

An exploratory spatial data analysis for the Family Development Index

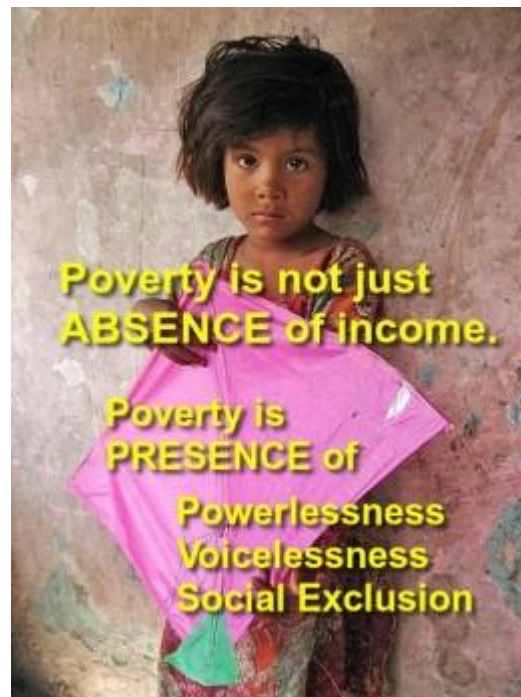
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1. Introduction

- Poverty and inequality have to be seen based on the largest possible number of variables, depicting more fully the socio-economic reality of society (Sen, 2000).



2. Family Development Index - FDI

- FDI – Multidimensional Poverty Index



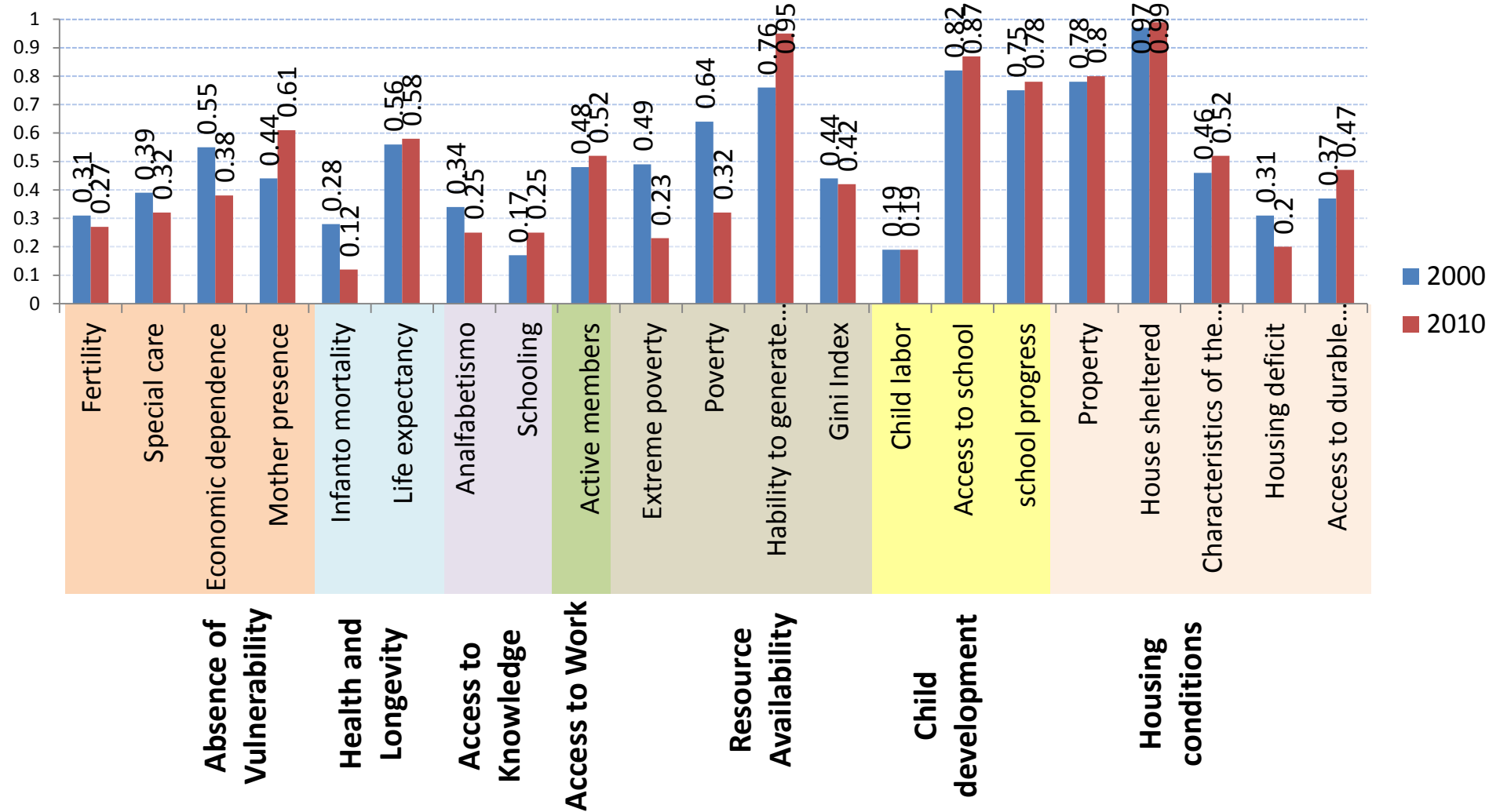
2. Family Development Index - FDI

- Each dimension represents access to necessary for families to meet their needs and satisfying those needs effectively.
- From the aggregation of such family characteristics, the intent is to provide an analysis of types of municipalities in terms of municipal socioeconomic attributes.

3. Methodology

- The FDI for the municipalities was estimated based on the Population Census, School Census and Civil Registration, considering the years of 2000 and 2010.

