# Development Strategies and Gentrification: the case of the North Axis of Belo Horizonte, Brazil

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**Resumo:**

This paper assesses the degree to which an economic development strategy along the North Axis of the Metropolitan Region of Belo Horizonte (MRBH), Brazil, may have triggered a process of gentrification since 2004. The North Axis is the poorest zone of the MRBH and it has been the subject of investments under the concept of Aerotropolis. The paper uses large samples to identify if a relationship can be established between those development investments and the displacement of low-income households. Results indicates that social relations and social conventions seems to predominate in families' residential decisions in that society, and if real estate developers attract the elites to the area, they probably will live in gated communities. These small islands of wealthy in seas of poverty probably will not displace low-income residents, but the Aerotropolis strategy may increase the inequality within the area, evincing the unequal and combined spatial structure of Latin American metropolis

# DEVELOPMENT STRATEGIES AND GENTRIFICATION

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## ABSTRACT

This paper assesses the degree to which an economic development strategy along the North Axis of the Metropolitan Region of Belo Horizonte (MRBH), Brazil, may have triggered a process of gentrification since 2004. The North Axis is the poorest zone of the MRBH and it has been the subject of investments under the concept of "Aerotropolis". The paper uses large samples to identify if a relationship can be established between those development investments and the displacement of low-income households. Results indicates that social relations and social conventions seems to predominate in families' residential decisions in that society, and if real estate developers attract the elites to the area, they probably will live in gated communities. These small islands of wealthy in seas of poverty probably will not displace low-income residents, but the Aerotropolis strategy may increase the inequality within the area, evincing the unequal and combined spatial structure of Latin American metropolis.

## INTRODUCTION

Gentrification has become a frequent topic on urban studies in the last 20 years. However, most of the authors focused the discussion on the Global-North experience, and the empirical studies with statistically significant samples are quite scarce. Drawing on the experience of a typical Latin American metropolis, Belo Horizonte, Brazil, this paper hopes to advance in both direction. Besides avoiding the directly importation of theories, focusing on the local specificities, we conduct a fieldwork to obtain a significant sample, with nearly 900 questionnaires. To give robustness to the analysis, we also explored Censuses data.

The motive to recent concerns on gentrification of the study area is a number of public investments to create a planned Aerotropolis - the globalized metropolis that has an international airport as the anchor for its development (KASARDA AND LINDSAY, 2011). Accordingly to technocrats who participated in the planning of the Aerotropolis strategy, its main purpose was to foster the regional economy to developed "New Economy" sectors – based on the supposition that supply-side variables are enough to do it. These investments include a series of infrastructural investments, including the Green Line (*Linha Verde*) corridor, which connects the central city to the International Airport Tancredo Neves (AITN); new roads (such as LMG-800); and the relocation of the administrative offices of the state government (*Cidade Administrativa de Minas Gerais*, CAMG). All these plans and developments were sustained by major investments in road and service infrastructure, including a Bus Rapid Transit system (*Move* BRT). Area plans and investments have increased land values in the area, sparking concern about the gentrification. Due to the Aerotropolis marketing campaign, the North Axis of the MRBH became known as the "North Vector".

As the results of this paper indicates, the more than one billion dollar spent to create the Aerotropolis in Belo Horizonte neither displaced the old poor residents from the area nor attracted new elites so far. Indeed, these results brought evidence that the Aerotropolis project worked to evince the tremendous inequality that characterizes Latin American cities, and how public policies often ignores the existence of the poor in the name of dreams of modernity.

Following a literature review, the definition of the study area and the methodology, the paper discusses the results brought by the collected data, to conclude with selected remarks.

## FRAMEWORK ON GENTRIFICATION

Until the mid-twentieth century, the spatial dynamics of US metropolises were largely explained in the academia by the Chicago school's sociological-ecological approach. Authors such as Burgess and Park (1925) pointed to a monocentric city occupied by different social groups in concentric rings. The emergence of the Regional Science since the 1950s, materialized by the Walter Isard's pioneering work, also reflected this vision of space and the process of urbanization of North American metropolises. These theorists saw the trade-off between accessibility and space as sufficient to explain the intense process of suburbanization that had been taking place in the postwar period. New spaces were created in the direction of escaping from the central areas of the city, which was facilitated by better road systems and the mass consumption of the individual car. Such a process is often called White-flight. As Harvey (2014, p. 4-5) points out:

> That dystopian vision [regarding city centers] has been strongly associated with long-cultivated habit on the part of those with the power and privilege of running far from the city centers as possible. Fueled by a permissive car culture, the urge of get some money and get out has taken command. Liverpool's population fell by 40 percent between 1961 and 1991, and Baltimore City's fell from close to one million to under 700,000 in the same three decades.

However, contrary movements began to be noticed in the 1960s. Glass (1964) elaborated a seminal work based on the observation of a return to the city by the upper classes. A series of characteristics repeatedly appeared in these urban changes, such as a revitalization of deteriorated neighborhoods and the consequent displacement of the previously resident families. The families that occupied these revitalized spaces were of a higher socioeconomic level, resembling the British rural nobility, the *gentries*, hence the term coined as **gentrification**. Glass' description on the process of gentrification allows us to understand that gentrification was triggered by the deindustrialization of central areas. These areas went from deindustrialized to decayed; from decayed to "underground", frequented by low-income youths and infant artists; from "underground" to "cool", when that agglomeration starts to gain scale and becomes recognized by more diverse social groups; and finally, from "cool" to "fashion", as the areas reverse their social status (or urban

convention). Then, highly qualified young people integrated into more modern and sophisticated economic sectors become demanders of the area (BETANCUR, 2014; CARDOSO, 2013).

