

## MIGRATION IN INTERMEDIARY CITIES IN THE INTERIOR OF THE BRAZILIAN NORTHEAST: THE ATTRACTION OF MIGRATION AS A DISTINCTIVE ELEMENT

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### Abstract

*In Brazil, the debate on intermediary cities gained prominence when the urban population supplanted the rural during the 1970s, and when, in the metropolises, there began a deconcentration of the population which, as from the 1980s, was redistributed across the metropolitan surroundings and the interior of the states. Thus, the aim of the present study is to discover how many intermediary cities there are, where they are located in the interior of the Northeastern region and their relevance in attracting migrants. Microdata was used from the 2010 demographic census, specifically the fixed data topic that questions migrants on their place of residence five years before the reference date of the survey. The results have demonstrated that, although most cities presented a population decline, with a move towards very distant locations (interregional), a large number play a relevant role in intraregional attraction (medium distance) and, notably, intrastate (short distance), which exercise the role of deconcentrating the population of the metropolises. The main immigrant destinations were Caruaru (PE), Petrolina (PE) and Mossoró (RN). On the other hand, the cities presenting the highest negative migration balance were Imperatriz (MA), Itabuna (BA) and Ilhéus (BA). Furthermore, through a literature review and data collected by the study, it was discovered that the definition of an intermediary city based on the criterion of population size is no longer recommended for a country of continental dimensions and distinct stages of development such as Brazil.*

### Keywords

*Intermediary Cities; Northeast; Interior; Migration.*

## MIGRAÇÃO EM CIDADES MÉDIAS DO INTERIOR NORDESTINO: A ATRAÇÃO MIGRATÓRIA COMO ELEMENTO DISTINTIVO

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### Resumo

*No Brasil, o debate sobre cidades médias ganha destaque quando a população urbana suplanta a rural nos anos 1970 e as metrópoles começam a desconcentrar a população e redistribuí-la pelo entorno metropolitano e interior dos estados a partir da década de 1980. Assim, este trabalho objetiva saber quantas são as cidades médias, onde estão localizadas no interior do Nordeste e qual sua relevância na atração de migrantes. Foram utilizados os microdados do Censo Demográfico 2010, precisamente o quesito data fixa, que pergunta ao migrante sobre o lugar de residência cinco anos antes da data de referência da pesquisa. Os resultados mostram que, apesar de a maioria das cidades apresentarem perda populacional para destinos de mais longas distâncias (inter-regional), grande parte é relevante na atração intrarregional (média distância) e, notadamente, intraestadual (curta distância), que exercem o papel de desconcentrar a população das metrópoles. Os principais rumos dos imigrantes foram Caruaru (PE), Petrolina (PE) e Mossoró (RN). Por outro lado, as cidades com maiores saldos migratórios negativos foram Imperatriz (MA), Itabuna (BA) e Ilhéus (BA). Ademais, por meio da revisão da literatura e dos dados levantados pelo estudo, constata-se que a definição de cidade média baseada no critério de tamanho populacional não é o mais indicado para um país com dimensões continentais e em distintos estágios de desenvolvimento como o Brasil.*

### Palavras-chave

*Cidades Médias; Nordeste; Interior; Migração.*

# MIGRATION IN INTERMEDIARY CITIES IN THE INTERIOR OF THE BRAZILIAN NORTHEAST: THE ATTRACTION OF MIGRATION AS A DISTINCTIVE ELEMENT<sup>1</sup>

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## Introduction

France was the pioneering country in studies on intermediary cities conducted during the 1950s, a concern guided by regional imbalances, the accelerated urbanization of Paris and the disorganization of space (CONTE, 2013). Throughout the 1960s, the concept of intermediary cities was developed, and their role was defined, present in the Five-Year Economic and Social Development Plan (1971-1976), in which one of its objectives was to deconcentrate the economic and populational activity of large metropolises (COSTA, 2002).

The said plan mentions the intention to create a policy aimed at receiving investments for intermediary cities, for attracting migrants and for keeping the population at the place of birth, by generating jobs in inland cities with a certain infrastructure. Thus, France expanded its urban network through a system of intermediary cities that began to play a fundamental role in the reorganization of space and in the complementarity of functions with the metropolises (LAJUGIE; DELFAUD; LACOUR, 1979) based on a more balanced distribution of both wealth and population.

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In Brazilian literature, concern with regard to the functioning of intermediary cities began in the 1950s (CONTE, 2013), with an increase in the volume of long-distance migrations from the rural areas of the Northeast and in the state of Minas Gerais towards the urban-industrialized areas of the most developed metropolises in the country, most notably São Paulo and Rio de Janeiro (BRITO, 1999). These, in turn, presented a high rate of population growth and quickly became urbanized (MARTINE; CAMARGO, 1984; OJIMA, 2013; OJIMA; FUSCO, 2017).

However, the discussion gained prominence during the 1970s, when the urban population supplanted the rural (OLIVEIRA; SOARES, 2014). In Brazil, as in the case of France, reflection on intermediary cities and their role, to some extent, was the result of a government plan adopted between 1975 and 1979, the II National Development Plan (known as the II PND), which was considered a milestone in the national urban policy (STEINBERGER; BRUNA, 2001). Initially, the debate surrounding the role played by intermediary cities was considered within the context of metropolitan areas, which acquire an intermediate importance in the hierarchy of large metropolises, “mainly in the manner in which the people’s way of life is structured and in the very organization of the urban-metropolitan fabric”<sup>2</sup> (MARANDOLA JR., 2010, p. 203).

The surrounding areas of the large Brazilian metropolises gained relevance in absorbing part of the migrant population, especially the salaried working class, who, due to the high cost of housing in the capitals, began to live far from the workplace, resulting in the daily practice of pendular displacement, whereby some intermediary cities located close to the metropolises acquired the status of dormitory cities (OJIMA et al., 2010; OJIMA; MARANDOLA JR., 2012).

Sposito (2004) indicated that, as from the 1970s, the market for land and urban properties in the state of São Paulo, for example, grew, diversified and became more expensive. With this, the urban landscape changed, the periphery of the metropolis expanded, differentiating and segregating spaces and people, thereby acquiring new socio-spatial practices. Thus, territorial fragmentation occurred either with horizontal expansion or extensive urbanization of the central/capital areas, which began to present a lower population growth than the cities in the metropolitan surroundings (VITTE, 2010).

Alongside the population growth of the major Brazilian metropolises and the increased prices of urban land, during the execution of the II PND, the growth of the country was accompanied by an explicit industrializing policy which, at the same time, decentralized the Southeast towards the national periphery (NEGRI, 1992).

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2. This and all non-English citations hereafter have been translated by the authors.

Some of the capitals and inland cities in the Northeastern region received investments through the mining-metallurgical complex (Maranhão), the exploration of fertilizers (Sergipe), soda ash production (Rio Grande do Norte), textile and clothing complexes (Fortaleza), the agro-industrial complex (Petrolina/PE – Juazeiro/BA), fruit growing complexes (Açu/RN -Mossoró/RN), the petrochemical complex (Camaçari/BA) and the new agricultural grain frontier (Barreiras/BA, southern Maranhão and western Piauí). Confronted with this scenario, the Northeast, on the one hand, has integrated and combined intense modernization with traditional structures within the region itself, and on the other, has become integrated with the most developed and industrialized regions of the country (BACELAR, 2002; ALENCAR JÚNIOR, 2003).

Therefore, with the II PND and the “fiscal war” and/or the policy of tax incentives adopted by the state governors in the Northeast during the late 1980s and early 1990s, regional markets formed and expanded, which, to a certain extent, reduced the economic distances between the regions, through the interiorization of development. In the midst of these measures, “the intermediary cities were present in all these regional strategies” (STEINBERGER; BRUNA, 2001, p. 43-44). In turn, as from the 2000s, the interiorization of technical and higher education also gained prominence, thereby modifying the relationship and dynamics of the Northeastern intermediary cities with the capitals, by bringing about a reduction in the social and economic inequality between metropolis and interior (BACELAR, 2014; FUSCO; OJIMA, 2017).