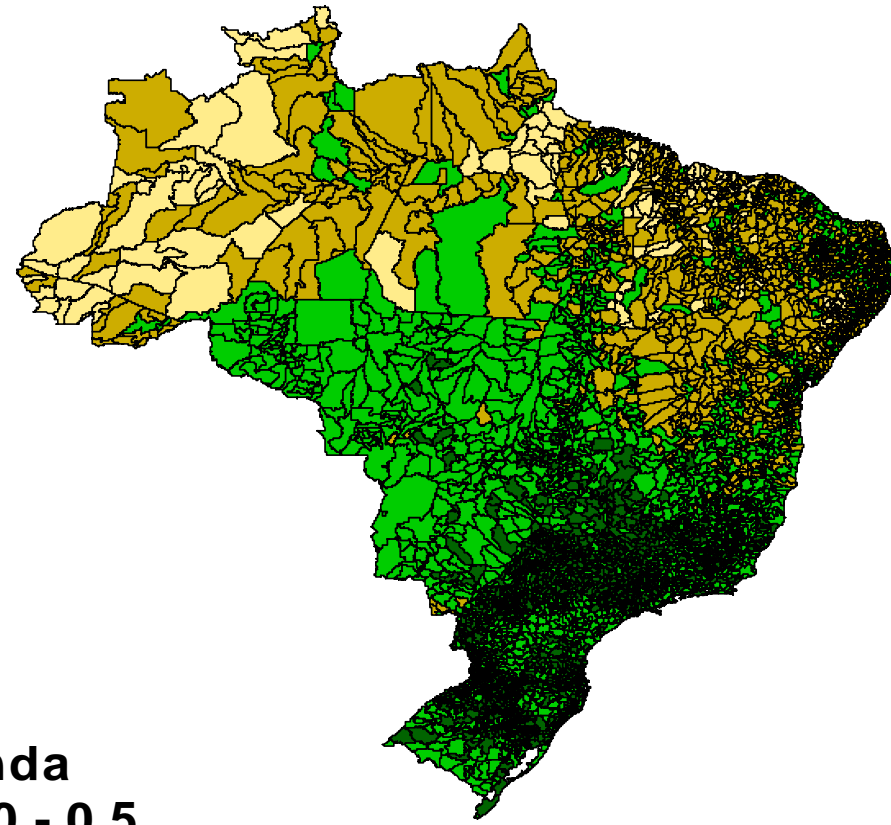
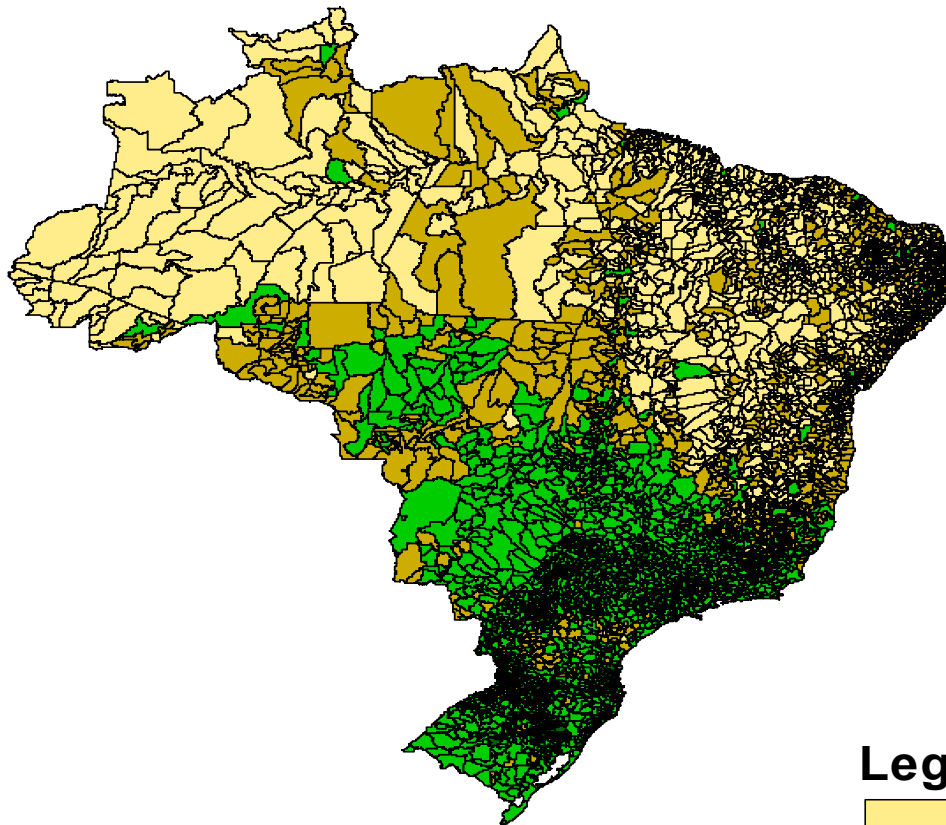
4. Methodology -General characteristics