The restructuring of neighborhoods under the process of gentrification is commonly understood as a process of **displacement** of former residents, by various factors. The direct displacement occurs from the rising prices of land in these spaces, due to the new demand for these locations. Rising real estate prices may prevent former residents from having financial conditions to stay there, especially those living in rented homes. Moreover, there is also indirect displacement, which acts to make life in the neighborhood unbearable for the former residents. When there is a typical gentrification process, a new daily life is implemented in these localities, and the established social relations are dissolved. Although these changes may be attractive to new residents, the loss of social and identity connections repels former residents. This implies new services that do not correspond to the habits of consumption of the old residents and neighbors that do not have proximity and identification. Thus, the indirect displacement, equally uncontrollable by the residents of the area affected by a process of gentrification, ends the transformation of the neighborhood (MARCUSE, 1985).

Several authors have been discussing the theme of gentrification over the last decades based on the Global-North experience. In order to clarify the subject, it is useful to separate the literature on gentrification into two major groups of authors or approaches. One approach focuses on the action of capital, which aims to maximize profits, in the urban spaces. Another approach has as main determinant for agency, taking into account a change of preferences by the individuals.

The fundamental contribution of Neil Smith's (2002; 1996) critical approach is to address the role of capital as the main agent of gentrification. In contrast to neoclassical views, which encompasses theories that seek to understand the process as a change in consumer preferences, Smith understands that it is the search of capital for higher rates of profit in cities what determines urban dynamics. However, this does not mean that other agents are not decisive for gentrification, since it is a process with many specificities. Among the necessary arrangements, the author discusses the participation of the State and of the classes that will occupy the spaces to be revitalized. The role of the State is to provide a favorable environment for the invested capital, providing property rights, financing conditions and complementary services for the revitalization of the neighborhood. According to Smith, the State has also a necessary role in legitimation, defending the idea that investments will bring about benefits to the city. The deterioration of the neighborhoods drops the land value and of real estate therein. However, land value is not completely determined by what is built on it, but mainly by its potential use. When land is too cheap in a decayed urban area, profits prospected by the revitalization of these areas will be very high compared with a non-decayed urban area. Hence, capital may make high profits promoting a gentrification process. This difference between land value before the area's transformation and land value after the area's transformation is called **rent gap**.

Other structural theoretical framework seeks to explain gentrification from socioeconomics changes. It emphasizes the patterns of economic development and the form

of accumulation. In the cities called post-industrial by some authors, the most qualified jobs (cognitive and science-based functions) gained relevance, demanding agglomeration economies in the related sectors. In the long preceding paradigm, between 1930 and 1980, characterized by the Keynesian State and the Fordist industry in the developed countries (Almeida et al., 2015), the work was massified and standardized. These changes have created built environments that are now seen as unpleasant, such as industrial cities and industrial districts. This pattern of development led to the production of working-class neighborhoods and large housing estates in the suburbs. In opposition, after the 1980s, the high technology and advanced services sectors, which demand more specialized workers, started to exhibit high growth rates. The sectors known as FIRE (finance, insurance and real estate) also outperformed in the last decades. As these more dynamic sectors typically clustered in city centers, due to the relevance of agglomeration and urbanization economies, housing and offices demands growth have also outperformed in these centralities. The workers and managers with this sort of insertion in the job market have become the potential gentrifiers (BETANCUR, 2014).

On the other hand, there is the emphasis on the benefits brought about by revitalization of declining areas. In this latter view, despite some inconveniences, the result is understood as a sign of prosperity for the inhabitants of the city and marked by the rise of a middle class, as in Caulfield (1994). In this case, the concept of gentrification is avoided. The most used term, as an alternative to the term gentrification, is social mix. It represents the understanding that neighborhoods may be experiencing a mix of cultures, from residents of diverse backgrounds and social strata. This diversification is seen as beneficial for the city as a whole, as it fosters the exchange of experiences and knowledge, enhancing the entrepreneurial character that cities assume in the 21st century, in a context of global competition. In this way, the return of the upper classes to the urban centers creates a trickle down process, where an economic elite takes on the vanguard role in economic growth, and the results obtained overflow to all levels of society. Within the Urban Economics, Edward Glaeser's work (for instance, GLAESER & MARÉ, 2001), which has been called "City Triumphalism" by its critics (PECK, 2016), stands out in this line. Richard Florida's works is also noteworthy, with the concept of "creative class" to refer to workers employed in the sectors of the "New Economy" (FLORIDA, 2002) - and who are singled out as potential gentrifiers by the critical authors. Therefore, the field of research on gentrification remains wide open. Questions are still relevant and not conclusive. The displacement of people is still under discussion. One of the contemporary guidelines discusses the extent to which the term gentrification can explain experiences of urban transformation in peripheral countries. The difficulty of understanding these phenomena in the Global-South contexts persists. **In the case of Latin America, where cities can be understood as a hybrid of pre-Columbian, colonial, mercantilist, industrial, and post-Fordist traits, processes of alteration of accumulation regimes may become dominant but do not erase the traces of previous time-periods** (VISSER AND KOTZE, 2008; BETANCUR 2014; SIQUEIRA, 2014a).

Investigating the specificity of the hypothesis of gentrification for Latin American cities, Betancur (2014, p. 4, our emphasis) points out that:

Deregulation and privatization opened the doors to speculative transactions enhancing financialization and money markets. As in the North, the industry of space boomed. In the housing front, capital focused first and foremost in new projects for middle to upper classes (e.g., vertical and horizontal gated communities, urban sprawl, office campuses, tourism, shopping centers, culture, and entertainment venues), further commoditizing cities, again as per their form and level of incorporation to global circuits. Still, different from the North, **regime shift was limited by the region's underdevelopment and the complexity of hybrid land and property markets with high levels of informality, a large, often majority population working in this sector, self-help, and limited market capacity**. As a result, restructuring has lagged behind the North.

