



FACULDADE DE
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Brazilian migration patterns: recent trends and the importance of urban-regional development

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1 – Introduction

- Motivation: it is necessary to analyze the main characteristics of Brazilian migration flows in a broader perspective of development.
- It is important to understand how migration flows are perpetuated and their effects on regional development (at origin and destination areas).
- Simultaneously, it is important to analyze how regional development affects migration patterns.



2 – Objectives

- (i) To identify recent trends of internal migration in Brazil.
- (ii) To evaluate the influence of urban contexts to determine individual migration condition.
- More specifically, the paper seeks to determine if a new migration pattern is emerging due to socioeconomic changes occurred in Brazil between 1980 and 2010.



Migration patterns (BRITO, 2002)

- Migration flows are an integrant part of socioeconomic development process and they have a regular behaviour.
- Migration trajectories have links with historical contexts to facilitate economic, demographic and social demands. These flows compose a migration pattern.
- This migration pattern is dynamic: it affects and is affected by regional contexts. Because of that, migration patterns may contribute to perpetuate the unequal nature of development process.



3 – Database and methodology

- Data from Brazilian Demographic Censuses provided by IBGE.
- Period of analysis: 1980 to 2010.
- First strategy: regional migration matrices of short (intrastate) and long (interstate) distance are built to analyze internal displacements in Brazil.



3 – Database and methodology

- Second strategy: logistic models are estimated to identify the main determinants of individual migration condition in two perspectives:
 - (a) origin area of potential migrants (individual residence at fixed date).
 - (b) destiny area of potential migrants (individual residence at census date).



3 – Database and methodology

- Methodological adjustments to allow database compatibility:
- The number of municipalities in Brazil has increased between 1980 and 2010: comparisons over time become inconsistent without spatial adjustments.
 - Minimal Comparable areas (MCAs) (Reis et al, 2011): sum of municipalities areas that composed one locality in 1980.
 - These MCAs are aggregated according to microregional criteria defined by IBGE: 413 regional comparable areas (RCAs) are defined.
 - RCAs: units of spatial analysis.



3 – Database and methodology

- There are two criteria to define migration condition (RIGOTTI, 1999):
 - Last stage *versus* fixed date
- These criteria are not equivalent.
- To avoid misinterpretation: it is constructed a proxy variable to “fixed date” criterion to 1980, compatible with “fixed date” criterion of later census years.



3 – Database and methodology

- Characteristics of the sample:
 - Internal migration.
 - White individuals and black/brown individuals.
 - Permanent households with a head individual.
 - Individuals aged between 25 and 64 years.
 - Income values updated to 2010: INPC.



Table 01 – Sample distribution by year

Year	Frequency	Proportion (%)	Cumulative (%)	(%) of demographic census
1980	8,088,455	28.09	28.09	27.53
1991	5,582,196	19.39	47.48	32.75
2000	6,745,692	23.43	70.92	33.27
2010	8,373,332	29.08	100.00	40.58
Total	28,789,675	100.0	-	32.97

Source: elaborated by the authors from demographic censuses 1980 to 2010.



OBS: Migration typology

- **Non migrants:** individuals who were born and always lived in the locality of census or individuals who live at least for 05 years in this locality.
- **Migrants:** individuals who live less than 05 years in the locality of census even if they were born in this locality.
- Migrants are classified in two categories:
 - **Intrastate migrants (short distance):** individuals who have moved between RCAs of a specific state of Brazil
 - **Interstate migrants (long distance):** individuals who have moved between Brazilian states.
- **Return migration:** displacements to the locality of birth.



Table 02 – Sample composition by group (Brazil, 1980-2010)

Year	Non-migrants	Interstate migrants	Intrastate migrants	Return migrants	
				Interstate	Intrastate
1980	7,343,269	335,435	409,751	64.800	24.610
1991	5,227,553	175,930	178,713	49.051	20.248
2000	6,333,793	200,082	211,817	56.270	21.225
2010	7,975,735	192,964	204,633	54.808	24.442
Total	26,880,350	904,411	1,004,914	224,929	90,525

Source: elaborated by the authors from demographic censuses 1980 to 2010.