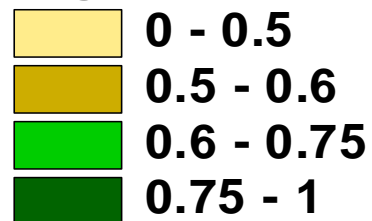
4. – FDI spatial distribution

2000

2010



Legenda



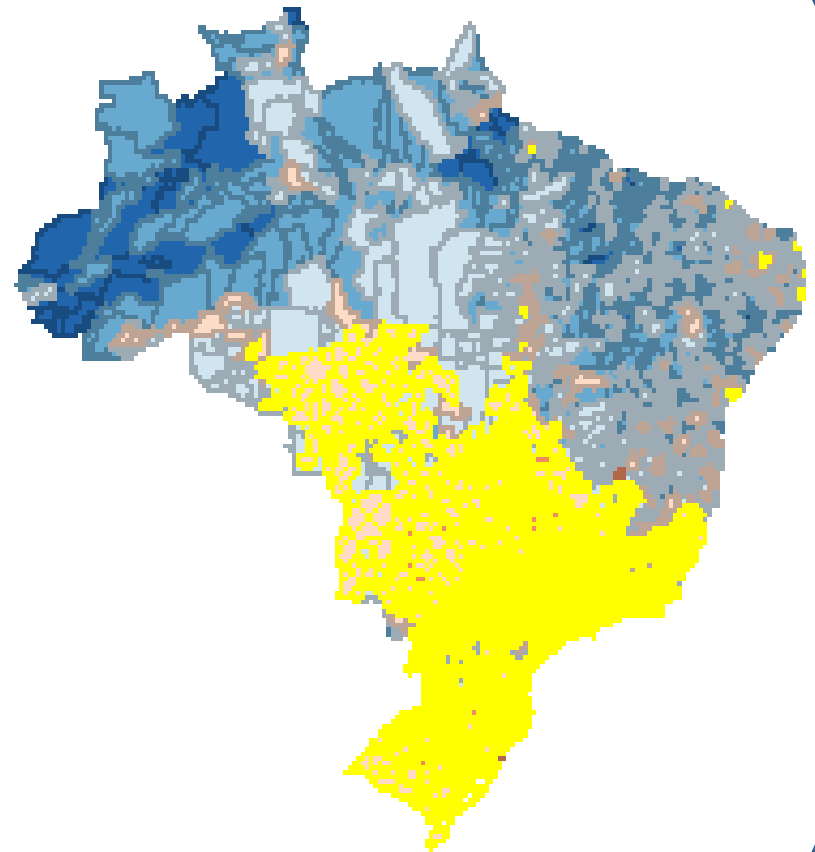
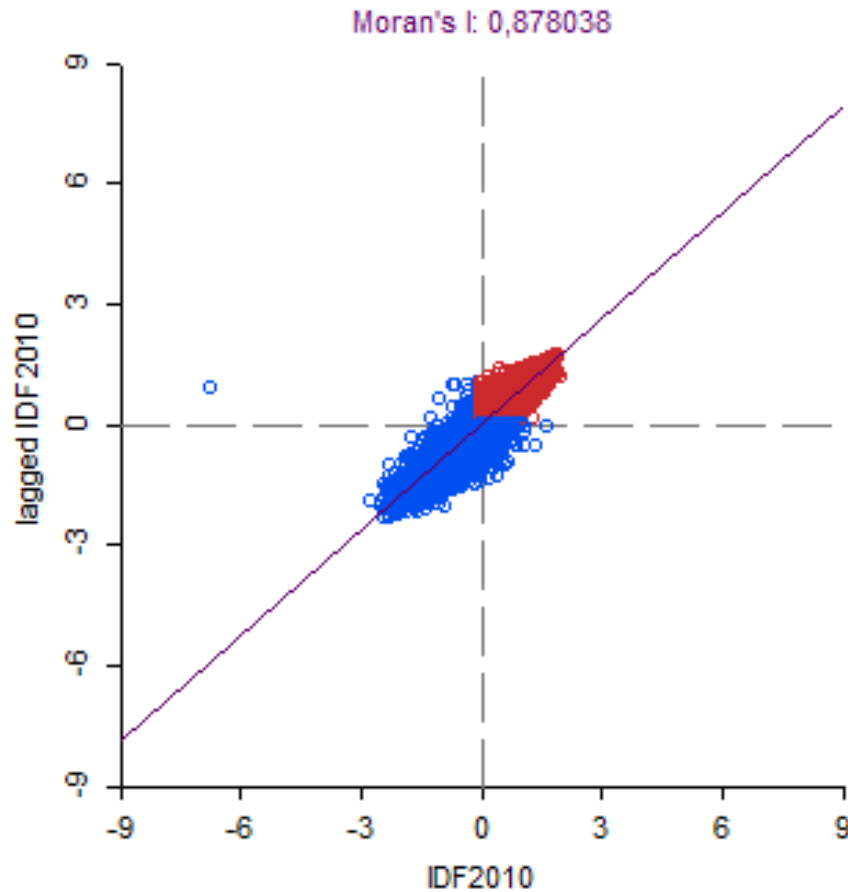
5. FDI -Exploratory Spatial Data Analysis

Global Moran's I

Index	2000	2010
Absence of vulnerability	0.7786	0.7149
Health and longevity	0.6790	0.6946
Access to knowledge	0.7702	0.8284
Access to work	0.7954	0.8033
Resource availability	0.8397	0.8124
Child development	0.6644	0.6230
Housing conditions	0.6400	0.7568
FDI	0.8633	0.8780

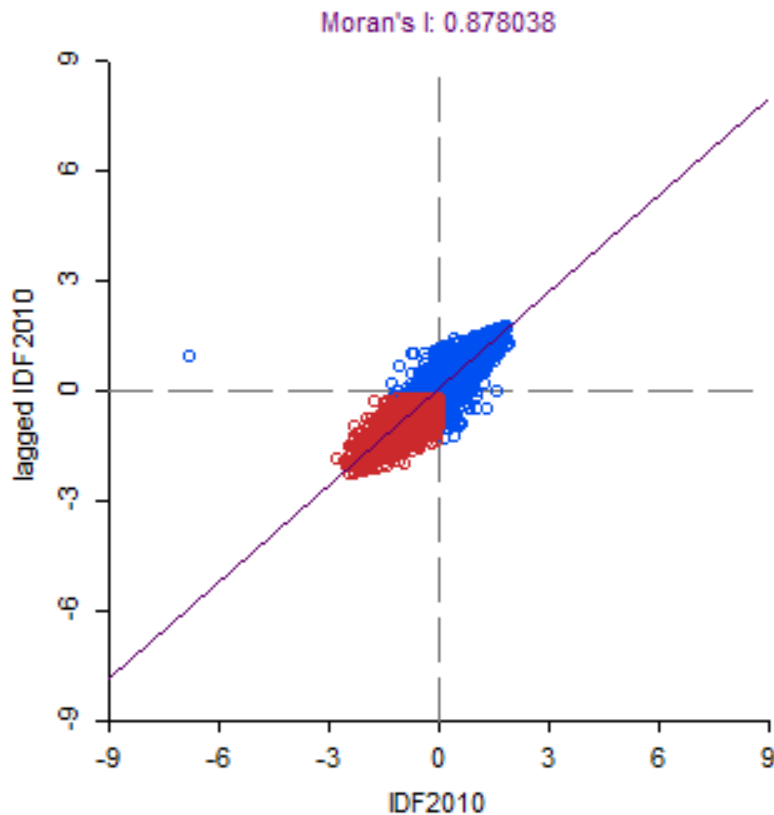
The spatial autocorrelation of each index is positive and significant in both years. There is similarity in the average development of families and the spatial location of this development.