Moreover, the labor market of Latin American cities has produced fewer potential "gentrifiers" than the labor market of cities in developed countries. These facts plays key roles on both demand-side and supply-side of the real estate market on the continent:

In turn, the emergence of **gentrifiers** is a function of the size and the concentration of high services jobs in CBDs and of city's role in and penetration by newly dominant accumulation regimes. Although growing in Latin American cities, mainly in Brazil, Mexico, Argentina, Chile, and Colombia, the share and compensation of such jobs are far lower than in the North and, again, **clustered outside old downtowns**. Meanwhile, cities continue to be majority lower income **exhibiting the most skewed income distributions in the world. Middle classes are far smaller in Latin America than in the North**: World Bank estimates put them at 30 percent in 2012 — roughly the same size of those living below the poverty line. (...) Added to this is the mediation of culture with the *new classes* reoccupying centrally located areas in the North and **their Latin American counterparts being lured by exclusive new gated communities, high-rises, high-end clusters** (e.g., Santa Fe in Mexico City), and other developments **away from the CBD**. Research suggests that the populations attracted to central area living consist mainly of students, households qualifying for public incentives (case of Santiago), nontraditional, moderate-income households, retirees, and some intellectuals and artists. (...) Although upper and middle class relocation outside central areas has been a historic constant, it did not take over low-income neighborhoods; only recently has it taken place near peripheral low-income settlements forming **gated "islands" of privilege in seas of misery** (Betancur, 2014, p. 4-5). Our emphasis.

Similar traits of gentrification has been observed by other Latin American authors, such as Sabatini et al., (2009) and Siqueira (2014b), for the cases of Chile and Brazil, respectively. Sabatini et al. (2009) highlights that gentrification may occur in Latin American cities without displacement, mainly due to peripheral available land for elites. Thus, as highlighted by Betancur's work (2014), gentrification in Latin America presents itself with at least four striking features:

1. Economic restructuring in Latin America has been less intense than in other parts of the world;

2. Central areas have less potential to generate land value than in developed countries;

3. Removing poor populations from strategic areas to investors are formidable challenges to gentrification; and

4. In Latin America, new real estate for elites, such as gated communities, have been located preferentially in the peripheries.

As the data of this research demonstrate, these specific characteristics of the Latin American cities are present in the case study conducted for the North Axis of the MRBH.

## STUDY AREA AND THE AEROTROPOLIS STRATEGY

**Table 1- Population and Income within the Study Area (2010)**

| Cities | Population | Average Income (US$) |
|---|---|---|
| Belo Horizonte | 255,800 | 619.83 |
| Santa Luzia | 103,956 | 388.00 |
| Vespasiano | 68,851 | 338.39 |
| **North Vector** | **428,607** | **533.10** |

Source: Own elaboration from the 2010 Census - IBGE.

The study area is composed of parts of the municipalities of Belo Horizonte, Santa Luzia and Vespasiano. The total amount of inhabitants of the study area is 428,607, as shown in Table 1. In addition, it shows that the average income of the head of household of Belo Horizonte is almost twice as high as of the other localities. As a reference base, the minimum wage per month in 2010 (at 2017 values) is US$241.09. Therefore, the average income of the study area is over twice higher than minimum wage. It illustrates how MRBH has a higher income than the Brazilian average.

There are about 5 million residents in the MRBH. It is the 7th most populous metropolis in Latin America and the 3rd in Brazil. MRBH is composed of 34 municipalities, including the capital itself, Belo Horizonte, and its area encompasses 9,640 km².

The geographical area called "North Vector" does not officially exist. That is, in official political divisions, such as municipalities, the Minas Gerais state government or the federal government, there is no spatial unit called "North Vector". One of the findings of this research is that the policy makers who planned the Aerotropolis strategy also did not call the area that way at the beginning of their project. According to an interview given by one of the main policy makers, the name came out in October 2003 - from a conversation between him and the international professor and consultant John D. Kasarda, author of the Aerotropolis concept. The primary idea was an expression that showed designs that "vectorized", in the sense of giving a direction.

Furthermore, it is worth to note the role of international consultants on these projects. Kasarda, who coined the term "Aerotropolis" during his academic career (Appold and Kasarda, 2013; Kasarda and Appold, 2014; Kasarda and Lindsay, 2011), sold it as a

development strategy to a number of local governments. In the case of Belo Horizonte, other international firms, such as Jurong and CH2M Hill, also participated in the planning of the area. The key idea behind the planned Aerotropolis is that the supply of an airport hub is enough to foster sophisticated exports, since high-value added sectors are the ones who uses the air modal. Therefore, a planned Aerotropolis inverts the causal relation: it is not a city with a strong productive sector that demands the existence of advanced and large-scale logistics infrastructures, but the other way round. It creates a sort of "Spatial Say Law", supposing that the simply offer of infrastructure is enough to foster economic growth.

The main 5 projects that concerns the interventions in the North Vector is summarized above:

**Table 2 – Main projects in the study area**

|  | Beginning | Delivery | Description |
|---|---|---|---|
| *Linha Verde* | 2005 | 2009 | The Belo Horizonte's Linha Verde Project is composed of three interventions totaling 35.4km in length and passing through the state's capital and three other cities. Its proposal is to facilitate the link between the central area of Belo Horizonte and the AITN. |
| *Cidade Administrativa de Minas Gerais* | 2005 | 2010 | The CAMG, whose project was elaborated by the Brazilian starchitect Oscar Niemeyer, is the headquarters of the government of Minas Gerais. It is located in the municipality of Belo Horizonte, in the Serra Verde neighborhood, where it borders two other municipalities: Vespasiano and Santa Luzia. |
| **Tancredo Neves's International Airport** | 2015 | 2016 | Tancredo Neves's International Airport is the largest airport of RMBH. In a partnership between the federal SOE (Infraero) and the State Government, it was planned to expand the airport, transforming it into an industrial airport, as well as the main passenger hub in South America. |
| **Bus Rapid Transport** | 2012 | 2014 | The "MOVE" is a BRT system along six Belo Horizonte's avenues, connecting the center of Belo Horizonte to the Northern Vector of the Metropolitan Region. |
| *Shopping Estação* | 2010 | 2012 | Shopping Estação is a mall located in the Northern region of Belo Horizonte. It has a strategic position, located in a confluence of three great avenues. Also, it integrates a transport hub with the subway terminal, buses and the MOVE system. |

Source: authorship.