Thus, the growth trend of intermediary cities is observed not only in national and regional metropolises or in the metropolitan surroundings, but also in cities far from large urban centers, located in the interior of the country (BAENINGER, 1999), which have also experienced a process of urbanization and a rapid, intense population concentration (MARTINE; CAMARGO, 1994).

Lima and Silveira (2018) developed an important theoretical review on the conceptual pathway of intermediary cities and, in general terms, the configuration of the population tended to be one aspect for consideration. It is not by chance that part of this criterion is the very genesis of the in-depth debate that, later, added functional, structural and political aspects to the concept. However, it should be mentioned that the conceptualizations of intermediary cities almost never assess the relational aspect and the manner in which this dimension tends, or not, to flexibilize the concept. In other words, even if a more detailed analysis extrapolates the mere configuration of the population, the use of functional classifications also tends to distort the complexity of the concept, since it presupposes a set of minimum variables, generally defined based on a totalizing functional expectation.

In view of this context and given that, until now, there have been very few studies on migration to and from intermediary cities located in the interior of the Northeast, the aim of this work is to analyze this dynamic using three modalities of flows: interregional (long distance), intraregional (medium distance) and intrastate (short distance). It is necessary to know who gains or who loses migrants and to know their relevance in attracting the population. For this purpose, microdata from the 2010 Demographic Census (IBGE, 2012) have been used as the main source of data. In addition, it is argued that certain aspects of migratory dynamics, such as the greater or lesser attractiveness of a municipality, may be incorporated into the discussion on the concept of intermediary cities, in order to overcome the limitation of the solely quantitative dimension.

In addition to this introduction, the work has three more sections. The first briefly discusses the concept of intermediary cities based on the quantitative dimension (population size) and indicates some of the characteristics and specificities of the 30 intermediary cities located in the interior of the Northeast, and which are the focus of this study. The second section covers the materials and methods adopted to achieve the proposed objectives. The third section addresses the results and main conclusions regarding the migratory dynamics in the locations under analysis. Lastly, we present our final considerations.

## 1. Brazilian intermediary cities

The aim of this section is to promote a brief reflection on adopting a single demographic criterion to classify an intermediary city, i.e., the population size. The precise objective is to debate the extent to which the configuration of the population (100 thousand to 500 thousand) defined by the IBGE serves the Brazilian reality, marked by differences in regional, territorial, and populational aspects, as well as demographic density, the degree of urbanization, occupation, settlements and the different stages of economic development.

### 1.1 The debate on demographic criterion (population size)

According to Soares (1999), the demographic criterion of population size to conceptualize intermediary cities is the simplest, quickest and most convenient manner, but is incomplete since it does not take into account the urban, geographical, economic, social, political and cultural characteristics of each space/region/country. Souza et al. (2007) indicated that, despite the necessary complexity in the theoretical definition of intermediary cities, countless countries, in different parts of the world, in addition to government agencies, begin with the demographic cri-

terion, precisely from the population volume. This assertion is evident in Table 1, given that the quantitative criterion is adopted in different parts of the globe, with a range of population limits.

Country	Population
Germany	150,000-600,000
Argentina	50,000-1,000,000
<b>Brazil</b>	<b>100,000-500,000</b>
Denmark	< 100,000
Spain	30,000-130,000
US	200,000-500,000
France	20,000-100,000
Greece	10,000-100,000
Ireland	50,000-100,000
Italy	50,000-300,000
Pakistan	20,000-100,000
Portugal	20,000-100,000
UK	150,000-600,000
Sweden	50,000-200,000
European Union	20,000-500,000
Entity	Population
World Bank	Up to 1,000,000
UN	100,000-3,000,000

Table 1. Classification of an intermediary city by the range of population size

Source: Souza et al. (2007, p. 7).

However, this demographic measure is questionable for large countries, such as Brazil. With the knowledge that the countries of Europe and of South America have smaller territorial dimensions (with the exception of Russia) and quantitative populations than the Brazilians, it may be observed that Germany, Argentina, the United Kingdom, the World Bank and the United Nations (UN) define intermediary cities with a higher limit than that adopted in Brazil. The United States and the European Union have a similar higher limit, and the other countries use a higher limit very distant from the Brazilian case, around 100 thousand inhabitants. The comparison between these countries and Brazil reveals that the inadequacy of the demographic criterion to measure intermediary cities based on population size is a worldwide problem, since there seems to be no consideration on the scale of analysis and heterogeneity between spaces, nor a consensus on the concept.



In a country with continental dimensions, it may be verified that the state of Amazonas has a large territorial extension (1,571,000 km<sup>2</sup>), while the state of Sergipe has only 21,190 km<sup>2</sup>. It should be noted that the municipality of Altamira in Pará, with 159,533 km<sup>2</sup>, is larger than the Federal District and eleven other Brazilian federal states, combined with striking differences regarding the urban network, the economic, social, demographic, and cultural levels and the radius of influence. Therefore, it is necessary to incorporate other dimensions into this scale and/or measure and, consequently, into the concept.

Although we are aware of this problem, it is important to emphasize that this study will adopt the demographic/population dimension in the classification of an intermediary city, in order to confirm that this measure is not ideal. In order to broaden the debate on these criticisms, we will appropriate the survey Areas of Influence of Cities 2018 (Regic), developed by the IBGE (2020), so that, whenever possible, we may place into perspective the characterization of the population volume used and the conjunctural aspects that may distinguish an intermediary city. However, as the main objective of the article is more to develop an analysis of migratory flows and less to discuss and propose the criteria for the classification of intermediary cities, the Regic classification will serve as a support, and not as a limit of the categories of analysis. This is mainly due to the fact that we seek to centralize the analysis within the municipal political-administrative framework and that of Regic characterizes the regional context based on population arrangements.

According to the Regic proposal, the municipality groupings are functional units that may be formed by more than one municipality, considering them as being inseparable within the scope of the study. These are strongly integrated conurbated municipalities due to pendular displacement for study and work (IBGE, 2020). Thus, although we agree that it is necessary to incorporate this integration in order to consider the regional dynamics, for the design of the article we have considered the municipality in isolation as a unit of analysis. Moreover, the configurations classified by the ranges of population volume constitute a fundamental parameter (also subject to a number of criticisms) for the distribution of resources to the Municipal Participation Fund (FPM). Therefore, in view of the trend of the demographic transition and the reduction of population growth rates for the whole country (OJIMA, 2016), migratory flows take on a relevant role in understanding municipal configurations (ALLEBRANDT et al., 2019).

## 1.2 The growth of intermediary cities in the interior of Northeast Brazil

Based on the criterion of population size for delimiting intermediary cities adopted in this study, the number of intermediary cities in the interior of the Northeast increased from 23 in 2000 to 30 in 2010. Seven migrated to this profile, two



in Maranhão (Açailândia and Bacabal); one in Ceará (Itapipoca); one in Paraíba (Patos); and three in Bahia (Eunápolis, Paulo Afonso and Porto Seguro), while Feira de Santana was no longer registered in this condition, since it rose to the classification of a large city. As a result, Bahia has more intermediary in the interior of the Northeast (11) and Sergipe has none (Table 2). From the viewpoint of the functional classification proposed by Regic 2018 (IBGE, 2020), there is a situation in which 19 out of 30 cities have maintained the same classification found in Regic 2007 (IBGE, 2008).