5. FDI -Exploratory Spatial Data Analysis - FDI



Spatial regimes - 2010

5. FDI -Exploratory Spatial Data Analysis- FDI



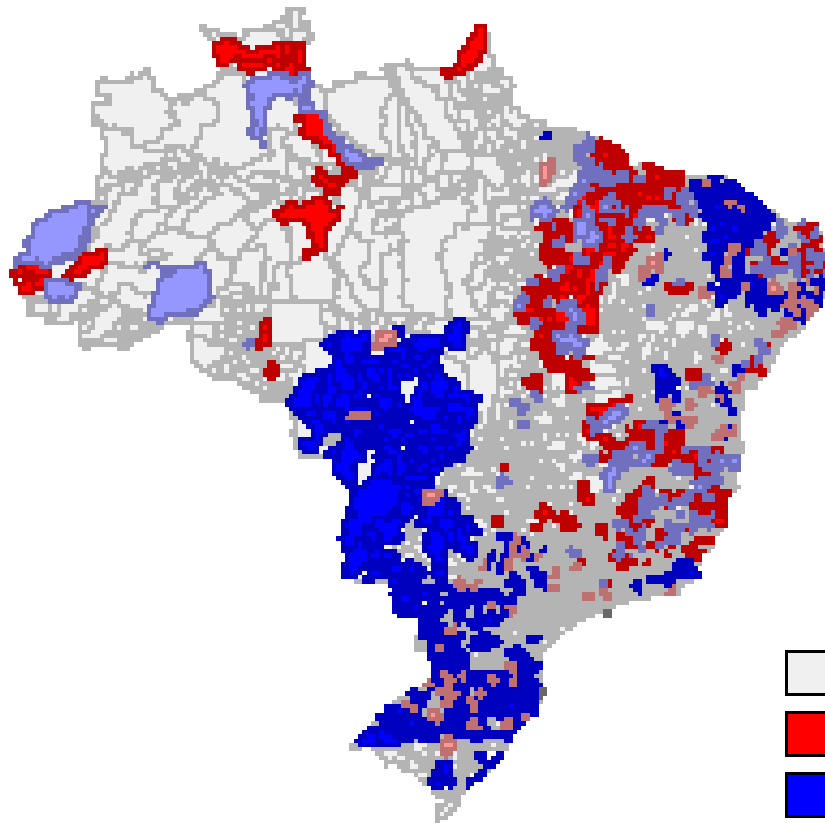
Spatial regimes - 2010

5. FDI -Exploratory Spatial Data Analysis

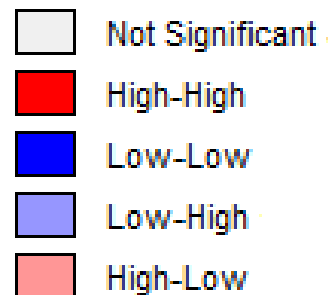
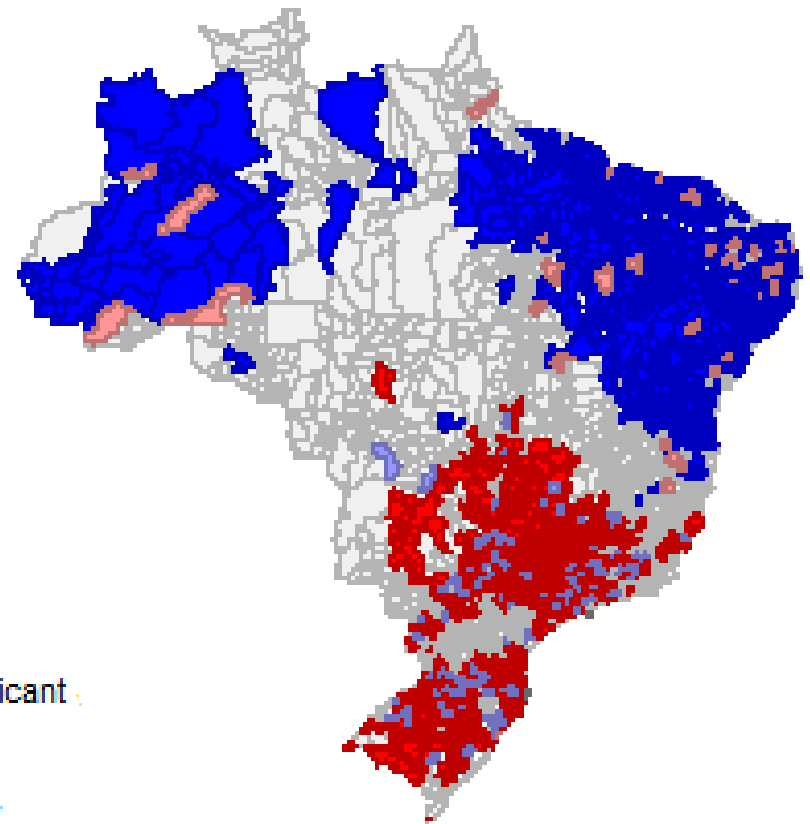
- To capture local patterns of spatial autocorrelation Local Moran's I was used.

