents of these neighborhoods face when traveling to other parts of the city. In most cases, they have access to only a single bus route, which runs at intervals of more than thirty minutes during the day and does not serve these neighborhoods at night. Furthermore, mobility via taxi and/or private car services is not a viable alternative, not only because of the cost but also due to the difficulties these vehicles face in "entering" the neighborhoods, given that these "barrio-ciudades" are labeled as "red zones" (Montoya Flores, 2006; Elorza, 2012, 2016).

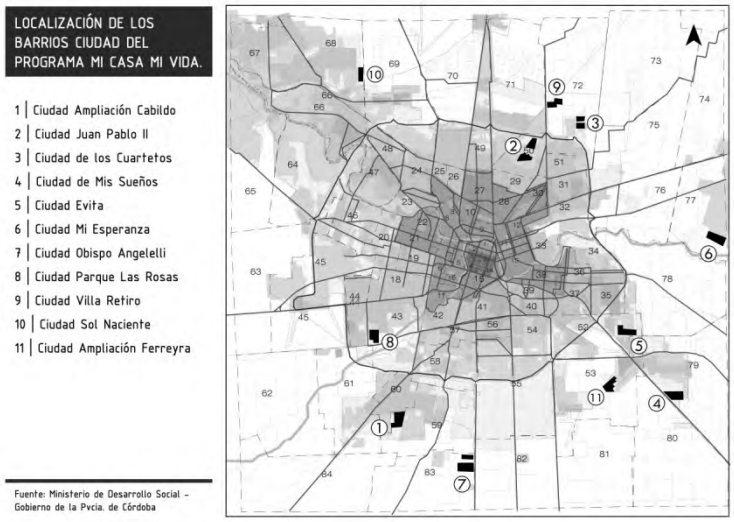


Figure 4. Urban Location of the "Mi Casa Mi Vida" Program Neighborhood Cities. Prepared by the author. Source: Directorate of Housing. Ministry of Social Development. Government of the Province of Córdoba



Figure 5, 6. Location on urban edges. Photo: Barrio Ciudad de mis Sueños. Source: Provincial Housing Directorate



Figure 6 – Location on urban edges. Satellite photo of Barrio Ciudad de los Cuartetos. Source: Google Earth

The developments are organized into city blocks, with lots situated along two perimeter streets and a central area housing community facilities and green spaces. The lots are numbered and are rectangular, with areas ranging from 280 to 300 m². It is worth noting that there is no difference in size compared to a typical lot in the city of Córdoba, which ranges from 200 to 250 m². The homes are set back from the property lines; they are single-family and all follow the same layout (42 m²): a living-dining room measuring 13.50 m², two 9 m² bedrooms, and a bathroom.

In keeping with the single typology planned by the program, the entrance to the "neighborhood cities" is marked by an arch displaying the neighborhood's name (Figures 7 and 8), which serves as both a physical and symbolic barrier to the surrounding area. Although the development of these housing complexes has been uniform and repetitive, over time families have, through their own practices, gradually made the homes their own and modified them according to their needs, resources, tastes, and expectations; improvements to the homes can be observed (painted openings, plastering, installation of ceramic tiles, etc.); as well as expansions (construction of garages, new bedrooms, etc.); likely linked to each family's material (financial resources) and non-material (know-how) capacity for investment. In many cases, one of the family strategies observed is the densification of the lot, that is, the construction of rooms in the courtyard where the new families of the homeowners' children ("close relatives") live (Elorza, 2016).



Figure 7: Entrance arch to the barrio-ciudades. Source: Author's own work



Figure 8: Entrance arch to the barrio-ciudades. Source: La Voz del Interior newspaper

2.3 b Socio-housing conditions of households in the barrio-ciudades

According to data from the 2010 census[5], 17,838 residents live in the city neighborhoods, representing 1.34% of the city's total population[6]. There is no significant difference between the male (49.6%) and female (50.4%) populations.

With regard to age groups, we distinguish between two groups—children and the elderly—since this allows us, on the one hand, to recognize these individuals' economic dependence and their need for care and protection; and, on the other hand, the needs and demands for services related to the daily lives of these groups (daycare centers, health clinics, schools, etc.) that should be taken into account when defining public policies aimed at the residents of these neighborhoods. Considering all the neighborhoods analyzed, 41.7% of the population consists of children aged 0 to 14, and 2.2% are the elderly (Table 2); these data reveal a large population that is dependent in terms of economic resources and care and social protection needs. In the cases of Ciudad de mi Esperanza and Ciudad Obispo Angelelli, that percentage rises to 46.9% and 46.6%, respectively, further exacerbating this situation of greater vulnerability.

