

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

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 indicate that social relations and social conventions seem 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.

Key words: gentrification, airports, urban sprawl, infrastructure, Latin America.

Thematic Area: Políticas Públicas.

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1. 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 directions. Besides avoiding the direct importation of theories, focusing on the local specificities, we conducted 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 – a planned airport city (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 develop “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 indicate, the more than one billion dollars 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 ignore 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.

2. 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 (Park et al., 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: 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**.

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 (De Verteuil 2011; Marcuse 1985).

Several authors have been discussing the theme of gentrification over the last decades based on the Global-North experience (Betancur 2010; De Verteuil 2011; La Grange and Pretorius 2014). 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 (Ellen, Horn, and O'Regan, 2013).

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. Since land value is not 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 socioeconomic changes. It emphasizes the patterns of economic development and the form of accumulation. In the cities called post-industrial⁶ by some authors, the most qualified jobs (cognitive and science-

⁶ Soja (2000) explicitly criticizes the term "postindustrial" because he understands that contemporary cities continue to be characterized largely by the industrial logic. For this author, a more appropriate term is "post-Fordist," indicating that there is a change in the industry standard, with the loss of relative importance of heavy industries of mass

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 (Davidson, 2008). It represents the understanding that neighborhoods may be experiencing a mix of cultures, from residents of diverse backgrounds and social strata. 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 and 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. 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 (Betancur 2014; Siqueira, 2014a).

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

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.

production and relative importance of industries based on the new techno-economic paradigm of communication and information technologies.

Moreover, the labor market of Latin American cities has produced fewer potential "gentrifiers" than the labor market of cities in developed countries. These facts play 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**. (...) 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.

3. 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.

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.

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. Furthermore, this sort of insertion of the local economy in the "New Economy" sectors overlooked those unable to participate on it, as well as those who are more actively excluded (Atkinson and Easthope, 2009).

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
<i>Linha Verde</i>	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.
<i>Cidade Administrativa</i>	2005	2010	The CAMG, whose project was elaborated by the starchitect Oscar Niemeyer, is the headquarters of the state government of Minas Gerais. It is located in the Linha Verde Corridor.