Health and longevity

**Variation
2000/2010**

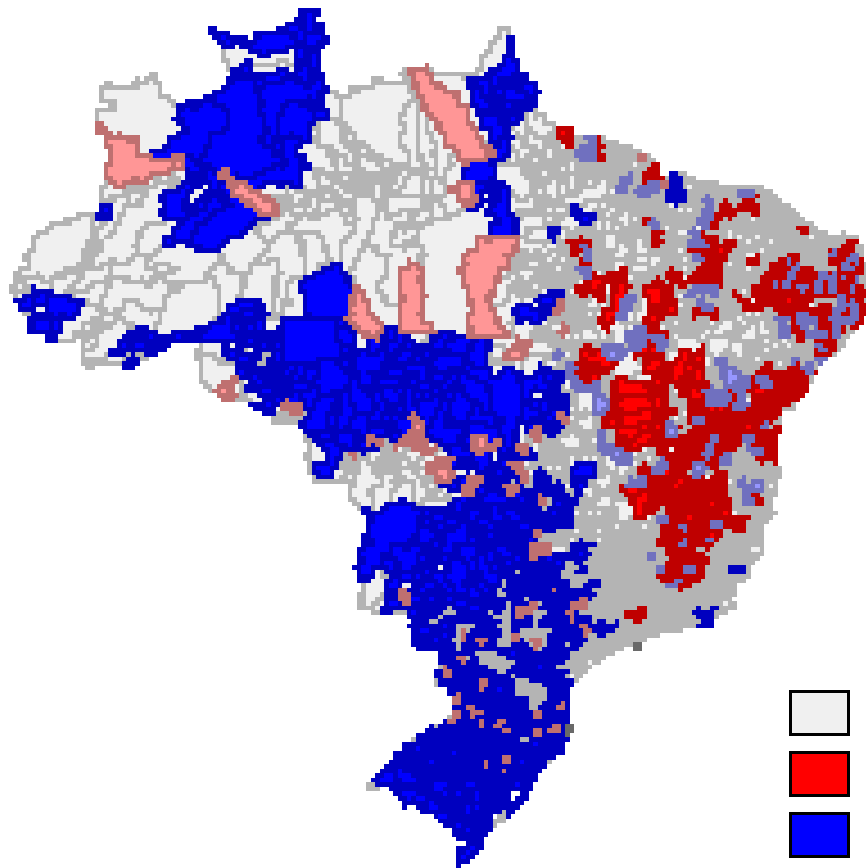


2010

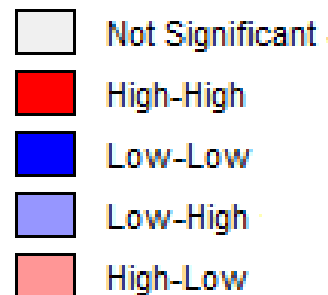
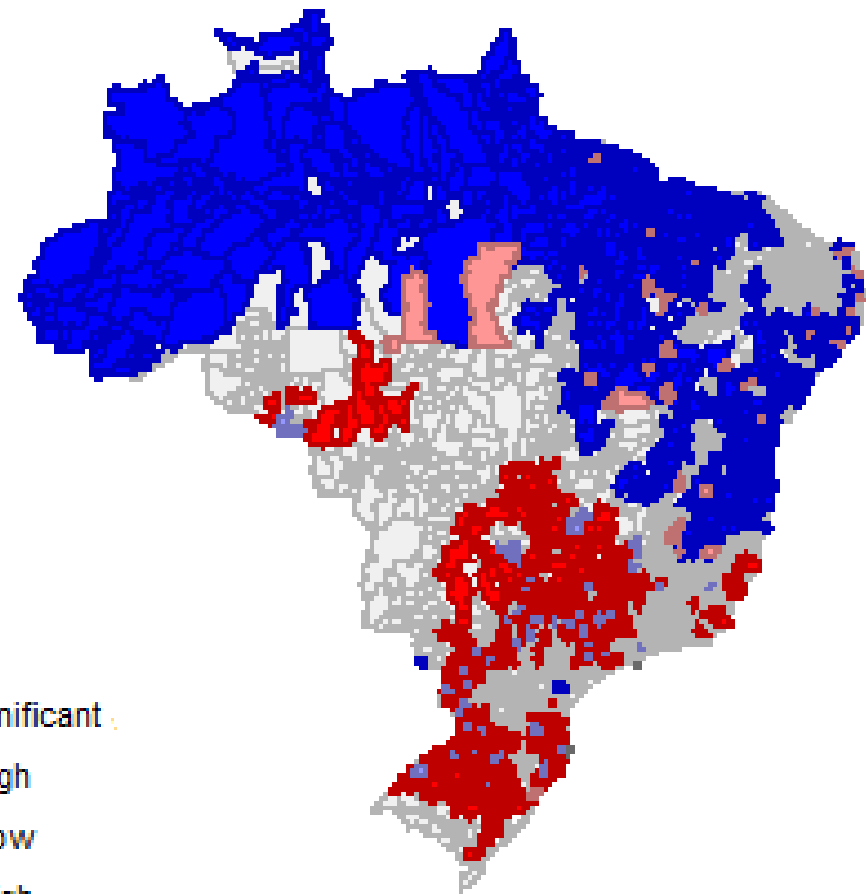