Table 2. Population by vulnerable age groups (children and the elderly). Source: Own elaboration based on 2010 Census data, Statistics and Census Directorate of the Province of Córdoba

Barrio-Ciudad	Total Population	0–14 years	%	65 years and over	%
CIUDAD AMPLIACION CABILDO	2593	1103	42.5	38	1.5
CIUDAD DE JUAN PABLO II	2125	824	38.8	64	3
CIUDAD DE LOS CUARTETOS	2204	903	41	32	1.5
CIUDAD DE MIS SUENOS	2147	867	40.4	70	3.3
CIUDAD EVITA	2662	1089	40.9	67	2.5
CIUDAD MI ESPERANZA	1492	671	45	27	1.8

CIUDAD OBISPO ANGELELLI	1828	817	44.7	35	1.9
CIUDAD PARQUE LAS ROSAS	1385	602	43.5	21	1.5
CIUDAD VILLA RETIRO	1402	567	40.4	37	2.6
Totals	17838	7443		391	
Percentages	100%	41.7		2.2	

The population of these neighborhoods comprises 4,166 households; the composition of these households by number of people varies (Table 3), with the majority consisting of 4 or 5 people (37.1%) and 2 or 6 people (23.8%). It is worth noting that households with 7 or more people account for 13.1% of the total, which is significant due to its impact on overcrowding. A detailed analysis shows that in Ciudad Obispo Angelelli this figure rises to 15.63%, and in Ciudad de los Cuartetos, Ciudad de mis Sueños, and Ciudad de mi Esperanza, it exceeds 14% of all households.

Table 3. Number of persons per household. Source: Own elaboration based on 2010 Census data, Statistics and Census Directorate of the Province of Córdoba

Barrio-Ciudad	Total Households	Number of Persons per Household							
		1	2	3	4	5	6	7	8 and more
CIUDAD AMPLIACION CABILDO	577	44	42	108	119	110	75	30	49
CIUDAD DE JUAN PABLO II	552	66	67	119	130	70	58	17	25
CIUDAD DE LOS CUARTETOS	489	29	46	74	116	81	70	38	35
CIUDAD DE MIS SUENOS	511	44	80	86	98	81	47	41	34
CIUDAD EVITA	638	52	97	121	123	91	70	36	48
CIUDAD MI ESPERANZA	349	25	52	64	69	51	37	21	30
CIUDAD OBISPO ANGELELLI	403	31	39	64	85	68	53	26	37
CIUDAD PARQUE LAS ROSAS	325	30	33	57	59	71	39	16	20
CIUDAD VILLA RETIRO	316	19	37	52	66	53	47	17	25
Totals	4160	340	493	119	865	676	496	242	303
Percentages	100%	8.2	11.9	2.9	20.8	16.3	11.9	5.8	7.3

We are interested in identifying female-headed households among these households, although we acknowledge certain theoretical and methodological difficulties in official statistics when it comes to defining when a woman is considered the head of household and when she is not, as well as the question regarding the usefulness of female-headed households as the sole criterion for identifying the population of poor households. Nevertheless, we believe this is a noteworthy finding, since female heads of household and their households constitute a socially and economically vulnerable group due to the "economic insecurity"[7] that this situation typically entails (Geldstein, 1997). Analysis of the data shows that 38% of households are headed by women (Table 4), with this trend being particularly pronounced in the neighborhoods Ciudad de mis sueños (46.6%) and Ciudad Parque Las Rosas (43.7%).

Table 4. Female-headed Households. Source: Own elaboration based on 2010 Census data, Statistics and Census Directorate of the Province of Córdoba

Barrio-Ciudad	Total Household Heads	Female Household Heads	Percentage
CIUDAD AMPLIACION CABILDO	577	230	39.9
CIUDAD DE JUAN PABLO II	552	181	32.8
CIUDAD DE LOS CUARTETOS	489	162	33.1
CIUDAD DE MIS SUENOS	511	238	46.6
CIUDAD EVITA	638	241	37.8
CIUDAD MI ESPERANZA	349	127	36.4
CIUDAD OBISPO ANGELELLI	403	153	38
CIUDAD PARQUE LAS ROSAS	325	142	43.7
CIUDAD VILLA RETIRO	316	112	35.4
Totals	4160	1586	
Percentages	100%	38.1	