Given this fact, this research began its analysis from empirical observations of satellite images and fieldwork in the affected areas, as well as the location of the main investments. The area understood to be potentially affected by it was too extensive for the deadlines and resources available for this research. Therefore, we decided to restrict the study area to a more specific area, described below.

**Figure 1 - Study Area and selected neighborhoods**
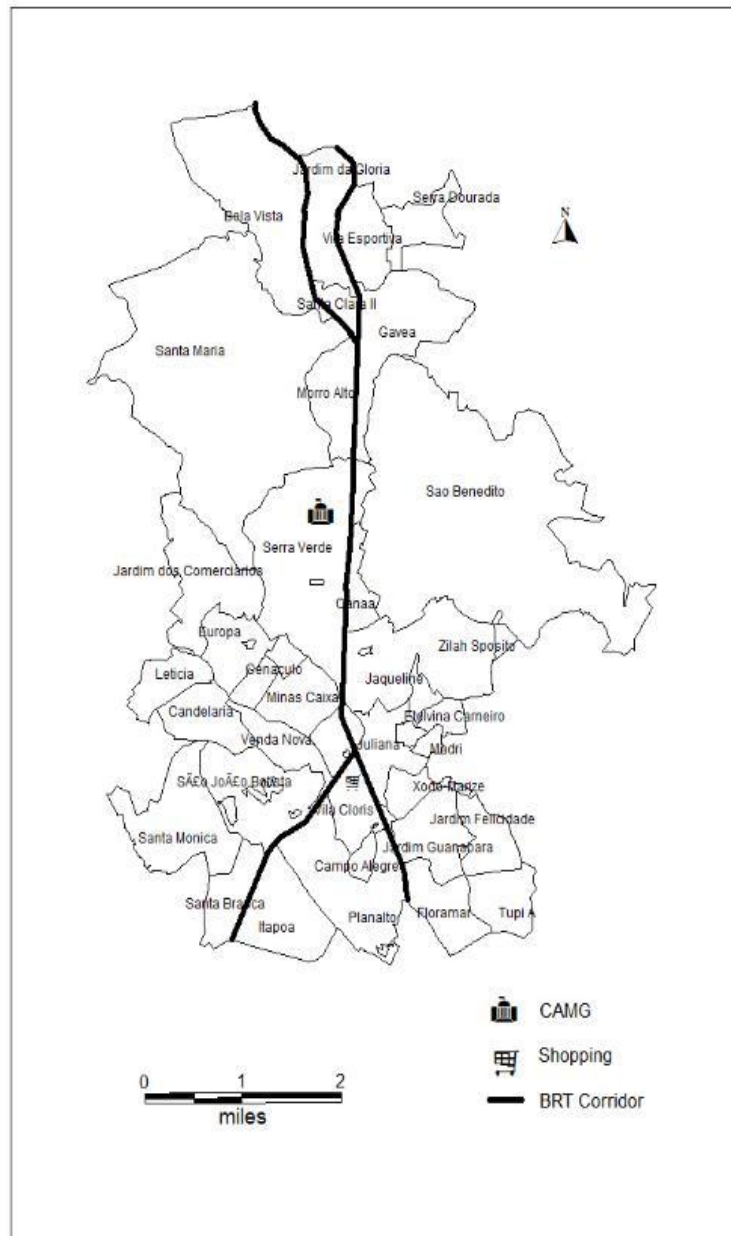


Source: authorship

## DATA AND APPROACH

In Brazil, the Demographic Census is conducted by IBGE every ten years. In this research, the Censuses data were used to answer the following question: was there a change in the demographic profile of the study area from 2000 to 2010? This is the period-time in which the announcements and beginnings of the major investments analyzed in this survey occurred. From the analysis of the variables on average monthly income, age, dwelling property status, and number of residents, it is possible to find important elements to answer that question.

Since the next IBGE's Census is supposed to happen only in 2020 and the previous one occurred in 2010, this survey lacked up-to-date data on the study area residents' profile. Besides the simple fact that the data of 2010 are outdated, the time-period 2010 – 2017 was a very relevant one. In addition to the fact that the inauguration of the analyzed investments occurred only after 2010, the Brazilian economy experienced significant growth in the same year (GDP real growth of 7.5%), followed by a drop in real interest rates between 2012 and 2014, and a deep economic and political crisis from 2014 to now on. Thus, there are many motivations to assume that significant changes occurred between 2010 and 2017.

Besides to comparing the profile of residents between 2010 and 2017 based on Censuses, this field survey also allowed to add specific questions about the research theme. Overall, we applied 897 questionnaires within the previously identified study area (see Maps 1 and 2). Both in the number of questionnaires applied by neighborhood or region, and in the distribution of household typologies – house, apartment, shack – we sought to approximate as much as possible the proportions to be in accordance with those of the 2010 Census.