Absence of vulnerability

Variation
2000/2010

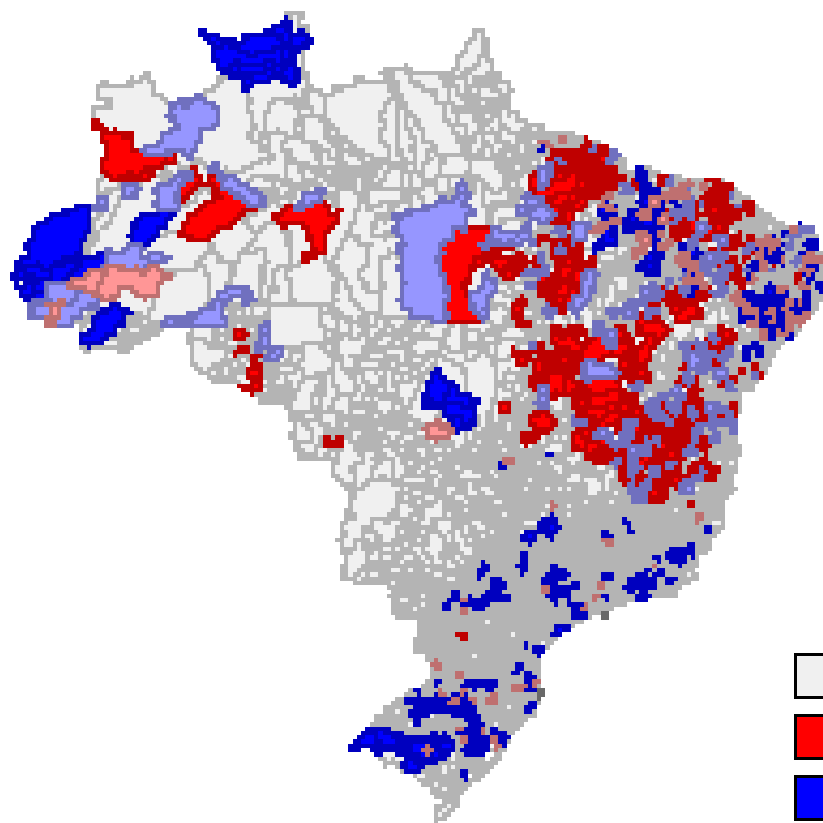


2010

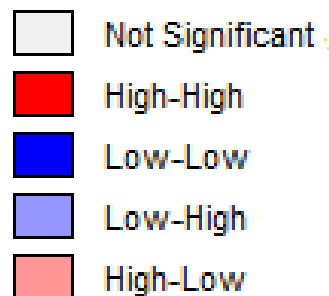
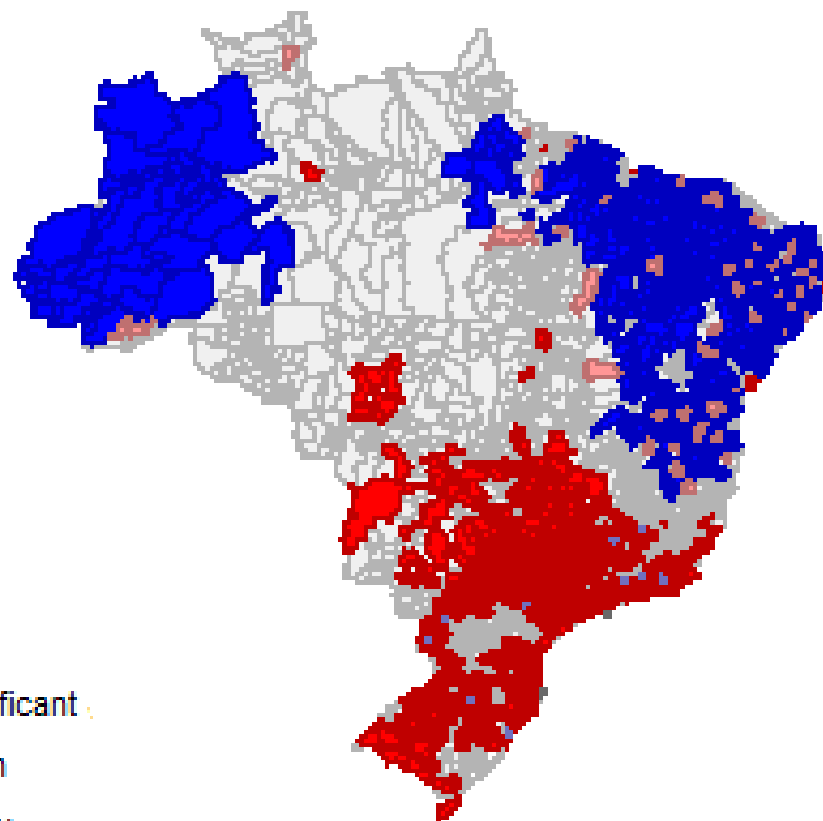


Access to knowledge

Variation
2000/2010



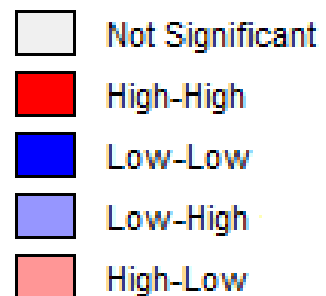
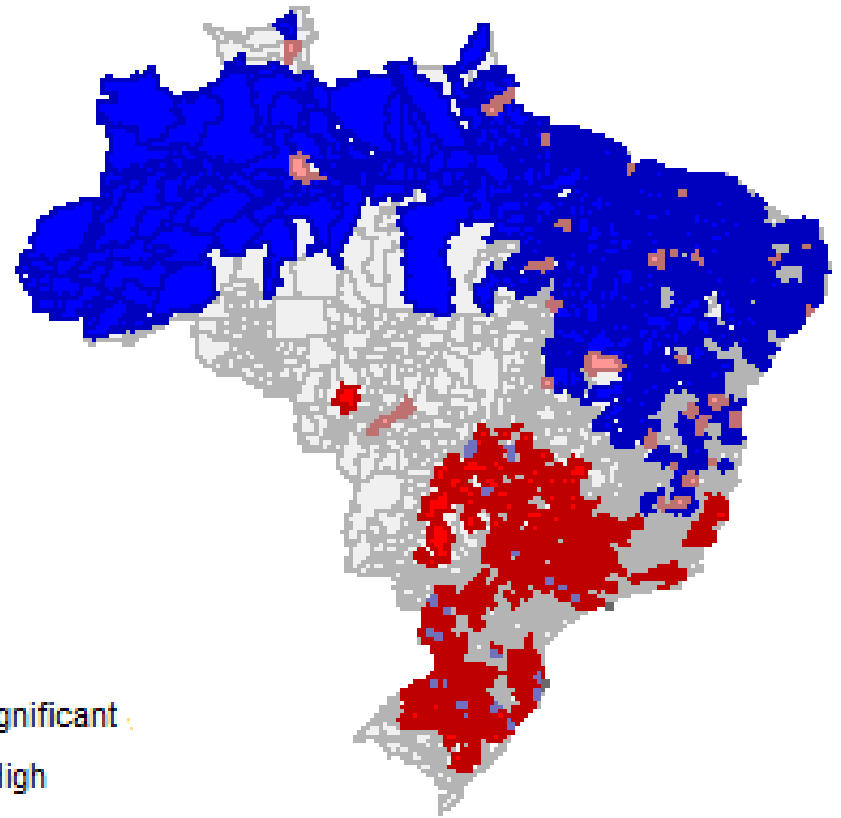
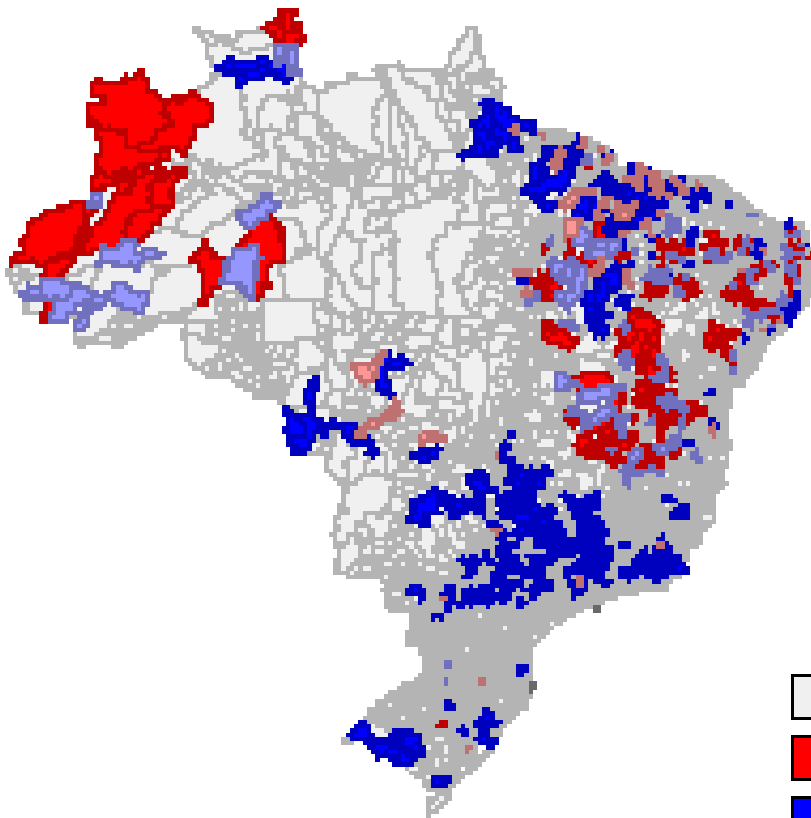
2010