4 – Regional dynamics

- To analyze Brazilian regional dynamic between 1980 and 2010: principal components analysis (PCA).
- Two indexes are created using several socioeconomic variables (e.g. Regional income level, average schooling, degree of industrialization, skilled labor, etc.):
 - Index of local level of socioeconomic development and attractiveness.
 - Industrial relevance index.
- Using these indexes: it is possible to classify Brazilian RCAs to analyze changes in regional contexts.

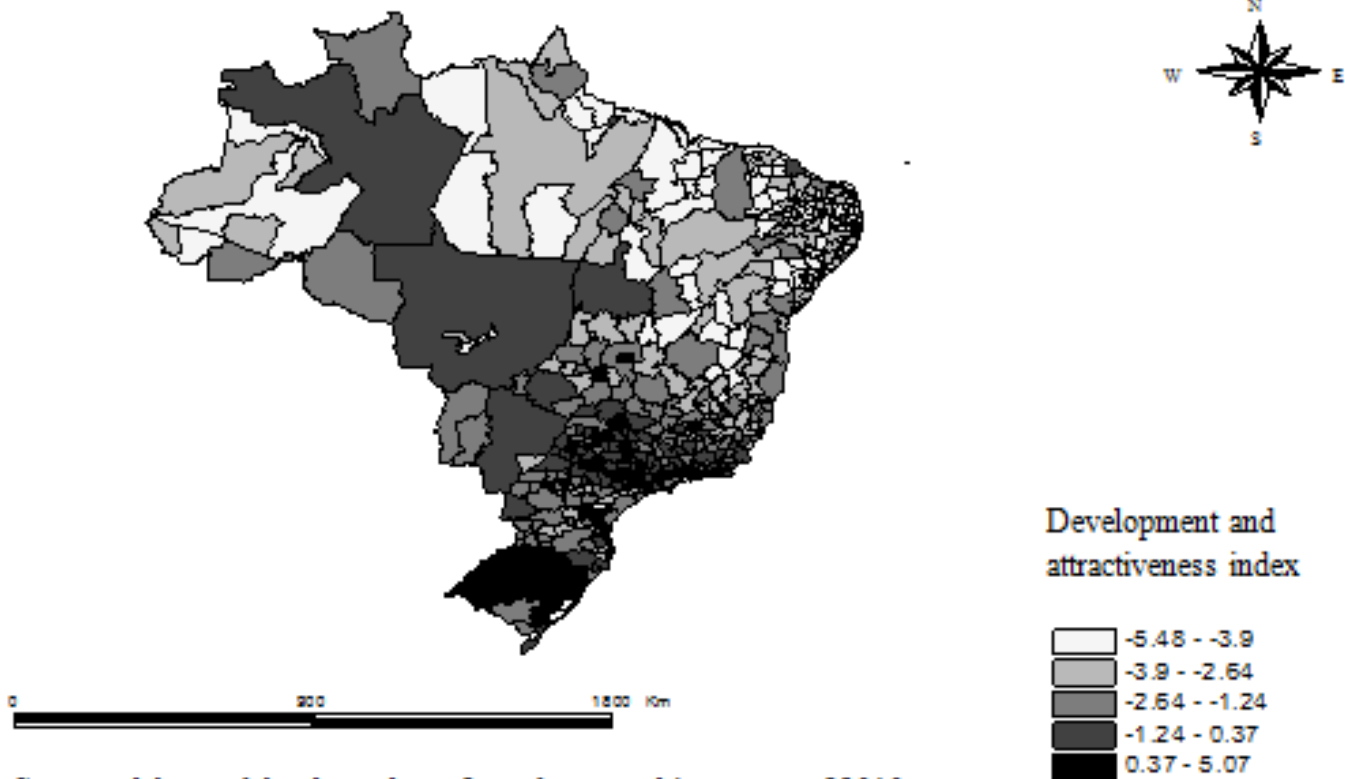


4 – Regional dynamics

- The evolution of this regional classification corroborates the hypothesis of limited decentralization of economic activities in Brazil in recent years (Diniz, 1993).
- Data shows that Brazil has expressive regional disparities, despite the improvements in the last 30 years.
- Macro versus micro disparities.



Figure 01 – Development and attractiveness index by regional comparable area (Brazil, 2010)



Source: elaborated by the authors from demographic census of 2010.