UF	City	Pop. 2000	Pop. 2010	Pop. Growth rate (%)	Regic 2007	Regic 2018*
MA	Açailândia	88.320	104.047	1,65	Centro de Zona A	Centro Sub-Regional B
MA	Bacabal	91.823	100.014	0,86	Centro Sub-Regional A	Centro Sub-Regional A
MA	Caxias	139.756	155.129	1,05	Centro Sub-Regional A	Centro Sub-Regional A
MA	Codó	111.146	118.038	0,60	Centro de Zona A	Centro Sub-Regional B
MA	Imperatriz <sup>1</sup>	230.566	247.505	0,71	Capital Regional C	Capital Regional C
MA	Timon <sup>2</sup>	129.692	155.460	1,83	Capital Regional A	Capital Regional A
PI	Parnaíba	132.282	145.705	0,97	Centro Sub-Regional C	Centro Sub-Regional A
CE	Crato <sup>3</sup>	104.646	121.428	1,50	Capital Regional C	Capital Regional B
CE	Itapipoca	94.369	110.065	2,09	Centro Sub-Regional B	Centro Sub-Regional B
CE	Juazeiro do Norte <sup>3</sup>	212.133	249.939	1,65	Capital Regional C	Capital Regional B
CE	Sobral <sup>4</sup>	155.276	188.233	1,94	Capital Regional C	Capital Regional C
RN	Mossoró	213.841	259.815	1,97	Capital Regional C	Capital Regional C
PB	Campina Grande <sup>5</sup>	355.331	385.213	0,81	Capital Regional B	Capital Regional C
PB	Patos <sup>6</sup>	91.761	100.674	0,93	Centro Sub-Regional A	Centro Sub-Regional A
PE	Caruru	253.634	341.912	2,19	Capital Regional C	Capital Regional B
PE	Garanhuns	117.749	129.408	0,95	Centro Sub-Regional A	Capital Regional C
PE	Petrolina <sup>7</sup>	218.538	293.962	3,01	Capital Regional C	Capital Regional C
PE	Vitória de S. Antão	117.609	129.974	1,00	Centro Sub-Regional B	Centro Sub-Regional B
AL	Arapiraca	186.466	214.006	1,39	Capital Regional C	Capital Regional C
BA	Alagoinhas	130.095	141.949	0,88	Centro Sub-Regional B	Centro Sub-Regional A
BA	Barreiras	131.849	137.427	0,42	Capital Regional C	Capital Regional C
BA	Eunápolis	84.120	100.196	1,76	Centro Sub-Regional B	Capital Regional C
BA	Jequié	147.202	151.895	0,31	Centro Sub-Regional A	Centro Sub-Regional A
BA	Juazeiro <sup>7</sup>	174.567	197.965	1,27	Capital Regional C	Capital Regional C
BA	Ilhéus	222.127	184.236	-1,85	Capital Regional B	Capital Regional C
BA	Itabuna	196.675	204.667	0,40	Capital Regional B	Capital Regional B

UF	City	Pop. 2000	Pop. 2010	Pop. Growth rate (%)	Regic 2007	Regic 2018*
BA	Paulo Afonso	96.499	108.396	1,17	Centro Sub-Regional A	Centro Sub-Regional A
BA	Porto Seguro	95.721	126.929	2,86	Centro de Zona A	Centro Sub-Regional A
BA	Teixeira de Freitas	107.486	138.341	2,56	Centro Sub-Regional A	Centro Sub-Regional A
BA	Vitória da Conquista	262.494	306.866	1,57	Regional Capital B	Regional Capital B
<b>Intermediary City Populations</b>		<b>4.532.109</b>	<b>5.328.394</b>	<b>1,63</b>		
<b>Northeast</b>		<b>47.693.253</b>	<b>53.081.950</b>	<b>1,08</b>		
<b>Brazil</b>		<b>169.590.693</b>	<b>190.755.799</b>	<b>1,18</b>		

**Table 2. Total population, geometric annual population growth rate and functional classification – intermediary cities in the interior of the Brazilian Northeast**

Note: \*For the purposes of the classification of Regic 2018, the concept of Population Arrangement is considered.

<sup>1</sup>Population Arrangement of Imperatriz/MA: Imperatriz and Davinópolis.

<sup>2</sup>Population Arrangement of Teresina/PI: Teresina and Timon.

<sup>3</sup>Population Arrangement of Juazeiro do Norte/CE: Juazeiro do Norte, Crato and Barbalha.

<sup>4</sup>Population Arrangement of Sobral/CE: Sobral and Forquilha.

<sup>5</sup>Population Arrangement of Capina Grande/PB: Campina grande, Puxinaña, Queimadas and Massaranduba.

<sup>6</sup>Population Arrangement of Patos/PB: Patos and Quixabá.

<sup>7</sup>Population Arrangement of Petrolina/PE – Juazeiro/BA: Petrolina and Juazeiro.

Source: IBGE, Demographic Census 2000 and 2010; Regic 2018.

In 2007, there were three Zone A Centers, one Subregional Center A, two Subregional Centers B, two Regional Capitals B and three Regional Capitals C. This situation changed for two Subregional Centers A, two Subregional Centers B, three Regional Capitals B and four Regional Capitals B. Thus, amongst the 30 selected cities, between 2007 and 2018, there were no more Zone A Centers, according to the classification conducted by Regic. This signifies that there is a certain variability in the functional profile of these locations that may not be explained only by the size of the population, as previously mentioned. However, in a certain manner, at least for the selected cases, there is no great heterogeneity with regard to the typologies defined by Regic 2018. Ultimately, 7 of the 11 selected municipalities were classified as Regional Capitals in Regic 2018, thereby demonstrating a process of convergence in relation to the classification obtained in 2007.

With regard to the predominance of Bahia, it should be remembered that it is the most extensive and populous state in the Northeast region (a population of 14,016,906 in 2010), while Sergipe is the smallest state and has the lowest population (2,068,017 in 2010). Therefore, it would be important to place the quantitative dimension into perspective, as it would make no sense for Sergipe to adopt the same

population measure as the other states (100 thousand to 500 thousand) in order to classify intermediary cities. Besides, in Sergipe, according to the classification of Regic 2018, there is only one regional capital, precisely the population agglomeration of Aracaju, which, therefore, does not fit the selection criteria recommended herein: intermediary inland cities. The case of Lagarto (SE) approximates this list, since, with a population of 94.8 thousand in 2010, and classified as a Subregional Center B in Regic 2018, with a population estimate for 2018 of 103 thousand. However, since we are considering the migratory data from the 2010 Demographic Census, it was decided to fix the population volume of the same census so as to maintain the comparison.

Lagarto is the third largest city in Sergipe, occupying the same position as Campinas, with a population of 1.08 million, in relation to the state of São Paulo. When considering the characteristics and specificities of each state, it is possible that the role played by Lagarto in its area of influence is as relevant as that of Campinas in its region. Furthermore, it is likely that cities in the state of São Paulo with the same population size as Lagarto are not prominent or have the importance that the municipality of Sergipe has in its region. Thus, one essential step is to place the quantitative metric of population size into perspective, because this alone cannot define the concept of an intermediary city.

Dantas (2014) conducted an in-depth, detailed study on the municipality of Pau dos Ferros, in the state of Rio Grande do Norte, which, in 2010, recorded a population of 27,745, although, in the author's words, "[...] despite a small population, Pau dos Ferros, in the urban network of the Northeast and of [the state of] Rio Grande do Norte, has been performing the functions of an intermediary city, particularly in the provision of higher education and health services [...]" (DANTAS, 2014, p. 8). Indeed, its influence is expressed by the classification of Regic 2018, in which it is considered a Subregional Center B, equivalent, in our list, to Açailândia (MA), Codó (MA), Itapipoca (CE) and Vitória de Santo Antão (PE), all with a population of more than 100 thousand in 2010.

The 30 selected cities, together, amount to a population of 5.3 million, with an annual growth of 1.63%, exceeding both the national and regional averages. Amongst the cities under study, Petrolina (3.01% p.a.) stands out with the highest annual population growth rate, while Ilhéus (-1.85%) has the lowest. In Maranhão, two municipalities have also grown above the average of the country and of the Northeast. In Ceará, there were four; in Rio Grande do Norte, one; in Paraíba, none; in Pernambuco, two; in Alagoas, one, and Bahia stands out once again, with six.

The population growth of Petrolina is, in part, due to its expressive intraregional and intrastate migratory attractiveness (Tables 5 and 6). It is motivated by

the economic performance driven by irrigated fruit farming (PEREIRA, 2012) and by a broad, diversified service and trade sector (SOBEL; ORTEGA, 2007). In the area of health and education, Petrolina also influences a group of cities (PEREIRA, 2012); in addition, it has the Brazilian Agricultural Research Corporation (Embrapa), the São Francisco and Parnaíba Valleys Development Company (Codevasf), an airport and universities. From the 2000s onwards, its capacity to create formal jobs increased, since it received high investments from the Growth Acceleration Plan (PAC), and with the completion of important works, such as the Trans-northeastern Railway and the São Francisco River Diversion (ARAÚJO, 2017).