Access to work

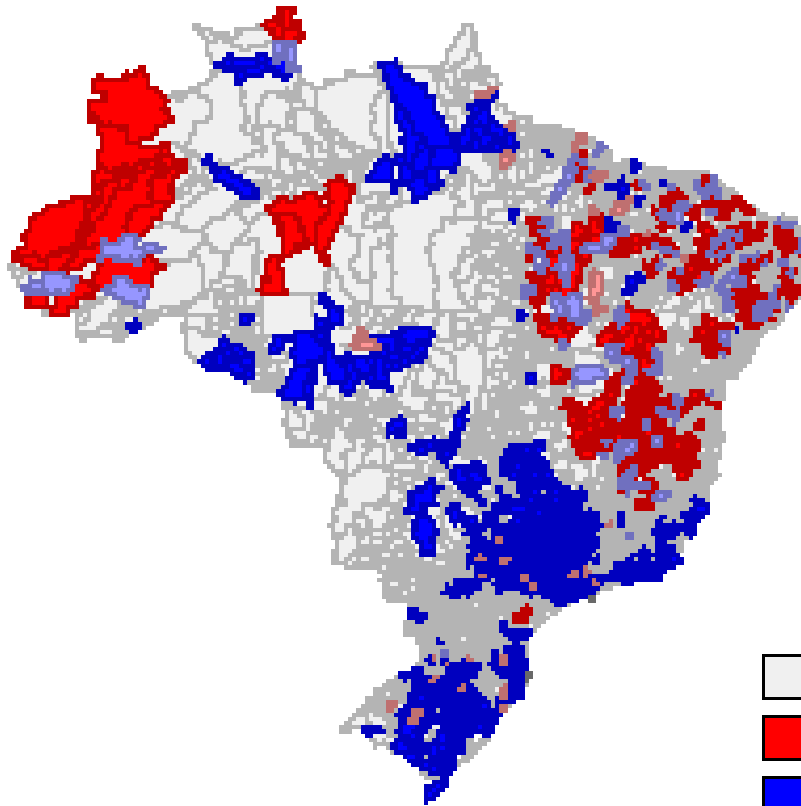
Variation
2000/2010

2010

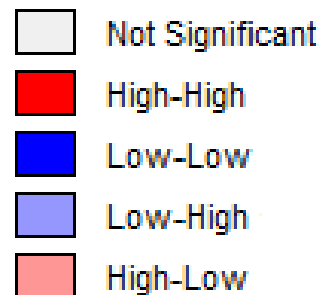
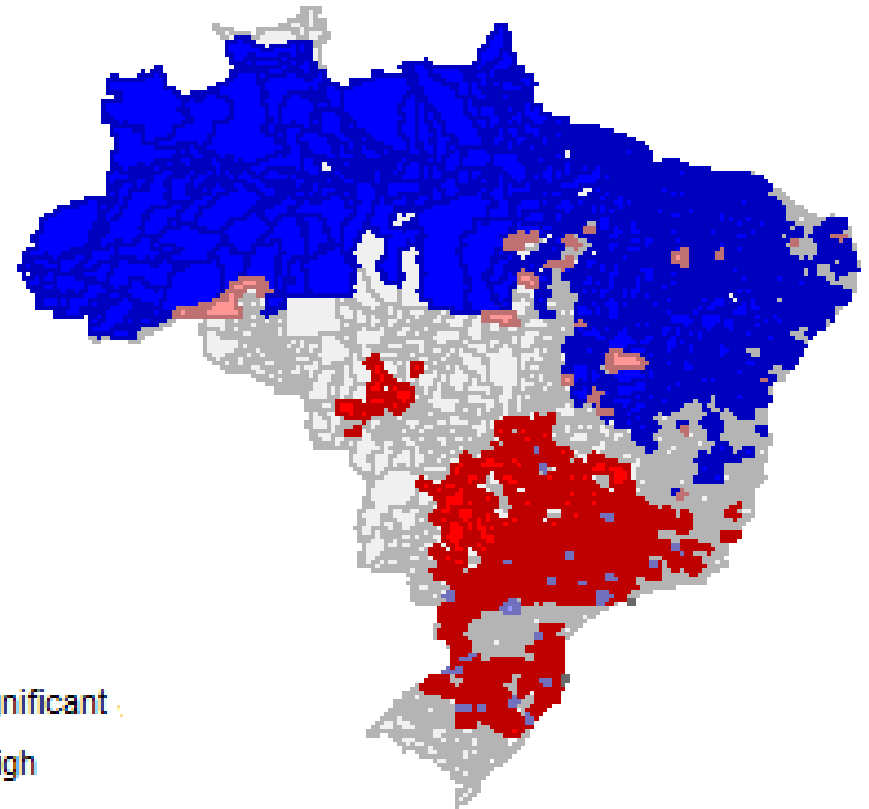