## NEITHER GENTRIFICATION NOR COMPATIBLE INVESTMENTS: FAMILY FABRIC AND SIMILAR NEW RESIDENTS

The variable "average monthly nominal income of the head of permanent household" allows for an analysis of the evolution of family income over the time-period between 2000 and 2010. Map 1 uses Censuses tracts data and the spatial units to represent the neighborhoods that we constructed. This map informs monetary values in 2017 Brazilian Reais (BRL) (1 US$ = R$3,28 on 03/18/2018). Four main conclusions may be stated. The highest relative income areas are concentrated to the south of the study area for the two time-periods. The areas in the extreme north ascended in the hierarchy of relative income in the area, from a low level to a middle level. The district of *São Benedito*, in the east, had an important extension of the areas of high and middle-income and of the areas of low-income. Finally, the extensive low-income areas to the north remain stagnated in relative terms.

We compared this data with the information obtained in the survey conducted in 2017. Faced with the difficulty presented in the pilot project of the survey to obtain more accurately information about the average monthly income of the families, we chose to use

the variable average expenditure of families. Respondents were reluctant to reveal income, or reported it inaccurately. Although they are different variables, they are highly correlated variables, as Map 2 depicts. In this Map, the polygons inform average expenditure values of families for the areas. Due to a smaller number of observations, we did not use Census tracts as the spatial unit, but the neighborhood.

Map 2 depicts relevant evidences: the expansion of the middle-income groups to the northwest portion of the study area; the rise of the northern part of the study area for a middle-upper income level; and the rise of neighborhoods in the southeast portion of the study area to the middle-upper income level.

Map 3 informs the dynamic of one of most classical variables in Urban Economics analysis, population density. As usual for Latin American patterns, the slums and informal areas are the ones with the highest densities. From 2000 to 2010, the density increased in the southern portion and the southeast portion. It also took place in the northern portion of the study area. Curiously, Venda Nova neighborhood (located in the middle of Map) lost density, a result also observed by Diniz and Véras (2017). However, we suppose that this latter result may be interpreted as an evidence of rising income levels of the residents, which made it possible to the younger people to acquire their own home in other neighborhoods, and not as a gentrification process as those authors interpreted it. Other evidences found by this research also support this supposition.

**Map 1 - Average Monthly Income – Study Area (2000-2010)**
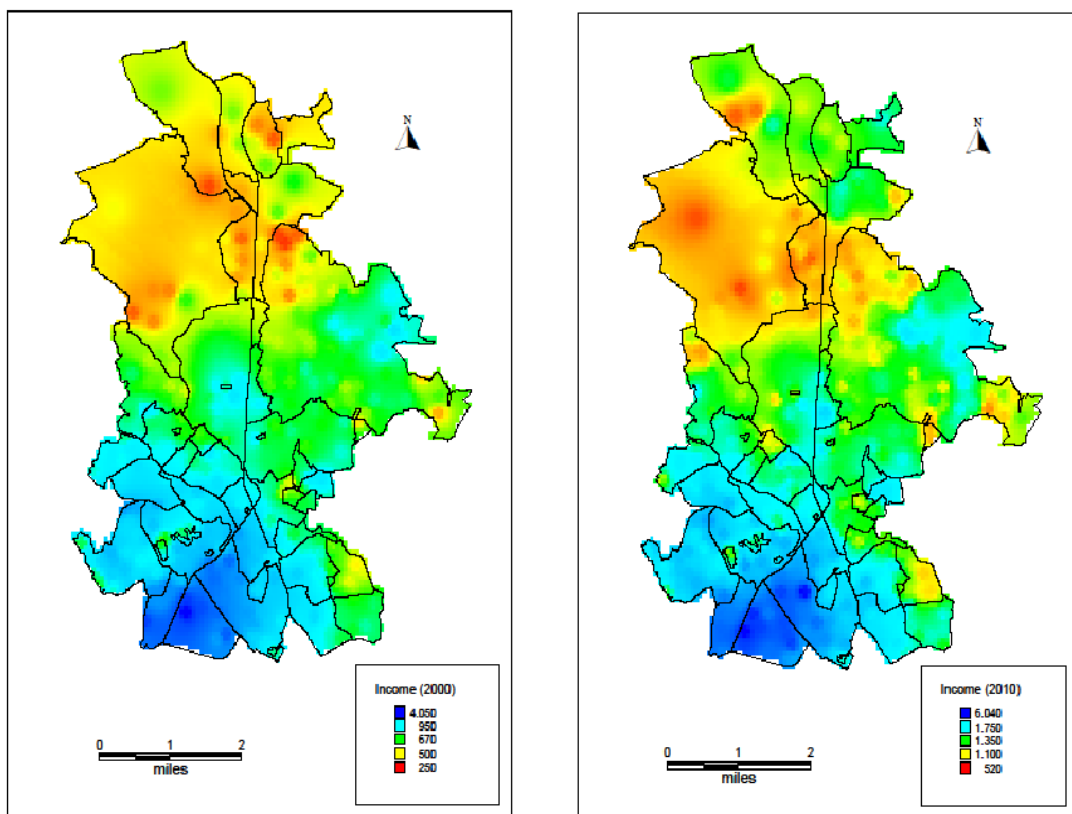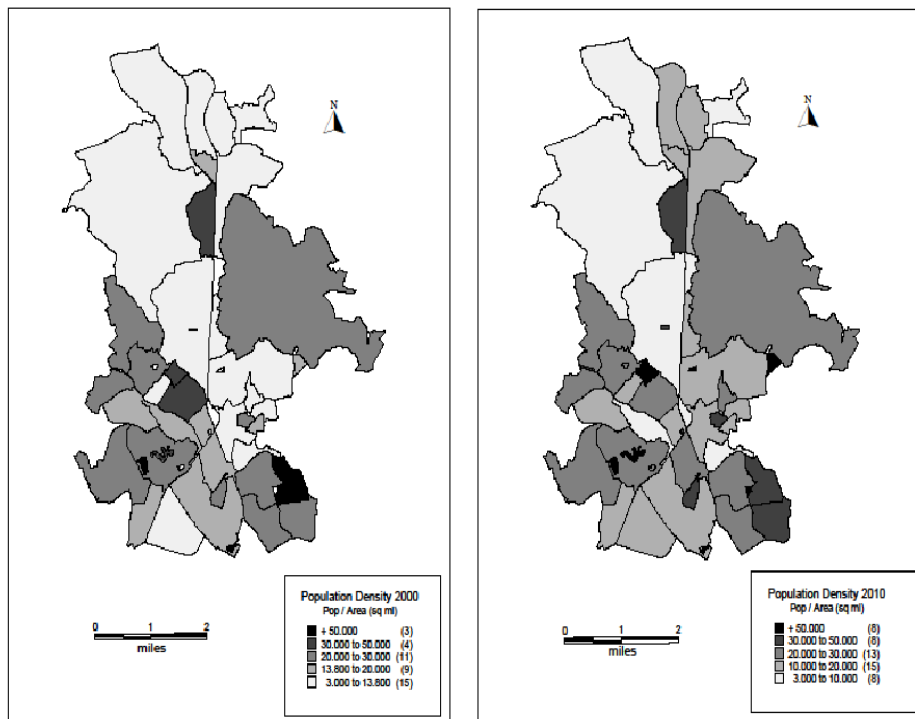