5 – Internal migration



Table 03 – Proportion of migrants (Brazil, 1980-2010)

year	Interstate migrants (a)	Intrastate migrants (b)	Migrants (a+b)	Return migrants	
				Interstate	Intrastate
1980	4.2%	5.0%	9.2%	0.8%	0.3%
1991	3.2%	3.2%	6.4%	0.9%	0.3%
2000	3.0%	3.1%	6.1%	0.8%	0.3%
2010	2.3%	2.2%	4.6%	0.6%	0.3%

Source: elaborated by the authors from demographic censuses 1980 to 2010.

- The proportion of migrants decreased in this period (from 9.2% to 4.6%).



5 – Internal migration

Table 04 – Proportion of migrants by type of displacement (Brazil, 1980-2010)

year	Interstate migrants (a)	Intrastate migrants (b)	Migrants (a+b)	Return migrants	
				Interstate	Intrastate
1980	45.3%	54.7%	100.0%	8.7%	3.3%
1991	50.2%	49.8%	100.0%	13.7%	5.4%
2000	49.4%	50.6%	100.0%	13.1%	4.7%
2010	51.4%	48.6%	100.0%	13.1%	5.7%

Source: elaborated by the authors from demographic censuses 1980 to 2010.

- There are two tendencies:
 - (i) an increase of interstate migration flows, probably stimulated by the reduction of transports costs; and
 - (ii) an increase of return migration, probably stimulated by socioeconomic improvements in regions of origin of migrants or by decreases in employment and income opportunities in regions of destination.



5 – Internal migration

- Migration matrices: flows observed indicate the main regions of origin and destiny of internal displacements in Brazil.
- It is expected to identify possible changes in migration patterns in Brazil in recent years.

(i) Internal migration between 1970 and 1980



- Data from demographic census of 1980 reflect migration flows stimulated by socioeconomic transformations occurred in Brazil during the 1970's.
- Dominant migration trajectory: from Northeast states and Minas Gerais to São Paulo and Rio de Janeiro.
- Secondary migration trajectories: limited to regional contexts.
- Return migration: inexpressive.



(ii) Internal migration between 1980 and 1991

- Data from demographic census of 1991 demonstrate:
 - An increase of secondary migration trajectories;
 - An increase of return migration, especially to less developed RCAs; and
 - The persistence of dominant migration pattern: from Northeast to Southeast.
- It is important to highlight the emergence of new regions of migration attraction:
 - North region;
 - Midwest; and
 - Hinterland of São Paulo.



(iii) Internal migration between 1991 and 2000

- Intensification of migration trends observed in the previous period.
- But it is important to highlight that Brazilian dominant migration pattern has a inertial component.
- This component is stimulated by:
 - Persistence of expressive regional disparities; and
 - Networks between migrants and non migrants at origin and destination areas.
- Data shows that brazilian internal displacements tend to a period of migration transition.
 - Importance of medium sized cities.
 - Less developed regions: decrease of negative net migration.



(iv) Internal migration between 2000 and 2010

- Medium sizes cities consolidate their strategic position to development.
- Brazilian economic trends in this decade generated several impacts to migration flows:
 - High growth rates of less developed regions: are a factor of population retention and can stimulate migration counterflows.
 - Simultaneously, economic recovery in the most developed regions of the country (south-central) can stimulate the attraction of individuals and, consequently, the intensification of dominant migration pattern.

(iv) Internal migration between 2000 and 2010



- These changes in Brazilian migration flows point out to a period of migration transition, which gradually seeks to decrease the relative importance of the displacements from Northeast to Southeast.
- However, the rate of expansion of this migration transitions is slow.
- The interactions between migration and development and the persistence of expressive regional disparities in Brazil tend to reinforce the inertial characteristic of its dominant migration pattern. Consequently, these factors attenuate changes in secondary flows.

6 – Urban-Regional context and migration



- Logistic models to estimate the probability of individual migration at:
 - Origin region (fixed date).
 - Destiny region (census date).
- The aim is to identify the main determinants of migration condition, including urban-regional aspects.
- The results obtained show that:



6 – Urban-Regional context and migration

- Migration is selective: specific individuals have a higher probability to migrate:
 - Men
 - White individuals
 - Individuals who have a stable marital relationship.
 - Young people
 - Individuals with higher formal education.