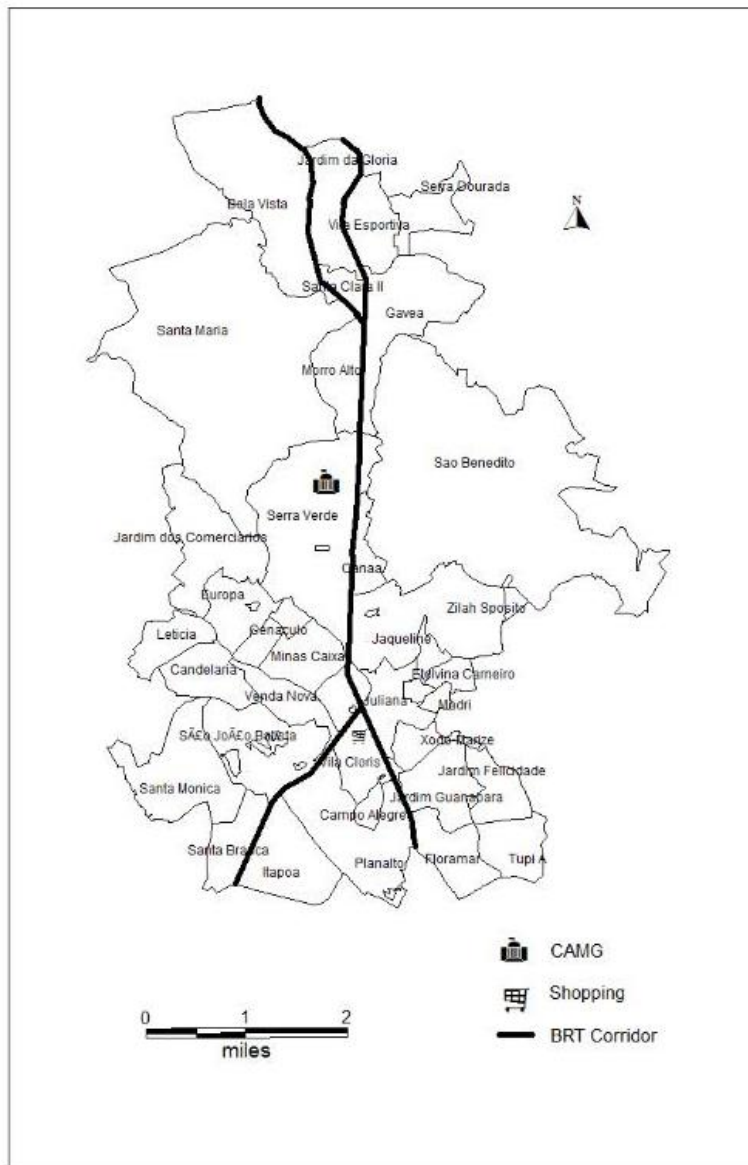
de Minas Gerais

Tancredo Neves's International Airport	2015	2016	Tancredo Neves's International Airport (AITN), in Confins, 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, connecting it to the high-tech industrial logistics to be developed around it.
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, shown in Figure 1.

Figure 1 - Study Area and selected neighborhoods



Source: authorship.

4. 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 and dwelling property status, 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. 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, a federal program on housing (*MCMV*), 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. 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. Our results probably differs from Diniz and Verás' (2017) ones, who also studied a portion of the North Axis of Belo Horizonte, due to the methods they employed. They did not have a statistical significant sample and studied a very geographic limited portion.

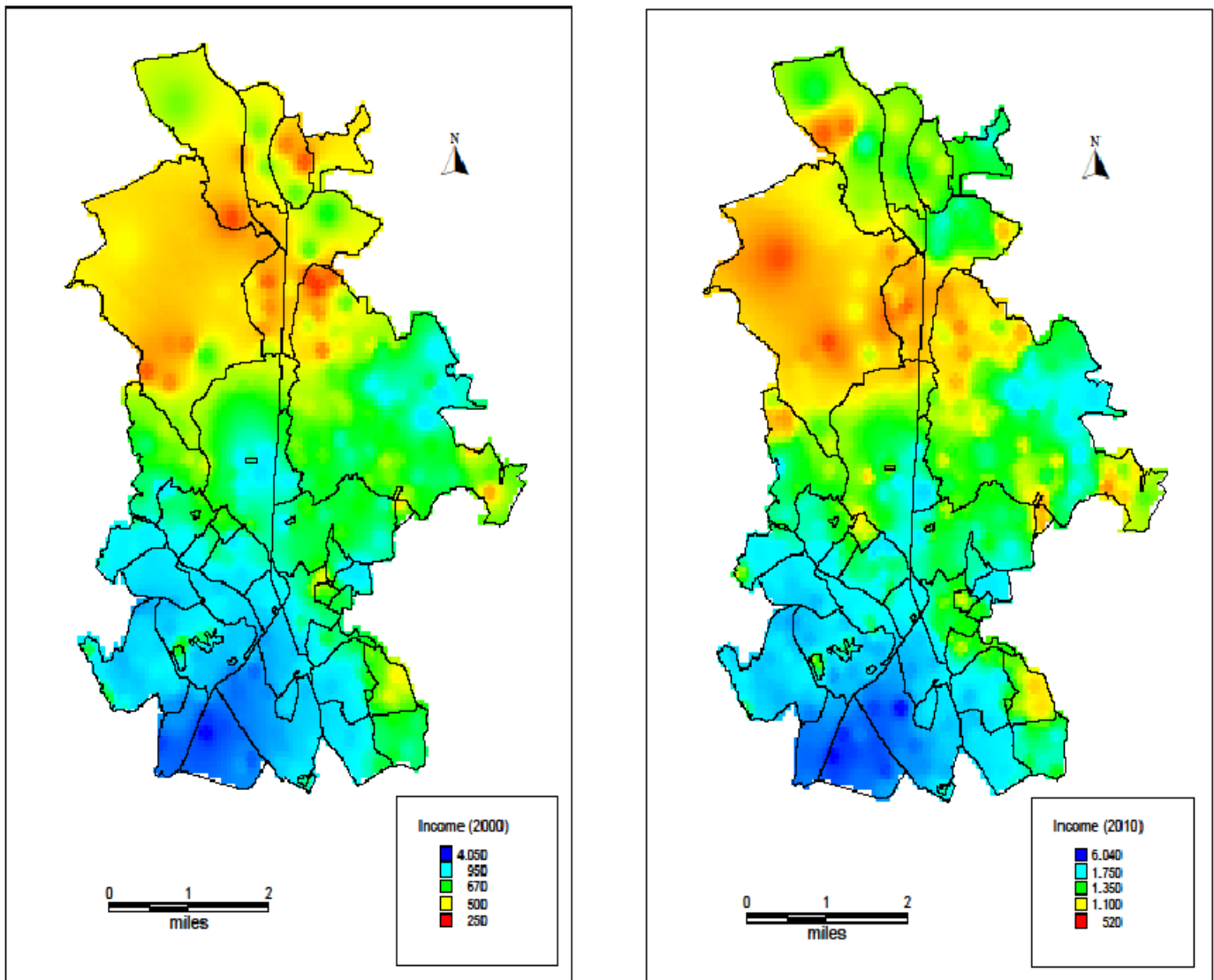
5. Neither gentrification nor compatible investments: family fabric and similar new residents