Source: Our own mapping of Census data.

**Map 2 - Average Monthly Expenditure – Study Area (2017)**
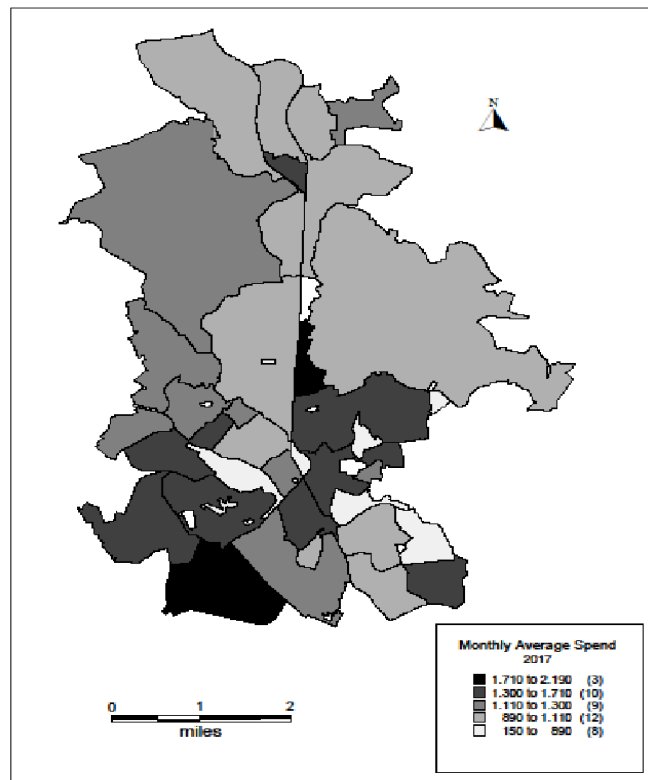


Source: our own survey.

**Map 3 - Population Density – Study Area (2000-2010)**



Source: own mapping of Census data.

To establish comparisons with other peripheral areas in the MRBH, we created an East Vector, which contains Belo Horizonte's Northeast region and the contiguous portion of the municipality of Sabará (Carvalho de Brito), and a Southwest Vector, which contains Belo Horizonte's Barreiro region, the contiguous municipality of Ibirité and the adjacent municipality of Sarzedo. We selected these vectors because they have similarities with the North Vector, being historically peripheral popular and low-income regions. Almeida et al. (2017), using a fuzzy cluster analysis for the housing market of the MRBH, classified Ibirité, Sarzedo, Vespasiano and Santa Luzia within the same cluster (same typology).

**Table 3 - Population and income comparisons between the study area and other regions - 2000 and 2010**

| Regions | Population 2000 | Population 2010 | Population Growth 2000 - 2010 | Income 2000 (in R$) | Income 2010 (in R$) | Income Growth 2000 - 2010 |
|---|---|---|---|---|---|---|
| **Study Area** | **386291** | **428607** | **11%** | **969** | **1759** | **81%** |
| East Vector | 343182 | 366755 | 7% | 1096 | 2074 | 89% |
| Southwest Vector | 410659 | 466489 | 14% | 744 | 1947 | 162% |
| Minimum Wage | - | - | - | 151 | 510 | 238% |

*Except the study area.

Source: own elaboration based on Census data.

Table 3 summarizes the levels and growth rates in average incomes and population for the selected areas and vectors from 2000 to 2010. In general, the poorest the area, the higher the rate of income growth. The study area had the lower rate of income growth (81%) among the three vectors. Therefore, these statistics bring evidences to support the hypothesis that the Aerotropolis strategy did not make the study area to grow more than other peripheral areas in the MRBH.

**Chart 1 - Home Occupation Condition in three peripheral areas for 2000 and 2010**
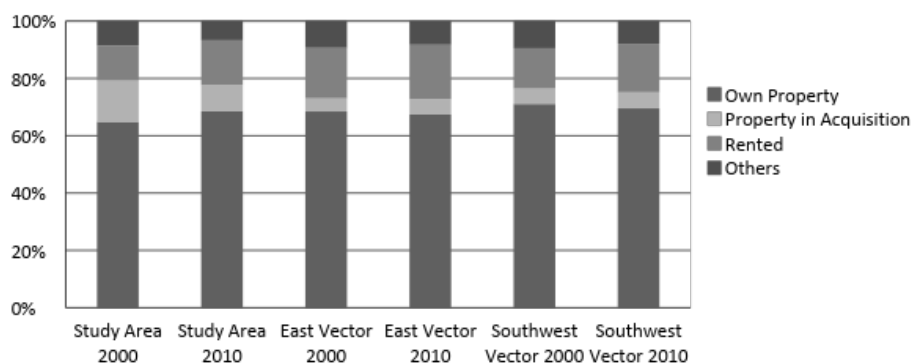


Source: Own elaboration based on Censuses Data.