On the other hand, Ilhéus has gone through an opposite dynamic, with population and economic atrophy. Because its economy is dependent on cocoa, a major generator of jobs, with the crisis of the “witch’s broom” disease, or the crisis of the cocoa economy during the 1980s, the city has gone from being historically recognized for attracting international and national migrants to an expulsion area (SANTANA et al., 2014), as discussed in the following section, with a reflection on the rate of population growth (Table 2). This fact is also reflected in the Regic ranking, since Ilhéus dropped from a Regional Capital B in 2007 to a Regional Capital C in the 2018 review. Thus, it lost not only part of its demographic attractiveness, but also a significant part of its regional influence. Ilhéus lives with the expectation of completing the works of the West-East Integration Railway, which has a great potential for attracting new investments. However, a delay in the works, added to problems of environmental licensing, have acted as obstacles to reversing this trend of economic stagnation experienced in recent years.

## 2. Materials and methods

### 2.1 Spatial configuration and data source

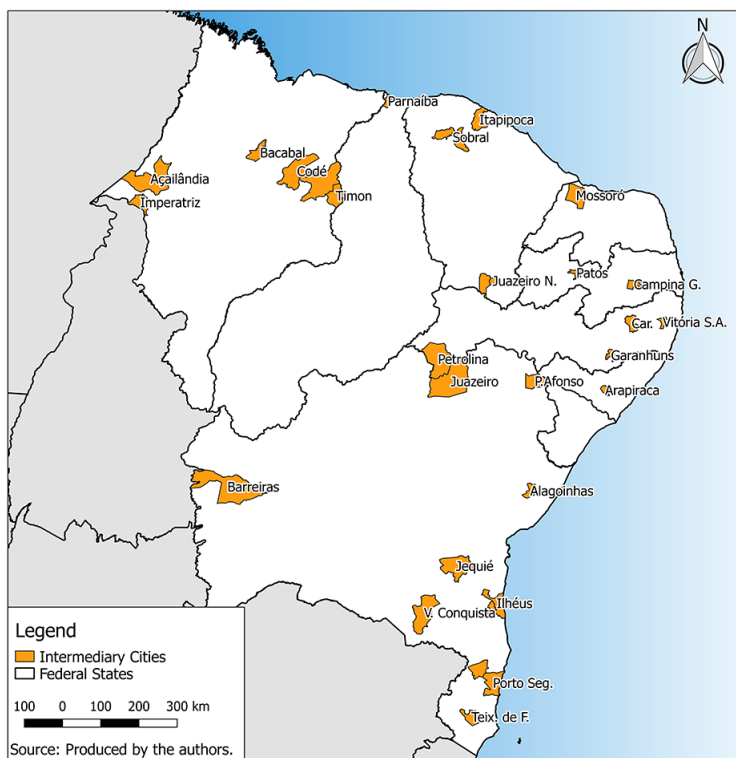
By adopting the IBGE definition, which classifies an intermediary city as having a population of between 100 thousand and 500 thousand, in 2010, 30 such cities were registered in the interior of the Brazilian Northeast (Map 1). The distribution amongst the states demonstrates that the state of Bahia is outstanding with 11 such cities, followed by Maranhão, with six. In turn, both Ceará and Pernambuco presented four; Paraíba, two; and Piauí, Rio Grande do Norte and Alagoas, all with one each. According to this same criterion, there is no intermediary city located in the interior of the state of Sergipe.

The migration flow has been defined based on three spatial configurations:

1. **Interregional (long distance)** – involving immigration and emigration between intermediary cities in the interior of the Northeast and cities (of all sizes) in the four main regions (North, Southeast, South and Midwest).

2. **Intraregional (medium distance)** – covering immigration and emigration between intermediary cities in the interior of the Northeast and cities (of all sizes) within the region itself (Northeast).
3. **Intrastate (short distance)** – encompassing immigration and emigration between intermediary cities in the interior of the Northeast and cities (of all sizes) within the state of which they are part.

In order to achieve the objectives proposed in this study, microdata from the 2010 Demographic Census, conducted by the IBGE, have been the main source of information.



**Map 1. Location of the intermediary cities in the interior of the Northeast**

Source: Produced by the authors, based on the IBGE digital meshes (IBGE, 2010).

## 2.2 Definitions adopted in the study

- **Interregional migrant** – an individual aged five or over who, on the reference date of the demographic census, lived in an intermediary city in the interior of the Northeast region, but who, on a fixed date (exactly five years before the census), had lived in another city in another major region.

- **Intraregional migrant** – an individual aged five or over who, on the reference date of the demographic census, lived in an intermediary city in the interior of the Northeast region, but who, on a fixed date (exactly five years before the census), had lived in another city in the same region (Northeast).
- **Intrastate migrant** – an individual aged five or over who, on the reference date of the demographic census, lived in an intermediary city in the interior of some state in the Northeast region, but who, on a fixed date (exactly five years before the census), had lived in another city in the same state.
- **Migration balance** – difference between the total number of immigrants and that of emigrants.
- **Intermediary city** – a municipality with a population of 100 thousand and 500 thousand.

### 2.3 Migration matrix

The interregional, intraregional and intrastate migratory matrix may be summarized as follows:

$$A = \begin{bmatrix} a_{11} & \cdots & a_{1j} \\ \vdots & \ddots & \vdots \\ a_{j1} & \cdots & a_{jj} \end{bmatrix} \quad (1)$$

$A_{ij}$  = migrant departure from area  $i$  to area  $j$ .

$\sum_{j=1}^n a_{ij}$  = Total of people emigrating (departing) from areas  $i$  to areas  $j$ .

$\sum_{j=1}^n a_{ji}$  = Total of people immigrating (arriving) from areas  $j$  to areas  $i$ .

$$a_{11} = a_{22} = a_{33} = \cdots = a_{jj} = 0$$

With the results of the matrix, it is possible to calculate the volume of immigrants, emigrants, migration balance, gross migration rate (GMR) and net migration rate (NMR).

The gross migration rate (GMR) represents all movements of entry (immigration) and departure (emigration) of migrants/people from a certain area. It is given by the sum of the total number of immigrants and that of emigrants (I + E).

$$GMR = I + E \quad (2)$$

Another indicator adopted is the NMR, which demonstrates the weight of migration (immigration and emigration) on the population stock of an area. NMR results from the ratio between the migration balance (MB) and the population observed at the end of the period (Pn).

$$NMR = \frac{SM}{Pn} * 100 \quad (3)$$

### 3. Results

#### 3.1 The relevance of intermediary cities in the interior of the Northeast in attracting migration

In order to achieve the main objective of this study, this section seeks to identify the relevance of intermediary cities in the interior of the Northeast in attracting migrants and, with this, their role in the spatial redistribution of the population and in reducing the growth of other areas, in addition to discussing the concept of intermediary cities, resulting from attracting or losing migrants in cities of this size, located in the interior of the Brazilian Northeast. Table 3 presents the migration volume of long (interregional), medium (intraregional) and short (intrastate) distances for the 30 cities, which make part of the scope of this work, in the interregnum 2005-2010.

Flow	Immigrants	Emigrants	Migration balance	Gross migration	Net Migration Rate		Net Migration Rate
					Absolute	(%)	
Interregional migration	81,465	160,898	-79,433	242,363	25.03	-1.49	-1,49
Intraregional migration	59,794	51,856	7,938	111,650	11.53	0.15	0,15
Intrastate migration	328,304	286,097	42,207	614,401	63.44	0.79	0,79

Table 3. Volume of interregional, intraregional and intrastate migration - intermediary cities in the interior of the Brazilian Northeast (2005-2010)

Source: IBGE, Demographic Census 2010.

Gross migration highlights the relevance of short-distance migration to intermediary cities in the interior of the Northeast, since the origins and destinations for the greatest circulation of immigrants and emigrants is intrastate. This demonstrates that people have increasingly “organized themselves” amongst the states, i.e., they practice more intrastate migration (63.44%) and less interregional (25.03%)



and intraregional (11.53). To a certain degree, we may perceive in these data that the intermediary cities play an important role within the context of the respective federal states, since they serve as intermediate population exchange centers on the scale of what we herein consider to be medium distances.