6 – Urban-Regional context and migration

- Urban-regional aspects (centrality and urban-development levels): the results emphasize migration changes occurred between 1980 and 2010.
 - Until the first half of the 1990's: retention factors in origin areas and attraction factors in destiny areas.
 - Post-1995: reversal of these factors.
- Probable reasons:
 - Congestion costs in larger urban areas;
 - Diseconomies of agglomeration;
 - Non-economic factors;
 - Aspirations and individual capability to migrate and their interactions with the local level of development.



7 – Final remarks

- The analysis of migration matrices demonstrate changes in population displacements in Brazil between 1980 and 2010.
- These changes indicate that Brazil tends to a period of migration transition:
 - The dominant migration pattern (from Northeast to Southeast) has been gradually replaced by secondary flows oriented specially to RCAs polarized by medium sized cities.
- However, this migration transition has a slow expansion rate due to the persistence of expressive regional disparities.

Table 08 – Odds ratio of logistic models to individual migration condition by centrality level (Brazil, 1980-2010)

	Origin (fixed date)				Destination (census date)			
	1980	1991	2000	2010	1980	1991	2000	2010
sex	1.103*** (0.005)	1.098*** (0.005)	1.083*** (0.005)	1.123*** (0.006)	1.104*** (0.012)	1.096*** (0.005)	1.082*** (0.008)	1.130*** (0.006)
white	1.120*** (0.049)	1.025 (0.064)	0.973 (0.038)	0.988 (0.053)	1.128* (0.073)	1.046 (0.046)	0.984 (0.048)	1.027 (0.038)
sitconj_uniao	1.453*** (0.043)	1.350*** (0.014)	1.253*** (0.012)	1.263*** (0.017)	1.443*** (0.037)	1.327*** (0.015)	1.221*** (0.015)	1.216*** (0.012)
aged_45to54	1.256*** (0.029)	1.253*** (0.019)	1.265*** (0.038)	1.138*** (0.039)	1.258*** (0.014)	1.245*** (0.019)	1.262*** (0.019)	1.119*** (0.017)
aged_35to44	1.711*** (0.026)	1.768*** (0.018)	1.678*** (0.073)	1.649*** (0.067)	1.709*** (0.026)	1.743*** (0.038)	1.652*** (0.047)	1.594*** (0.040)
aged_25to34	2.546*** (0.050)	2.436*** (0.044)	2.302*** (0.140)	2.283*** (0.142)	2.555*** (0.115)	2.374*** (0.106)	2.246*** (0.116)	2.150*** (0.079)
educ_0to3	0.797*** (0.061)	0.895 (0.061)	0.950* (0.029)	0.805*** (0.020)	0.852 (0.110)	0.831** (0.064)	0.852*** (0.048)	0.696*** (0.027)
educ_4to7	0.818*** (0.038)	0.901* (0.050)	0.932** (0.028)	0.934*** (0.024)	0.833*** (0.045)	0.876*** (0.036)	0.880*** (0.028)	0.845*** (0.018)
educ_11to14	1.210*** (0.050)	1.118*** (0.039)	1.094** (0.041)	1.020 (0.023)	1.191*** (0.041)	1.113*** (0.020)	1.100*** (0.021)	1.052*** (0.016)
educ_15	2.151*** (0.291)	1.472*** (0.156)	1.487*** (0.167)	1.517*** (0.115)	2.092*** (0.196)	1.517*** (0.054)	1.619*** (0.055)	1.677*** (0.046)
regic1	0.501** (0.173)	0.664* (0.212)	1.468*** (0.046)	2.718*** (0.071)	0.444*** (0.131)	0.397*** (0.085)	0.391*** (0.017)	0.404*** (0.014)
regic2	0.325*** (0.071)	0.744*** (0.079)	0.654* (0.182)	1.450 (0.441)	0.595* (0.237)	0.984 (0.110)	0.354*** (0.126)	0.372*** (0.129)
regic3	0.679*** (0.081)	0.943 (0.079)	0.494*** (0.104)	0.903 (0.259)	1.164 (0.185)	1169* (0.117)	0.452*** (0.127)	0.370*** (0.103)
regic4	0.867* (0.115)	0.803*** (0.065)	0.876*** (0.035)	1071* (0.049)	1.363** (0.171)	0.804* (0.114)	0.885** (0.048)	0.862*** (0.045)
_cons	0.056*** (0.005)	0.033*** (0.003)	0.035*** (0.002)	0.022*** (0.001)	0.045*** (0.005)	0.037*** (0.003)	0.043*** (0.004)	0.032*** (0.002)
Pseudo-R2	0.037	0.019	0.024	0.027	0.036	0.033	0.029	0.031
Nº obs	8.088.455	5.582.196	6.745.692	8.373.332	8.088.455	5.582.196	6.745.692	8.373.332

Source: elaborated by the authors from demographic censuses 1980 to 2010.