Table 5. Total households according to UBN status, disaggregated by type of UBN. Source: Own elaboration based on 2010 Census data, Statistics and Census Directorate of the Province of Córdoba

Neighborhoods	Total Households	At least 1 UBN	UBN 1 Overcrowding	UBN 2 Inadequate Housing	UBN 3 Sanitary Conditions	UBN 4 School Attendance	UBN 5 Subsistence Capacity
CIUDAD AMPLIACION CABILDO	577	93	63	0	16	6	16
CIUDAD DE JUAN PABLO II	552	45	29	0	6	4	10
CIUDAD DE LOS CUARTETOS	489	68	53	2	16	3	12
CIUDAD DE MIS SUENOS	511	85	60	0	16	5	8
CIUDAD EVITA	638	95	69	1	20	5	16
CIUDAD MI ESPERANZA	349	50	37	0	1	6	11
CIUDAD OBISPO ANGELELLI	403	81	44	4	12	6	25
CIUDAD PARQUE LAS ROSAS	325	26	22	0	0	2	4
CIUDAD VILLA RETIRO	316	57	40	0	8	5	11
Totals	4160	600	417	7	95	42	113
Percentages	100%	14.4					

Of the total households living in NBI (600 households), critical overcrowding is the determining factor in 69.5% of cases. Overcrowding is associated with obstacles related to rest, nutrition, intrafamilial relationships, and children's socialization, as well as situations of promiscuity and lack of privacy (ECLAC, 1988; cited by Di Virgilio, 2003)—aspects that are essential to families' quality of life. These living conditions are directly related to the dimensions of the housing typology (2 bedrooms) provided for in this social housing policy, which is planned according to the parameters of the traditional nuclear family. In this regard, it is important to highlight the contribution made by French and British studies on housing size: "Research on the subject has concluded that dwellings with minimum floor areas—those smaller than 8 m² per person—cause physical and mental health problems among their occupants, which is why this size has been defined as a pathological threshold. Even in cases of housing with 10 m² per person, harmful effects on occupants have been found, and this range is defined as a critical threshold. These studies recommend that housing be designed with areas of no less than 12 m² per person, and preferably 16 m² per person" (Fernández and Ramos, 2000: n.p.). Based on these recommendations, 41.3% of households would fall below the pathological threshold; although there is no information available on health issues linked to living conditions, this analytical perspective should be incorporated into the evaluation of public housing policies.

Furthermore, in (preliminary) observations conducted in various city neighborhoods, it was found that a common housing strategy among new households is lot densification, achieved by constructing a housing unit in the courtyard of the original homes. These situations shed light on the presence of another NBI indicator in these housing complexes with complete dwellings—related to sanitary conditions (lack of a toilet in the home)—affecting 2.2% of all households (95 households). The two NBI indicators analyzed—overcrowding and sanitary conditions—reflect the households' poverty and limited economic resources, which prevent them from creating new living spaces and demonstrate the persistent difficulties they face in expanding the minimum living space needed for their daily activities. An analysis of the socio-housing conditions of households in these neighborhoods and cities (as a snapshot of the neighborhoods at the time of the 2010 census) allows us to identify certain characteristics that point to a degree of homogeneity in the socioeconomic conditions of resident households, many of which could be classified as vulnerable and living in poverty, given their demographic and housing conditions. By relating these characteristics to the location of the housing complexes within the city, we can conclude that the housing policy analyzed has created socially homogeneous areas on the city's outskirts, as it has been directed toward low-income populations based on criteria of social and territorial targeting in social policies.

3 Conclusion

In Latin America, the implementation of public housing policies in recent years has led to processes of residential segregation among the low-income population, with new housing developments being located in increasingly peripheral areas due to the lower value of urban land. In the case analyzed—the city of Córdoba—this situation is exacerbated by the combination of social and territorial targeting criteria for the target population, the larger scale of the interventions, the uniform architecture of the housing complexes, and their designation as "barrio-ciudades." In this regard, we draw on Cuenya's (2014: 107) argument: "The place where one lives is of central importance: a poor location, when combined with unemployment, poverty, and a lack of services and public transportation, is a co-determinant of the lack of opportunities. The combination of socio-urban deficiencies present in certain areas goes beyond social and income inequalities, becoming a mechanism that contributes to the reproduction of inequality and economic and social marginalization." For segments of the population whose income comes from informal and sporadic activities (odd jobs, street vending, construction, domestic service, etc.), the costs of mobility and the quality of public transportation represent the greatest barrier to accessing the opportunities offered by urban agglomeration, anchoring them in neglected areas where social homogeneity prevails.