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. 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.

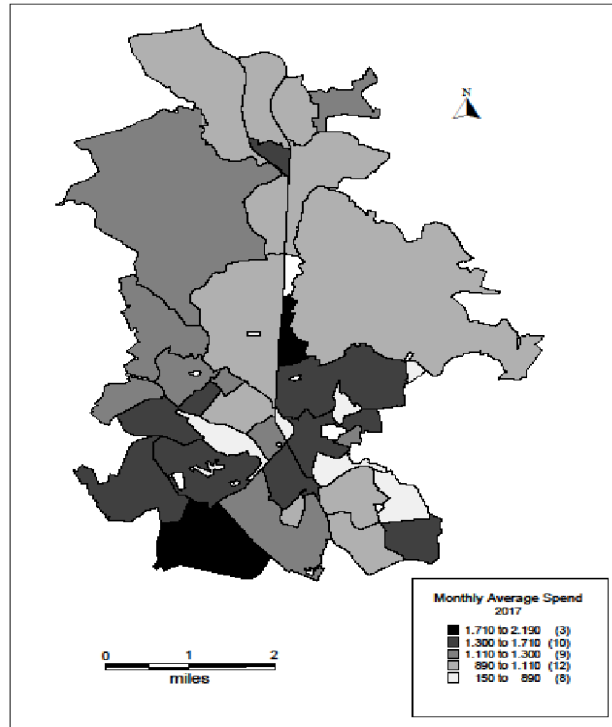
Map 2 depicts relevant evidences: the expansion of the middle-income groups to the northwest portion of the study area; the rise of the northern part of the study area for a middle-income level; and the rise of neighborhoods in the southeast portion of the study area to the middle-upper income level.

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.

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, 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 these neighborhoods within the same cluster.

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 (R\$)	Income 2010 (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%

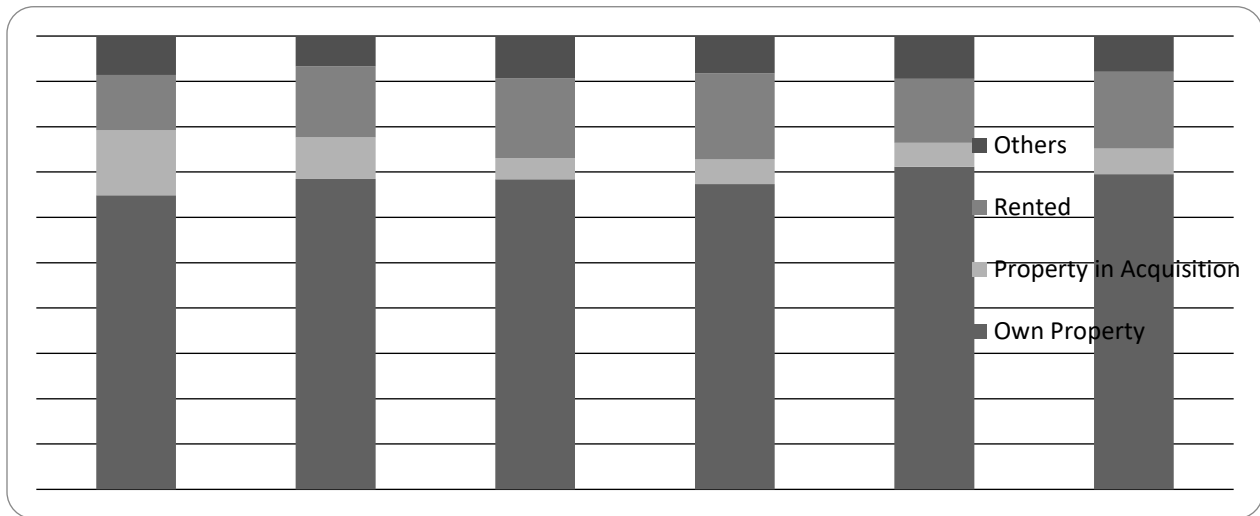
*Except the study area.