These cities present a negative migration balance with regard to interregional flow, and positive with regard to the intraregional and, especially, the intrastate flow. Thus, the traditional population decline towards regions outside the Northeast continue, offset by the short and medium distance migration. The NMR is proof of this result, since, if there had been no long-distance migration between 2005 and 2010, the population of the intermediary cities under analysis would have been 1.49% higher. However, the short and medium distance migration compensates for this decline, since, without the attractiveness of these two flows, the population growth of these cities would be 0.94% lower.

### *3.1.1 Destinations: the long-distance flow (interregional)*

In order to obtain detailed information on the routes or the attractive intermediary and population-expelling cities, Table 4 presents the long-distance migration (interregional), in which all cities demonstrate a decline, except for Mossoró (RN) and Caruaru (PE), whose migration balance is positive. It should be noted that these cities are not outstanding in terms of the number of interregional migrants (entry and departure), due to the low gross migration, when compared to that of most cities. However, they are retention areas, because the volume of immigrants exceeds that of emigrants, thereby providing a population gain.

Mossoró is the largest and only intermediary city located in the interior of the state of Rio Grande do Norte and, to some extent, its capacity to attract migrants is related to population size, but this indicator is insufficient to explain this fact. The manner in which the occupation process took place, as well as the settlement, geographical location, physical characteristics, formation and economic development, informs us of much more. In geographic terms, Mossoró is well located, practically equidistant from Natal (280 km) and Fortaleza (245 km), two Northeastern capitals. In addition to its privileged geographical position, it also possesses soil and physical characteristics that enable salt and oil extraction; it is also a reference point in Brazilian irrigated fruit farming, with melon production strongly boosting its economy (ROCHA, 2005) and attracting migrants from other regions, the Northeast and Rio Grande do Norte itself (Tables 4, 5 and 6). Regic 2007 and 2018 classified Mossoró as a Regional Capital C, with an important area of activity over the entire western portion of the state of Rio Grande do Norte.

State	City	Immigrants	Emigrants	Migration balance	Gross migration	Net Migration Rate
MA	Açailândia	3,154	6,614	-3,460	9,768	-3.33
MA	Bacabal	1,041	4,172	-3,131	5,213	-3.13
MA	Caxias	2,140	5,600	-3,460	7,740	-2.23
MA	Codó	1,220	6,865	-5,645	8,085	-4.78
MA	Imperatriz	7,599	18,772	-11,173	26,371	-4.51
MA	Timon	1,594	3,220	-1,626	4,814	-1.05
PI	Parnaíba	3,331	3,781	-450	7,112	-0.31
CE	Crato	1,554	2,585	-1,031	4,139	-0.85
CE	Itapipoca	688	1,041	-353	1,729	-0.30
CE	Juazeiro do Norte	2,898	4,160	-1,262	7,058	-0.50
CE	Sobral	1,037	2,357	-1,320	3,394	-0.70
RN	Mossoró	2,410	1,791	619	4,201	0.24
PB	Campina Grande	4,362	6,768	-2,406	11,130	-0.62
PB	Patos	1,415	1,625	-210	3,040	-0.21
PE	Caruaru	2,975	2,435	540	5,410	0.17
PE	Garanhuns	2,033	4,280	-2,247	6,313	-1.74
PE	Petrolina	3,092	4,584	-1,492	7,676	-0.51
PE	Vitória de S. Antão	1,136	1,733	-597	2,869	-0.46
AL	Arapiraca	2,260	5,870	-3,610	8,130	-1.69
BA	Alagoinhas	796	1,824	-1,028	2,620	-0.72
BA	Barreiras	3,825	5,910	-2,085	9,735	-1.52
BA	Eunápolis	3,334	4,046	-712	7,380	-0.71
BA	Ilhéus	3,957	10,738	-6,781	14,695	-3.68
BA	Itabuna	2,581	9,618	-7,037	12,199	-3.44
BA	Jequié	2,057	5,705	-3,648	7,762	-2.40
BA	Juazeiro	1,533	3,980	-2,447	5,513	-1.24
BA	Paulo Afonso	1,519	4,571	-3,052	6,090	-2.82
BA	Porto Seguro	4,167	7,839	-3,672	12,006	-2.89
BA	Teixeira de Freitas	5,832	7,153	-1,321	12,985	-0.95
BA	Vitória da Conquista	5,925	11,261	-5,336	17,186	-1.74
<b>Total</b>		<b>81,465</b>	<b>160,898</b>	<b>-79,433</b>	<b>242,363</b>	<b>-1.49</b>

**Table 4. Interregional migration from and to intermediary cities in the interior of the Brazilian Northeast (2005-2010)**

Source: IBGE, Demographic Census 2010.

Known as the capital of the *agreste region* in the state of Pernambuco, Caruaru is a reference for the economic representativeness in the state - it boasts the sixth

largest GDP - and is characterized as a dynamic center in the region into which it is inserted, with a strong network of surrounding hubs (SILVA; TORRES; ROCHA, p. 13, 2014). It is very well located, only 130 km from Recife and close to other Northeastern capitals (200 km from Maceió and 250 km from João Pessoa), and 150 km from Campina Grande (PB). The most prominent local industry is the textile sector, in addition to strong, diversified trade, which has become a reference throughout the Northeast due to the Caruaru Market, which sells imported products (Paraguay), articles from other states (São Paulo) and from the region itself (Cachoeirinha, Santa Cruz do Capibaribe, Toritama and Taquaritinga do Norte). Leather goods (shoes and handbags) are also sold, along with clothing, embroidery and lace, and clay handicrafts, amongst a diversity of other products, all with a high capacity for job creation, thereby attracting migrants, especially returnees (LYRA, 2003).

In terms of population decline, the negative migration balance of the inter-regional flow (-79,433) was brought on by the intermediary cities located in Bahia (46.73%) and Maranhão (35.87%), jointly responsible for around 83%. All the cities in Maranhão, with the exception of Timon, are outstanding in terms of the NMR. Codó, for example, presented the highest negative NMR, demonstrating that, proportionally, its resident population suffered the greatest decline due to migration. Hence, the intermediary cities of these two states maintained the traditional migratory currents towards the most distant regions of the country. Amongst the cities, Imperatriz presented the highest negative balance (-11,173) and, alone, exceeded the decline from the cities of three states (Ceará, Paraíba and Pernambuco).

Imperatriz is well located and is crossed by the Belém-Brasília federal highway, the construction of which, in the late 1950s, attracted migrants from within the state itself and from different parts of the country, particularly the Northeast, due to the available vacant land suitable for planting rice (1950s) and other activities, such as logging (1970s) and the gold cycle (1980s) (LIMA JÚNIOR et al., 2014). In recent years, however, Imperatriz has experienced a process of population decline due to the development of other regions, the deactivation of mining operations, which stimulated return migration, and the dismemberment of nine municipalities throughout its history (CARVALHO, 2016).

This result is ratified by Table 2, which demonstrates that the annual growth rate of the population of Imperatriz was below the average of the cities under study, and even below the average for Brazil and the Northeast. In turn, the gross migration rate reveals that Imperatriz is the busiest city amongst the 30 under analysis, where more long-distance migrants circulate, even though the volume of departures exceeds that of entries. Thus, its NMR informs us that, had there been no such decline, the population would be 4.51% higher.

### *3.1.2 Destinations: the medium-distance flow (intraregional)*

Amongst the three types of flows under study, intraregional (in the Northeast), or medium-distance migration, involves fewer people, with a predilection for long-distance and especially short-distance movement (Table 3). Between 2005 and 2010, the volume of people who immigrated and emigrated in the Northeast, to and from the 30 intermediary cities in the interior of the region, was 116,650 (Table 5), which is equivalent to 11.53% of the total movement that occurred within them (Table 3).

However, unlike the interregional flow (long distance), the cities under study are more attractive, with medium-distance migration (between cities in the Northeast). On a state level, the most prominent were Timon (MA), Parnaíba (PI), Crato (CE), Mossoró (RN), Petrolina (PE) and Juazeiro (BA). However, in the Northeast, from amongst these cities, Petrolina is the reference, where more migrants are in circulation (17,563), who, at the same time, the city manages to maintain, which explains its greater attractiveness (4,297). Proportionally, it is in relation to its resident population that migration offers the greatest contribution over its total population (1.46%).