Regarding home ownership variables (as can be seen in Chart 1), all the selected regions had essentially the same dynamics: the rise of the percentage of already paid own

homes, the rise of rental percentage and the drop of lent homes. The study area behaved slightly different in the percentage of families who were paying mortgages, a percentage that rose in the other two vectors.

Finally, demographic data depicted by Chart 2 shows the aging of population in all the selected regions. It is important to note that in all three regions the percentage of population younger than 40 years old was higher than 73% in 2000, and higher than 65% in 2010. People older than 60 years old represent only 6% in 2000, and 9% in 2010, in the study area. One of the implications of these numbers, interpreted together with the rate of home ownership, is that **the study area is a relatively consolidated area - young families living in their own homes**. Real estate developers have relatively few options to buy land plots that are vacant due to elder residents who passed away. It will probably take many decades to increase the possibility of radical updates in ownership structure within these areas.

**Chart 2 – Population Age Ranges in three peripheral areas for 2000 and 2010**
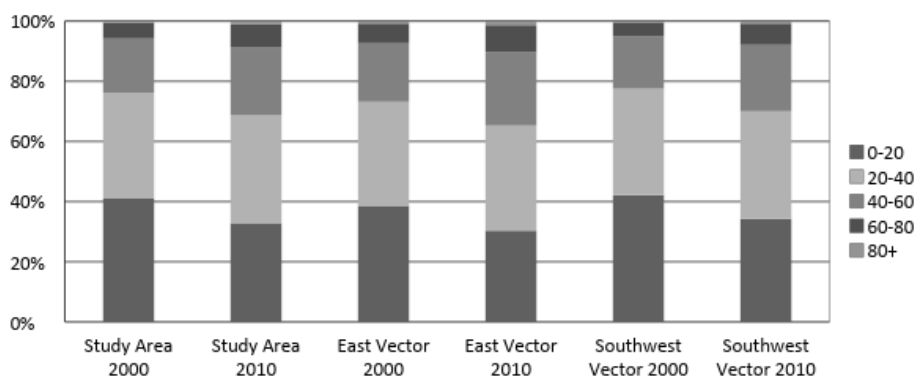


Source: own elaboration based on Censuses Data.

In the analysis of the fieldwork data, our main aim is to answer the following questions: are there evidences of a gentrification process within the study area? Moreover, if so, where did low-income residents displaced by gentrification move to?

The answers are that there is no gentrification process within the study area so far and low-income residents have not been displaced to anywhere. What we observed, indeed, was the permanence of low-income residents in areas where they have lived for a long time: 63.88% of the residents interviewed live in the same place for more than 15 years.

**Table 4 - Period when residents moved to the neighborhood**

| Period | Frequency | % total |
|---|---|---|
| Natives* | 207 | 23,08 |
| Before 2004 | 366 | 40,8 |
| 2004-2010 | 138 | 15,38 |
| 2011-2017 | 186 | 20,74 |
| **Total** | **897** | **100** |

*People who declared that were born in the area.

Source: own elaboration from survey.

Actually, there is evidence of migratory flows towards the area, without necessarily implying a displacement of the previous residents. About 49% of 510 questionnaires said they met new residents in the neighborhood. As Table 4 suggests, the influx of residents to the study area increased from 2011 to 2017.

In order to evaluate the hypothesis that the residents of the region suffered pressures to move, whether due to economic reasons or others, we asked to residents if they intended to move from their current dwelling. 30.5% of the respondents answered affirmatively. The main reasons cited were moving to a home of their own; violence; lack of infrastructure in the neighborhood; to improve life standards; to look for opportunities elsewhere; dislike the region; and to go back to hometown (countryside). Of all these reasons, as can be seen in Table 5, none seems to be directly related to a displacement flow. More importantly, many of the answers revealed the income increases (observed through Censuses' data): a part of residents moved or intends to move because now they are less poor and can afford their own property and better neighborhoods. Therefore, the federal social policies implemented up to 2015 seem to still having some positive impacts over the low and middle-income residents in the study area.

**Table 5 - Reasons to move from the current residence**

| Reason | Frequency | Percent | Cumulative Percent |
|---|---|---|---|
| Home ownership | 32 | 13,50 | 13,50 |
| Violence | 29 | 12,24 | 25,74 |
| Lack of infrastructure | 24 | 10,13 | 35,86 |
| Improve life standards | 23 | 9,70 | 45,57 |
| Looking for opportunities | 21 | 8,86 | 54,43 |
| Dislike | 19 | 8,02 | 62,45 |
| Go back to countryside | 16 | 6,75 | 69,20 |
| Bad location | 12 | 5,06 | 74,26 |
| Leave family environment | 12 | 5,06 | 79,32 |
| Looking for tranquility | 9 | 3,80 | 83,12 |
| Go near the family | 9 | 3,80 | 86,92 |
| Tourism | 9 | 3,80 | 90,72 |
| Go near workplace | 9 | 3,80 | 94,51 |
| Marriage | 8 | 3,38 | 97,89 |
| Live in a house | 5 | 2,11 | 100,00 |
| **Total** | **237** | **100,00** | |

Source: own elaboration from survey.