Analysis at the neighborhood level, using census data, has allowed us to identify the characteristics of resident households and their living conditions. In general, we have identified the formation of socially homogeneous areas, as well as the conditions of poverty and vulnerability among these households in the city's outlying areas. Although the program has improved some housing situations (delivery of "turnkey" homes in non-flood-prone areas), the analyzed data reveal substandard housing conditions for a high percentage of households, highlighting the difficulties in adapting housing to the needs of each household and thereby perpetuating conditions of overcrowding and promiscuity. The identification of these housing problems and needs must be taken into account in the design of public policies—not only in planning different housing types that meet the population's needs, but also in recognizing that households living in structural poverty require support during the subsequent implementation of the policy (through monitoring and assistance in critical social situations), which their peripheral and isolated location makes difficult to resolve. At the same time, statistical analysis by neighborhood has also helped identify housing complexes where these situations are more or less critical—a useful tool when defining potential public policies for neighborhood improvement in these types of complexes.

In this paper, we present an approach to evaluating the analyzed public housing policy, which has now been in effect for more than ten years. Furthermore, given the time that has elapsed, we have proposed a line of research aimed at studying the ways in which housing policy has influenced the creation of new residential territories, seeking to identify the effects—in terms of the housing complexes' urban integration—stemming from their location within the urban structure, their configuration, and the types of residential environments that have emerged as a result of their development. In this approach, we consider the current situation of the housing complexes, given that the very evolution of urban growth may have had varying impacts on the conditions of deprivation or dissatisfaction that exist today. The questions guiding this phase—and providing continuity to the research—are as follows: How does public housing policy influence the dynamics and transformations of the City of Córdoba and its process of urban growth? What has been the evolution, and what changes have occurred in the urban sectors where the housing complexes are located? And what are the current housing conditions of the residents (considering that demographic changes have occurred in the population and, consequently, new needs and demands regarding housing have arisen)? What levels of satisfaction do they currently express regarding the neighborhood and the immediate surroundings?

Conflicts of interest

The author declares no conflicts of interest regarding the publication of this paper.

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Note

[1] Duhau (2013), citing Andersson, R. (2001), states that "In and of themselves, the socio-spatial hierarchy of neighborhoods and localities or their differentiation based on the predominance of different ethnic or religious groups do not constitute a factor of social disintegration. Living alongside others of similar social status or who share certain origins and values can, on the contrary, facilitate and express specific forms of integration into both the city and society at large."

[2] We agree with Duhau (2013) that there is no single appropriate spatial scale for analyzing the phenomenon of residential segregation and that applying different scales reveals different phenomena.

[3] The study of residential segregation was conducted at the census tract level, which made it possible to identify urban areas characterized by high homogeneity with respect to the groups inhabiting them. Since Argentina's national population and housing censuses do not include indicators for measuring segregation, the number of years of education of the head of household was used as a socioeconomic segmentation variable, which allows us to infer the social classification of households into different socioeconomic groups. Although there are several methods for measuring segregation, the analysis of the level of homogeneity and heterogeneity in the various territorial subdivisions (census tracts) was based on the mean of the selected variable and the statistical calculation of the variance and the coefficient of variation, which expresses the magnitude of the standard deviation relative to the mean of the distribution. For further information, see Marengo and Elorza, 2016.

[4] During fieldwork in the Ciudad de los Cuartetos neighborhood, trucks belonging to the company POL SRL were observed dumping trash on a plot of land adjacent to the neighborhood.

[5] Due to methodological issues in defining census tracts, the data provided by the Directorate of Statistics and Census

of the Province of Córdoba at the neighborhood level did not include the neighborhoods of Ciudad Sol Naciente and Ciudad Ampliación Ferreyra; therefore, we were unable to include them in the analysis of this study.

[6] According to data from the 2010 census, the total population of the city of Córdoba is 1,329,604.

[7] The 'economic insecurity' of female-headed households has been attributed to three basic causal factors: 'the mother's low income-generating capacity,' 'the lack of financial support from the father who does not reside in the household,' and 'the meager benefits provided by the state' (McLanahan and Booth, op. cit.), since to some extent both the mother's low earning capacity and the father's lack of financial contribution point to a characteristic that marks the basic and fundamental difference between poor female-headed households and poor male-headed households. This refers to the frequent presence of a single actual and potential income earner among the former, which makes the issue of the female head of household's personal income crucial; she thus becomes the primary or sole determinant of the household's total income and a fundamental determinant of per capita income" (Geldstein, 1997: 9).