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.

Regarding home ownership variables (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.

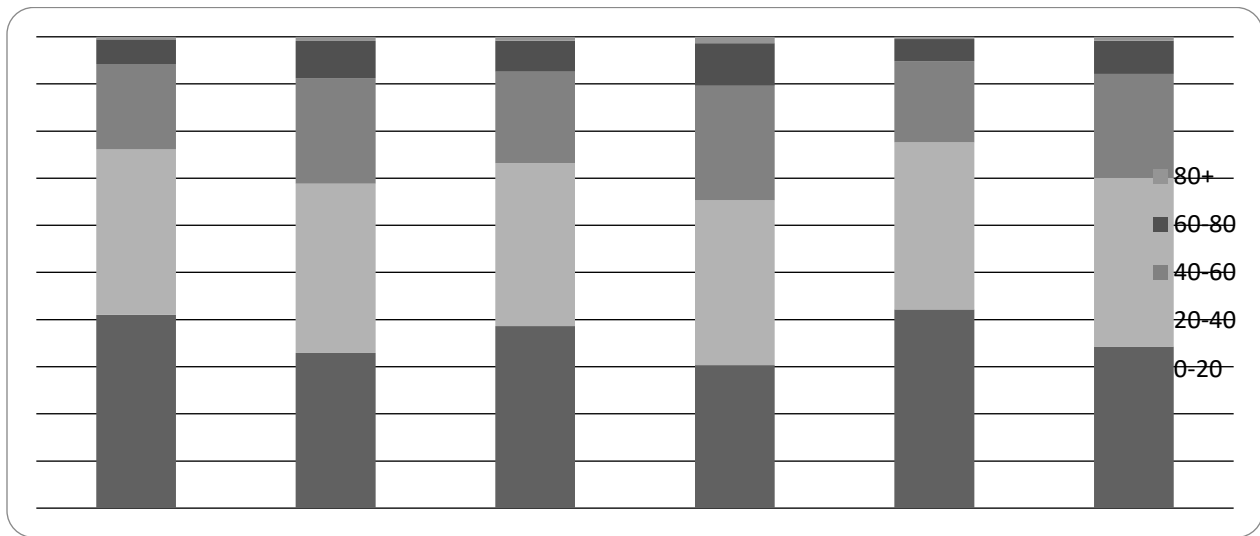
Chart 1 - Home Occupation Condition in three peripheral areas for 2000 and 2010



Source: Own elaboration based on Censuses Data.

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.

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; and dislike the region. 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 (not related to Aerotropolis) 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

Motive	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
Total	237	100,00	100

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.

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.

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.

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.

6. Conclusions

Assessing the impact of the planned Aerotropolis in Belo Horizonte may illuminate some other cases of gentrification in the Global-South. 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.

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 Plan⁷. 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 e Tovar 2013; Rodriguez e Mojica 2008). 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.

⁷ The Metropolitan Plan of Belo Horizonte – PDDI/RMBH (2009-2011) proposes three new metropolitan centralities of the RMBH, one of them in the NV. See www.rmbh.org.br.