Analyzing the residents who do not intend to move, which represents 69.5% of the sample, **social relations is a strong reason not to move**. An attachment to the region is perceived either by family relations within the locality or by dwelling ownership. The main reasons cited, specifically, were roots that they have in the neighborhood; liking the place; the neighborhood is a quiet place; the neighborhood has retail nearby; and dwelling ownership. All the reasons cited are in Table 6. Once again, it can be seen that the

interventions in the region do not seem to have altered in a forceful way the experience in these neighborhoods to the point of the residents being disturbed. On the contrary, the perception about the neighborhood seems to remain the same.

**Table 6 - Reasons to stay at the current residence**

| Reason | Frequency | Percent | Cumulative Percent |
|---|---|---|---|
| Roots | 105 | 20,04 | 20,04 |
| Likes the place | 98 | 18,70 | 38,74 |
| Quiet place | 91 | 17,37 | 56,11 |
| Commerce nearby | 51 | 9,73 | 65,84 |
| Home Ownership | 43 | 8,21 | 74,05 |
| **Total** | **524** | **100,00** | |

Source: own elaboration from survey.

Deepening the survey analysis, it is possible to differentiate the degree of satisfaction of each neighborhood. The majority of the residents, around 70%, do not plan to move, even in the neighborhoods with low-income levels. Considering the residents with intentions to move from the current dwelling, we asked to where they would move. For the interviewees who said they intend to move, not everyone indicated where they would go to, but the observations collected already give an indication of the destination place. It seems that the plan is to move to better neighborhoods within the study area or the "North Vector", indicating the hierarchy in the region. The five highest ranked neighborhoods in terms of social status accounts for 26% of the planned destination. They also mentioned Belo Horizonte's downtown.

Based on all these observations, the evidences do not corroborate the hypothesis of gentrification in the study area. In general, people in the sample expected to keep on living in the same dwelling they live, and when they plan to move, they plan to move within the study area. Social relations and income growth (on the last decade) seem to offset eventual increases in living-costs.

**Table 7 - Reason to have moved to NV**

| Reason | Frequency | Percent | Cumulative Percent |
|---|---|---|---|
| Home Ownership | 204 | 30.18 | 30.18 |
| Marriage | 99 | 14.64 | 44.82 |
| Workplace nearby | 51 | 7.54 | 52.37 |
| To improve life standards | 41 | 6.07 | 58.43 |
| To a better house (owned or rented) | 33 | 4.88 | 63.31 |
| Family | 29 | 4.29 | 67.60 |
| Divorcement | 24 | 3.55 | 71.15 |
| Family problems | 20 | 2.96 | 74.11 |
| Other | 175 | 25.88 | 100 |
| **Total** | **676** | **100** | |

Source: own elaboration from survey.

Investigating the origin of the new residents, we observed that most of them came from the study area. Among the most cited neighborhoods of origin, only four do not belong to NV, but they are neighborhoods composed of residents of similar social strata. Considering the main reasons for moving (Table 7), we found home ownership; marriage; job; improvement of living standards; better housing; family reasons; and divorce. In this panorama, the study area seems to be an area with available new real estate for young families.

## CONCLUSIONS

Assessing the impact of the planned Aerotropolis in Belo Horizonte may illuminate some other cases of gentrification in the Global-South. In spite of the land value increases in the study area, the Aerotropolis' investments do not seem to be displacing the poor residents who live there. The study area has shown rising living standards measured by income levels, as do other peripheral regions, probably due to federal distributive policies and the minimum wage from 2003 to 2014. Most of the residents do not intend to move from there. New low and middle-income residents are being attracted to the area, but the majority of them also has roots in the region. Social relations seems to predominate in families' residential decisions in that society, rather than land or transport costs. The area is a consolidated region, and if real estate developers attract the elites to the area, they probably will live in gated communities – fortified enclaves. These small islands of wealthy in seas of poverty probably will not displace low-income residents, but the Aerotropolis strategy may increase the inequality within the area, evidencing the unequal and combined spatial structure (OLIVEIRA, 1981) of Latin American metropolis.

In a broader view on these investments, if the state government's main purpose was to promote economic development, these investments have been showing very limited results. There is a tremendous disconnection between the investments and their users. Minas Gerais' exports are characterized by low-added value and high-volume, such as iron ore, coffee and steel, which means that airport infrastructure does not fit into this economic logistic structure. Urban transportation investments focused on large avenues and highways designed mainly for cars, while the metropolitan region lacks mass transportation options. Residents and entrepreneurs criticized the BRT system. Many local bus routes that connect neighborhoods to downtown no longer exist, leading users to take two buses now. Users affirm that it increased travel time and tariffs, in many cases. State government did not initiate the construction of a light train (VLT) projected to the area neither the North Beltway. Considering the administrative offices, CAMG also shows a disconnection between residents who live around it and the profile of technocrats who work there.

Nonetheless, some of these investments may have a relevant role in promoting a new urban centrality in the Northern region of Belo Horizonte, promoting job opportunities and avoiding commuting to the central city, as proposed by the Metropolitan Plan. The CAMG already relocated thousands of works from the central city. Despite its problems, the BRT is still a relevant mass transportation option in many Latin American cities (RODRIGUEZ

& TOVAR, 2013; RODRIGUEZ & MOJICA, 2008). Its success depends fundamentally on the way it operates, on tariff levels and on the possibilities of integration with other modals. Displacement of low-income residents may be avoided by strengthening the local economy, mostly based on popular economy, and not by ignoring their existence because of high-tech dreams.

Finally, this work opens some research avenues. A significant part of the land value generated by these LSUP probably "leaped" over the low-income areas and has been privately captured by real estate developers in Northern municipalities. Therefore, a future research may assess these impacts on municipalities other than Belo Horizonte. A detailed study on how exactly to recover the land value created is also necessary.

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