(***) Significant at 1%.

(**) Significant at 5%.

(*) Significant at 10%.

Table 09 – Odds ratio of logistic models to individual migration condition by development and attractiveness index (Brazil, 1980-2010)

	Origin (fixed date)				Destination (census date)			
	1980	1991	2000	2010	1980	1991	2000	2010
sex	1.111*** (0.005)	1.100*** (0.004)	1.087*** (0.005)	1.122*** (0.006)	1.108*** (0.012)	1.094*** (0.005)	1.081*** (0.008)	1.125*** (0.006)
white	1.239*** (0.103)	1.044 (0.103)	1.049 (0.061)	0.978 (0.068)	1.106 (0.093)	0.953 (0.070)	0.949 (0.061)	0.903 (0.063)
sitconj_uniao	1.444*** (0.040)	1.354*** (0.014)	1.259*** (0.014)	1.270*** (0.019)	1.460*** (0.039)	1.337*** (0.017)	1.226*** (0.014)	1.214*** (0.015)
aged_45to54	1.266*** (0.031)	1.255*** (0.018)	1.271*** (0.036)	1.144*** (0.038)	1.258*** (0.015)	1.253*** (0.019)	1.265*** (0.020)	1.126*** (0.018)
aged_35to44	1.713*** (0.026)	1.774*** (0.019)	1.692*** (0.066)	1.672*** (0.065)	1.722*** (0.028)	1.759*** (0.036)	1.666*** (0.050)	1.627*** (0.044)
aged_25to34	2.538*** (0.049)	2.449*** (0.038)	2.321*** (0.123)	2.330*** (0.138)	2.586*** (0.100)	2.417*** (0.099)	2.274*** (0.121)	2.221*** (0.083)
educ_0to3	0.747*** (0.072)	0.905 (0.094)	0.957 (0.054)	0.854*** (0.019)	0.932 (0.102)	0.879** (0.057)	0.891** (0.049)	0.767*** (0.026)
educ_4to7	0.818*** (0.037)	0.909 (0.054)	0.937* (0.035)	0.957 (0.030)	0.857*** (0.045)	0.879*** (0.037)	0.889*** (0.030)	0.870*** (0.020)
educ_11to14	1.195*** (0.053)	1.113*** (0.036)	1.077* (0.042)	1.008 (0.026)	1.210*** (0.047)	1.144*** (0.028)	1.109*** (0.022)	1.064*** (0.022)
educ_15	2.106*** (0.262)	1.453*** (0.150)	1.477*** (0.169)	1.513*** (0.123)	2.020*** (0.197)	1.516*** (0.067)	1.597*** (0.056)	1.708*** (0.073)
c1	0.876*** (0.039)	0.958 (0.048)	0.983 (0.046)	1.092*** (0.035)	0.958* (0.031)	0.947** (0.023)	0.926*** (0.018)	0.926*** (0.023)
c2	1.038 (0.056)	0.977 (0.030)	1.039* (0.025)	1.039* (0.023)	0.940* (0.046)	0.859*** (0.031)	0.923*** (0.022)	0.882*** (0.011)
_cons	0.038*** (0.003)	0.027*** (0.002)	0.029*** (0.004)	0.025*** (0.002)	0.037*** (0.005)	0.029*** (0.003)	0.031*** (0.003)	0.024*** (0.002)
Pseudo-R2	0.034	0.017	0.013	0.024	0.022	0.024	0.020	0.027
Nº obs	8.088.455	5.582.196	6.745.692	8.373.332	8.088.455	5.582.196	6.745.692	8.373.332

Source: elaborated by the authors from demographic censuses 1980 to 2010.

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