Petrolina, located in the sub-medium region of the São Francisco Valley, since the 1970s, with the II PND and other federal and state government plans that followed it, has received significant public investments, initially focused on irrigated agriculture, with impacts in economic and social terms on the agricultural and urban areas. The region's soil and climate are conducive to fruit farming, but the low level of rainfall is a limiting factor, remedied by the waters of the São Francisco River. These elements were responsible for inducing private investments and attracted the manufacturing industry, which has boosted trade and services, generating employment and income not only in rural areas, but also in urban areas (SOBEL; ORTEGA, 2007; PEREIRA, 2012), thereby helping it to become a destination for migrants from within the region itself (Table 5).

It should be stressed that Mossoró (RN) once again gains prominence, as it presents the second largest positive migration balance in the medium-distance flow (Table 5) and the largest in long-distance migration, as presented in Table 4. Its soil/physical characteristics (mineral extraction - oil and sea salt, as well as tropical fruit production), geographical position (beaches and its relative proximity to Natal and Fortaleza), good positioning in economic and demographic indicators (high HDI-M, the third in Rio Grande do Norte), good infrastructure, with an airport, important highways, public universities (Universidade do Estado do Rio Grande do Norte (Uern) and Universidade Federal Rural do Semi-Árido (Ufersa)) and private

(Instituto Federal do Rio Grande do Norte - IFRN), have a positive effect in terms of job creation and the importance of attracting long and medium-distance migrants.

State	City	Immigrants	Emigrants	Migration balance	Gross migration	Net migration rate
MA	Açailândia	657	347	310	1,004	0.30
MA	Bacabal	470	577	-107	1,047	-0.11
MA	Caxias	1,146	1,335	-189	2,481	-0.12
MA	Codó	385	747	-362	1,132	-0.31
MA	Imperatriz	1,375	1,435	-60	2,810	-0.02
MA	Timon	3,970	2,240	1,730	6,210	1.11
PI	Parnaíba	2,868	2,688	180	5,556	0.12
CE	Crato	2,024	1,341	683	3,365	0.56
CE	Itapipoca	69	71	-2	140	0.00
CE	Juazeiro do Norte	3,856	3,162	694	7,018	0.28
CE	Sobral	385	613	-228	998	-0.12
RN	Mossoró	4,888	2,216	2,672	7,104	1.03
PB	Campina Grande	4,786	5,097	-311	9,883	-0.08
PB	Patos	1,310	1,709	-399	3,019	-0.40
PE	Caruaru	2,937	2,849	88	5,786	0.03
PE	Garanhuns	1,354	2,206	-852	3,560	-0.66
PE	Petrolina	10,930	6,633	4,297	17,563	1.46
PE	Vitória de S. Antão	352	457	-105	809	-0.08
AL	Arapiraca	2,285	2,672	-387	4,957	-0.18
BA	Alagoinhas	641	1,063	-422	1,704	-0.30
BA	Barreiras	884	576	308	1,460	0.22
BA	Eunápolis	263	209	54	472	0.05
BA	Ilhéus	321	695	-374	1,016	-0.20
BA	Itabuna	393	800	-407	1,193	-0.20
BA	Jequié	304	290	14	594	0.01
BA	Juazeiro	5,455	4,748	707	10,203	0.36
BA	Paulo Afonso	4,355	4,051	304	8,406	0.28
BA	Porto Seguro	249	223	26	472	0.02
BA	Teixeira de Freitas	285	284	1	569	0.00
BA	Vitória da Conquista	597	522	75	1,119	0.02
<b>Total</b>		<b>59,794</b>	<b>51,856</b>	<b>7,938</b>	<b>111,650</b>	<b>0,15</b>

**Table 5. Intraregional migration from and to the intermediary cities in the interior of the Northeast (2005-2010)**

Source: IBGE, Demographic Census 2010.

State	City	Immigrants	Emigrants	Migration balance	Gross migration	Net migration rate
MA	Açailândia	7,479	7,388	91	14,867	0.87
MA	Bacabal	4,859	6,703	-1,844	11,562	-1.84
MA	Caxias	6,294	6,961	-667	13,255	-0.43
MA	Codó	4,540	4,675	-135	9,215	-0.11
MA	Imperatriz	14,767	15,550	-783	30,317	-0.32
MA	Timon	4,306	3,773	533	8,079	0.34
PI	Parnaíba	6,019	5,279	740	11,298	0.51
CE	Crato	6,497	5,128	1,369	11,625	1.13
CE	Itapipoca	6,374	6,496	-122	12,870	-0.11
CE	Juazeiro do Norte	13,711	11,254	2,457	24,965	0.98
CE	Sobral	12,035	9,341	2,694	21,376	1.43
RN	Mossoró	14,455	12,165	2,290	26,620	0.88
PB	Campina Grande	14,017	17,314	-3,297	31,331	-0.86
PB	Patos	6,209	6,067	142	12,276	0.14
PE	Caruaru	25,437	14,438	10,999	39,875	3.49
PE	Garanhuns	8637	7,965	672	16,602	0.52
PE	Petrolina	22,589	14,526	8,063	37,115	2.74
PE	Vitória de S. Antão	7,020	7,298	-278	14,318	-0.21
AL	Arapiraca	12,723	10,245	2,478	22,968	1.16
BA	Alagoinhas	7,717	10,061	-2,344	17,778	-1.65
BA	Barreiras	11,381	9,264	2,117	20,645	1.54
BA	Eunápolis	10,504	8,955	1,549	19,459	1.55
BA	Ilhéus	13,863	14,025	-162	27,888	-0.09
BA	Itabuna	14,735	15,924	-1189	30,659	-0.58
BA	Jequié	8,701	8,469	232	17,170	0.15
BA	Juazeiro	10,445	8,427	2,018	18,872	1.02
BA	Paulo Afonso	4,717	4,579	138	9,296	0.13
BA	Porto Seguro	15,889	10,640	5,249	26,529	4.14
BA	Teixeira de Freitas	13,148	8,373	4,775	21,521	3.45
BA	Vitória da Conquista	19,236	14,814	4,422	34,050	1.44
<b>Total</b>		<b>328,304</b>	<b>286,097</b>	<b>42,207</b>	<b>614,401</b>	<b>0.79</b>

**Table 6. Intrastate migration to and from the intermediary cities of the interior of the Brazilian Northeast (2005-2010)**

Source: IBGE, Demographic Census 2010.

Contrary to intraregional attractiveness, the two intermediary cities in Paraíba (Campina Grande and Patos) and the only one of this size in Alagoas (Arapiraca) have all experienced population decline, without causing any relevance nor

constituting a housing reference for those who migrate in the Northeast. (Table 5). In the long-distance flow (Table 4), these same cities are characterized by migrant decline; Campina Grande has also demonstrated a negative balance in the intrastate flow (Table 6). Therefore, it is not only population size or being classified as an intermediary city that makes it attractive. The size of the population of the city may not be sufficient to receive this classification, but, if it exercises this role in the region into which it is inserted, this should be taken into account, as indicated by Dantas (2014) in relation to Pau dos Ferros in Rio Grande do Norte.

The lack of attractiveness for migration in Campina Grande draws particular attention because, of the 30 cities under study, it is the most populous, although it presents a population growth rate well below the average of the cities under analysis, in relation to Brazil and the Northeast (Table 2). Furthermore, despite being second in Paraíba in terms of participation in the economy, population and job creation (MENDES et al., 2012), being well located (close to the capital, João Pessoa, 130 km; to Caruaru, 149 km; and to Recife, 260 km), with an airport, and both public universities (Universidade Federal Campus Campina Grande (UFCG) and Universidade Estadual da Paraíba (UEPB)) and private, as well as a developed commercial and urban center, with influence across the region, it is not a destination reference for migrants in the three spatial areas covered, and is characterized as an area of expulsion, despite having its own particular characteristics and indicators for population attraction.

It would seem that, because it is close to certain capital cities (João Pessoa and Recife) and to another important city (Caruaru/PE), Campina Grande has no prominence for being attractive to the population in the interior of the Northeast. It does not attract migrants. The classic decline still remain however, albeit in a smaller volume, and the historical vestiges of being the “land of migration” remains (TARGINO, 1978), thereby deserving further research. The same occurs with the analysis based on Regic, because between 2007 and 2018, the population arrangement of Campina Grande (formed by Campina Grande and four other surrounding municipalities), formerly a Regional Capital B, moved over to a C.