References

- Almeida, R.P., Cavalcante, A.T.M., and Monte-Mór, R.L.M., 2015. *Fiscal and Urban Policies: The State as a Space Producer in the Fordist- Keynesian Era*. Working Paper 521, Belo Horizonte: Center for Development and Regional Planning (Cedeplar/UFMG).
- Almeida, R.P., Monte-Mór, R.L.M., and Amaral, P.V.M., 2017. Implosão e explosão na Exópolis: evidências a partir do mercado imobiliário da RMBH. *Nova Economia* 27, 323–350. <https://doi.org/10.1590/0103-6351/3142>
- Appold, S.J., and Kasarda, J.D., 2013. The Airport City Phenomenon: Evidence from Large US Airports. *Urban Studies* 50, (6) 1239–1259.
- Atkinson, R., and Easthope, H. 2009. “The Consequences of the Creative Class: The Pursuit of Creativity Strategies in Australia’s Cities.” *International Journal of Urban and Regional Research* 33 (1): 64–79. <https://doi.org/10.1111/j.1468-2427.2009.00837.x>.
- Betancur, J.J. 2010. Gentrification and Community Fabric in Chicago. *Urban Studies* 48 (2): 383–406. <https://doi.org/10.1177/0042098009360680>.
- Betancur, J.J., 2014. Gentrification in Latin America: Overview and Critical Analysis. *Urban Studies Research* 2014, 14. <http://dx.doi.org/10.1155/2014/986961>
- Davidson, M. 2008. Spoiled Mixture: Where Does State-Led ‘Positive’ Gentrification End? *Urban Studies* 45 (12): 2385–2405. <https://doi.org/10.1177/0042098008097105>.
- De Verteuil, G. 2011. Evidence of Gentrification-Induced Displacement among Social Services in London and Los Angeles. *Urban Studies* 48 (8): 1563–80. <https://doi.org/10.1177/0042098010379277>.
- Diniz, L. dos S., and Vêras, M. P. B. 2017. The Economic and Spatial Restructuring and Development Process in the North Sector of the Metropolitan Regional of Belo Horizonte, Minas Gerais. *Revista Brasileira de Estudos Urbanos e Regionais* 19 (2): 310–25.
- Ellen, I. G., Horn, K. M. and O’Regan, K. M. 2013. Why Do Higher-Income Households Choose Low-Income Neighbourhoods? Pioneering or Thrift? *Urban Studies* 50 (12): 2478–95. <https://doi.org/10.1177/0042098012474511>.
- Florida, R., 2002. *The Rise of the Creative Class*. And How It’s Transforming Work, Leisure and Everyday Life., 1st ed. Basic Books, New York.
- Glaeser, E., Maré, D., 2001. Cities and Skills. *Journal of Labor Economics* 19, 316–342.
- Glass, R., 1964. Introduction: Aspects of Change, in: *London: Aspects of Change*, Centre for Urban Studies. MacKibbon and Kee, London, pp. xiii–xlii.
- Harvey, D., 2014. Cities or Urbanization?, in: *Implosions/Explosions: Towards a Study of Planetary Urbanization*. (Eds.) Neil Brenner, Christian Schmidt. Jovis, Berlin, p. 576.
- Kasarda, J.D., Appold, S.J., 2014. Planning a Competitive Aerotropolis. Kenan-Flager Business School, Chapel Hill.
- Kasarda, J.D., Lindsay, G., 2011. *Aerotropolis: The Way We’ll Live Next?*, 1st ed. Farrar, Straus and Giroux, New York.
- La Grange, A., and Pretorius, F. 2014. State-Led Gentrification in Hong Kong. *Urban Studies*, January. <https://doi.org/10.1177/0042098013513645>.
- Oliveira, F. de, 1981. *A Economia Brasileira: Crítica à Razão Dualista*, 4th ed. Editora Vozes, Petrópolis.
- Park, R., Burgess, E.W., McKenzie, R.D., 1925. *The City*. University of Chicago Press, Chicago.

- Peck, J., 2016. Economic Rationality Meets Celebrity Urbanology: Exploring Edward Glaeser's City. *International Journal of Urban and Regional Research* 40, 1–30. <https://doi.org/10.1111/1468-2427.12321>
- Rodriguez, D.A., Mojica, C.A., 2008. Land value impacts of bus: the case of Bogota's Transmilenio. *Landlines Newsletter of the Lincoln Institute of Land Policy* 2–24.
- Rodriguez, D.A., Tovar, E.V., 2013. Sistemas de transporte público masivo tipo BRT (Bus Rapid Transit) y desarrollo urbano en América Latina. *Landlines Newsletter of the Lincoln Institute of Land Policy* 16–24.
- Sabatini, F., Robles, M.S., Vásquez, H., 2009. Gentrificación sin expulsión, o la ciudad latinoamericana en una encrucijada histórica. *Revista 180* 18–25.
- Siqueira, M.T., 2014a. In Search of Gentrification: The Local Meanings of Urban upward Redevelopment in São Paulo, Brazil (PhD Thesis). University of Illinois at Chicago (UIC), Chicago.
- Siqueira, M.T., 2014b. Entre o fundamental e o contingente: dimensões da gentrificação contemporânea nas operações urbanas em São Paulo. *Cadernos Metrópole (PUCSP)* 16, 391–416.
- Smith, N., 2002. New Globalism, New Urbanism: Gentrification as Global Urban Strategy. *Antipode* 34, 427–450. <https://doi.org/10.1111/1467-8330.00249>
- Smith, N., 1996. *The New Urban Frontier: gentrification and the revanchist city*. Routledge, London; New York.