### *3.1.3 Destinations: the short-distance flow (intrastate)*

Short-distance flows have gained notoriety since the 1980s, when long-distance migration originating hugely from the Northeast and Minas Gerais to the Southeast became less intense (BRITO, 1999). This trend continued throughout the 1990s and 2000s, and concomitantly, there was an increase in the volume of short-distance and/or intrastate migration (DOTA; QUEIROZ, 2018).



Table 6 confirms this dynamic for most of the intermediary cities in the interior of the Northeast, given that they are marked by an intense volume of people (614,401 or 63.44% of the flow) and their retention (42,207), constituting a reference or destination for short-distance migrants who “decided” to migrate within the state itself, specifically to intermediary cities, and therefore not undertake long-distance migration. This was a typical movement of the 1950s, 1960s and 1970s, which, although still relevant, became less intense after the 1980s (CUNHA; BAENINGER, 2001).

In terms of cities, Caruaru and Petrolina, both in the state of Pernambuco, display the highest positive balances, the results of which have already been justified due to the performance of Caruaru in the interregional flow and Petrolina in the intraregional flow. Furthermore, according to a study by Julião, Rocha and Silva (2018), “[...] the municipalities of Caruaru, in the agreste mesoregion, and Petrolina, in the São Francisco mesoregion, in the interior of the state of Pernambuco, are those that most employ formal workers [migrants and non-migrants]”.

Table 6 also demonstrates, however, that most states present influential, dynamic and attractive cities for migrants, which, to some extent, diminishes population concentration in the metropolitan regions and decentralizes it to the interior. In Maranhão, this is the case of Açailândia and Timon; in Piauí, Parnaíba; in Ceará, Sobral, Juazeiro do Norte and Crato; in Paraíba, Patos; in Alagoas, Arapiraca; in Bahia, Barreiras, Eunápolis, Jequié, Juazeiro, Paulo Afonso, Porto Seguro, Teixeira de Freitas and Vitória da Conquista.

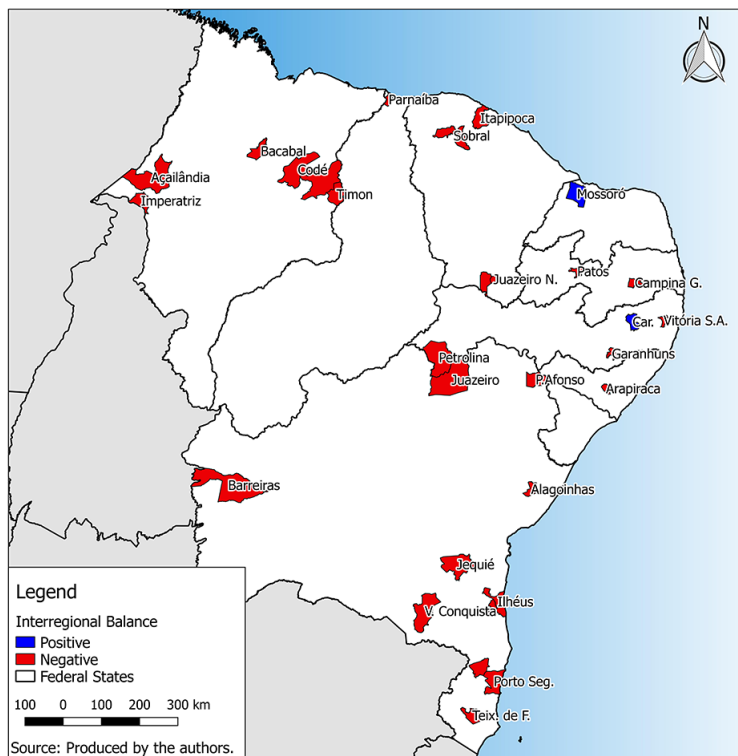
The literature indicates that these cities, for the most part, have always been references in their respective states by creating hub municipalities in their surroundings and, in some cases, when they have extrapolated the state limit, through the development of trade and a diversified service sector (CORRÊA, 1995; OLIVEIRA et al., 2005; 2007; IBGE, 2008). However, the major impetus has been recent, beginning in the 2000s, with investments from the federal, state and private sectors that leveraged the intermediary inland cities of the Northeast (PEREIRA; MORAES; OLIVEIRA, 2017). Airports, new highways, railways, educational institutions, regional hospitals, shopping malls, real estate projects of various sizes, combined with a better quality of life, a lower cost of living and opportunities for work, study, health and leisure, have attracted migrants to intermediary cities inside the state itself.

### *3.1.4 The main cities of origin and destination*

The sum of the migration balance of the three types of flows (interregional, intraregional and intrastate) demonstrates that the main destination cities, or the most attractive, are in the states of Pernambuco (Caruaru and Petrolina) and Rio

Grande do Norte (Mossoró). In turn, the cities of origin, or those with the greatest population decline, are in Maranhão (Imperatriz) and Bahia (Itabuna and Ilhéus).

However, there are specificities, such as the fact that only Caruaru (PE) and Mossoró (RN) appear with a positive migration balance in the three flow modalities (Maps 2, 3 and 4). At the other end, there are 10 cities with a negative balance in the three types of flows (Maps 2, 3 and 4): in Maranhão (Bacabal, Caxias, Codó and Imperatriz), in Ceará (Itapipoca), in Paraíba (Campina Grande), in Pernambuco (Vitória de Santo Antão) and in Bahia (Alagoinhas, Ilhéus and Itabuna). Therefore, it is neither sufficient to be classified as an intermediary city according to the criterion of population size and nor, on the other hand, to be a reference and/or hub of attraction in the region into which it is inserted. The words of Pereira, Moraes and Oliveira (2017, p. 14) corroborate this statement discussed throughout the work: “The importance of intermediary cities within the Brazilian scenario is due more to their geographical situation than to their demographic size”.

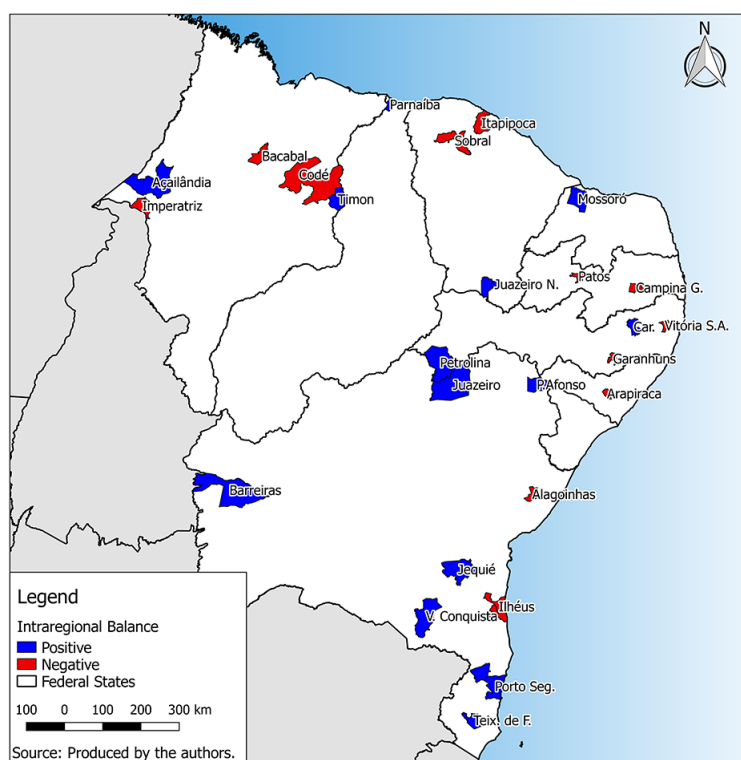


Map 2. The positive or negative interregional (long distance) migration balance – intermediary inland cities in the Brazilian Northeast (2005-2010)

Source: Produced by the authors, based on the IBGE digital meshes (IBGE, 2010).

Despite the decline in the long-distance flow, 16 cities in the intraregional flow (Map 3) and 20 in the intrastate flow (Map 4) present a positive migration

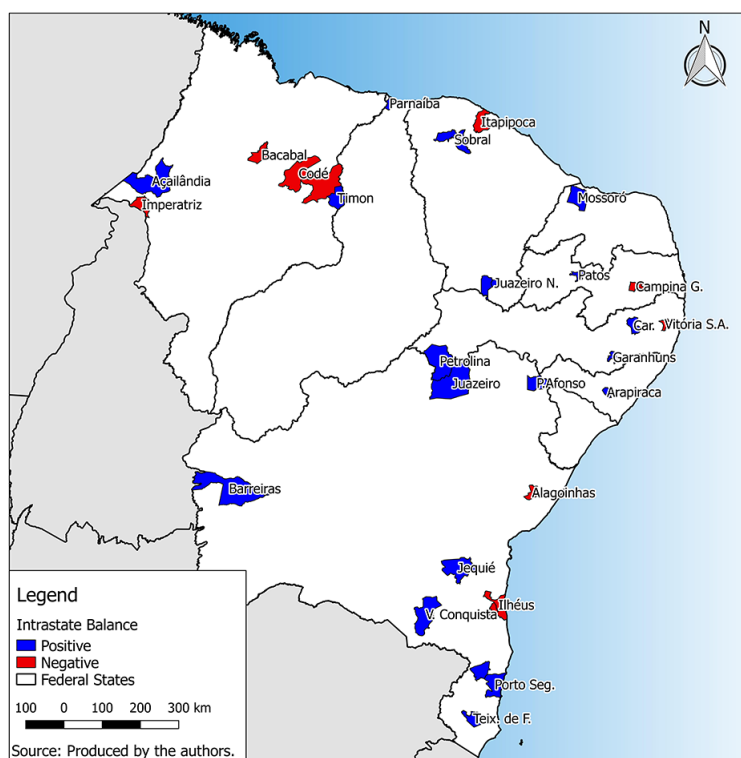
balance, which demonstrates the relevance of the place into which they are inserted. In addition, 14 presented a positive balance in two flows (intra-regional and intrastate), namely: Açailândia (MA), Timon (MA), Parnaíba (PI), Crato (CE), Juazeiro do Norte (CE), Petrolina (PE), Barreiras (BA), Eunápolis (BA), Jequié (BA), Juazeiro (BA), Paulo Afonso (BA), Porto Seguro (BA), Teixeira de Freitas (BA) and Vitória da Conquista (BA).



Map 3. The positive or negative intraregional (medium distance) migration balance - intermediary inland cities in the Brazilian Northeast (2005-2010)

Source: Produced by the authors, based on the IBGE digital meshes (IBGE, 2010).

One interesting data observed in Maps 2, 3 and 4, and also as a result of the bibliographic review, is that, of the 30 intermediary cities in the interior of the Northeast, 11 are borderline: Crato is limited to Juazeiro do Norte in Ceará; Petrolina and Juazeiro border the states of Pernambuco and Bahia, separated by the São Francisco River and a bridge; Caxias and Timon in Maranhão; Caxias with Codó in Maranhão; Ilhéus and Itabuna in Bahia; Porto Seguro and Eunápolis also in Bahia, forming six conurbated areas. With regard to migration, nine conurbated cities present a positive balance in intraregional and intrastate flows, except for the Caxias-Codó conurbation, with a negative balance in the three studied flows.



Map 4. The positive or negative intrastate (short distance) migration balance – intermediary inland cities in the Brazilian Northeast (2005-2010)

Source: Produced by the authors, based on the IBGE digital meshes (IBGE, 2010).

Given this situation, it is important that each city council produces a master plan and understands it. Equally relevant is having an agenda with common objectives, so that they may become linked in order to maximize public resources, attract companies, create jobs, open universities, hospitals, invest in public transport and urban mobility. With more effective integration, it would be possible to improve the lives of the local population and those who have migrated and decided to live in these (conurbated) cities and in the others that also integrate the interior of the Northeast.

#### Final considerations

In Brazil, from the 1980s, with the results of the 1991 Demographic Census, the literature reveals an intense, rapid growth in the number of cities classified as intermediary. The change was due to the location: not only in the capitals and along the coast, but in distant areas, in the interior of countless states, including in the interior of the Northeast region, which, in 2010, presented 30 cities with populations of between 100 thousand and 500 thousand.

In view of this scenario, the main objective of the present study was to analyze the interregional (long distance), intraregional (medium distance) and intrastate (short distance) migrations to and from the intermediary cities in the interior of the Brazilian Northeast. The aim was also to discover which cities gain or lose migrants, i.e., to verify their relevance in relation to their attractiveness to the population, in addition to continuing the discussion on the concept of intermediary cities, in light of the migrant attractiveness in cities of this size located in the interior of the Brazilian Northeast.

The bibliographic review and the data exposed throughout the work have enabled us to conclude that the population dimension is insufficient to define an intermediary city in a country containing such distinct realities in a diversity of aspects. Therefore, in urban and regional planning, it is necessary to take into account elements such as urban and physical geography, regional and urban economics and urban sociology in order to provide a sense to the concept of the intermediary city, whether in metropolitan areas, in the metropolitan environment, or in the interior of the federal states. Thus, and based on the results discussed throughout this work, it is considered that the inclusion of criteria related to the attractiveness of migration in the discussion on the concept of intermediary cities may provide an advance on this issue. The survey Areas of Influence of Cities (IBGE, 2020) encompasses an extensive set of variables in order to compose an important relational framework so as to understand these dynamics of complementary integration, and serves as a good comparison parameter to qualify the population size.

Initially, there was an increase in the number of intermediary cities in the interior of the Northeast, which began to concentrate an increasingly growing population. This trend was due to the spatial redistribution of economic activity across the country, to the saturation of large centers, to an increase in these spaces/land and labor, in conjunction with an interiorization of public and private investments (education, health, housing and infrastructure), an improved quality of life and a lower cost of living.

With regard to the flows, in summary, the results have revealed two major directions in migration from and to the intermediary cities in the interior of the Brazilian Northeast: i) on the one hand, they indicate that the historic or traditional population declines have been maintained, when there is a long-distance (interregional) flow, which goes beyond the geographical limit of the Northeast, with the exception of Mossoró (RN) and Caruaru (PE); and ii) on the other, they demonstrate a population gain for more than half of the cities when there is a medium-distance (intraregional) flow and a short-distance (intrastate) flow, within the regional

and most notably state limits, which demonstrates the relevance of these cities in offsetting the population concentration in large urban centers and their role in redistributing it across the interior of the Northeast.

However, it is necessary to undertake a more micro, specific and detailed examination of the specificities surrounding these cities. Thus, Caruaru (PE), Petrolina (PE) and Mossoró (RN) are the main directions/destinations and references in attracting migrants in the interior of the Northeast. In turn, prominent cities, such as Imperatriz (MA), Itabuna (BA) and Ilhéus (BA) (conurbation), are examples of spaces that suffer population decline. However, the vast majority emerge as being relevant in attracting and maintaining migrants (Teixeira de Freitas and Porto Seguro in Bahia; Juazeiro do Norte-Crato (conurbation) and Sobral in Ceará, amongst others), confirming the importance of the population's interiorization process. Such cities, in general, are dynamic and influential within their spaces, concentrating broad, diversified trade and service sectors, as well as opportunities for work and study, good infrastructure and leisure areas. They stand as reference points across their states, by creating hub municipalities in their surroundings and, in some cases, by extrapolating the state limit.

Thus, we are facing new and old trends in northeastern migrations, in which the role of intermediary cities in the interior of each state in attracting migrants based on short and medium-distance flows, which counterbalance the decline in the long-distance flow, which gradually becomes offset. Therefore, there are two forces at the same time, one of attraction, that gains relevance, and another of expulsion that, little by little, grows weaker. Hence, the analysis undertaken by this study has enabled something new to be identified in terms of population dynamics in the region. First, until the 1980s, it was only the force of expulsion that prevailed, characterizing the Northeast as a "land of migration". However, in the first decade of the twenty-first century, the intensity of this force decreased, with intermediary cities playing the role of catalysts and expanding spaces for Brazilian migration throughout the interior of the Northeast.

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