Resource availability

Variation
2000/2010



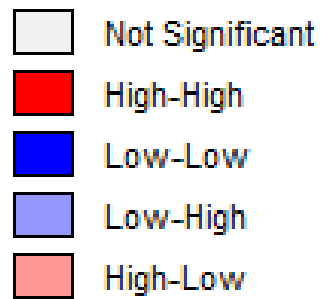
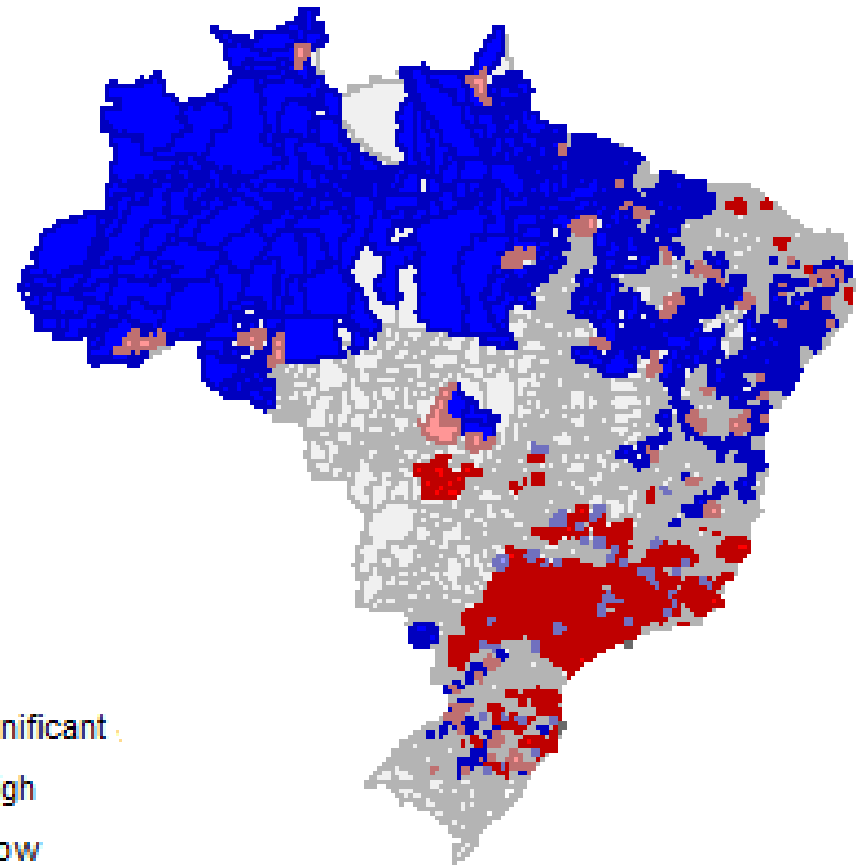
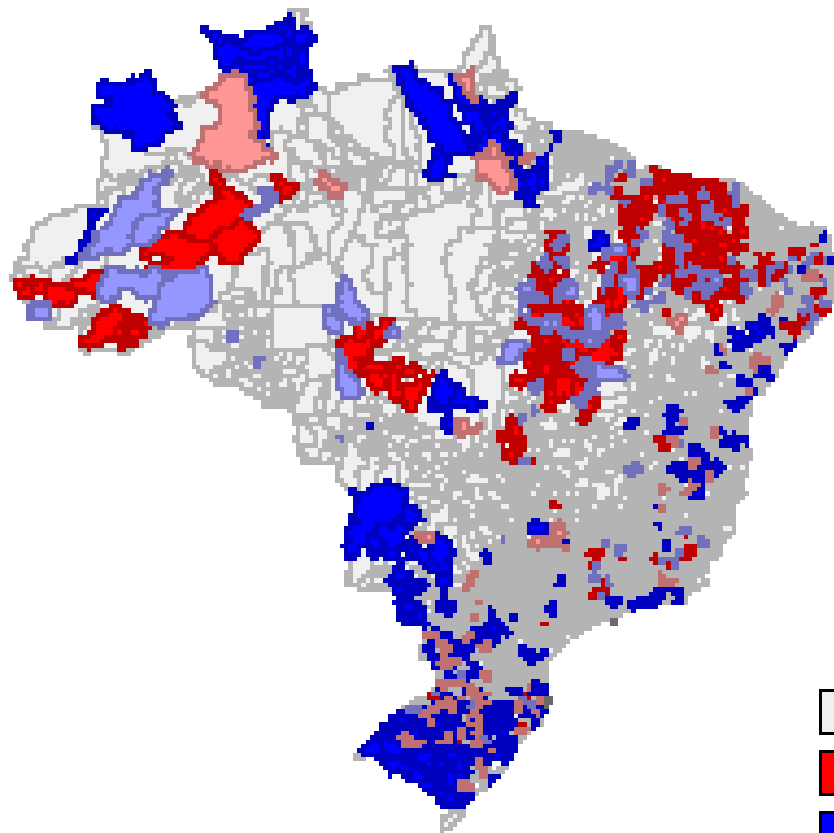
2010



Child development

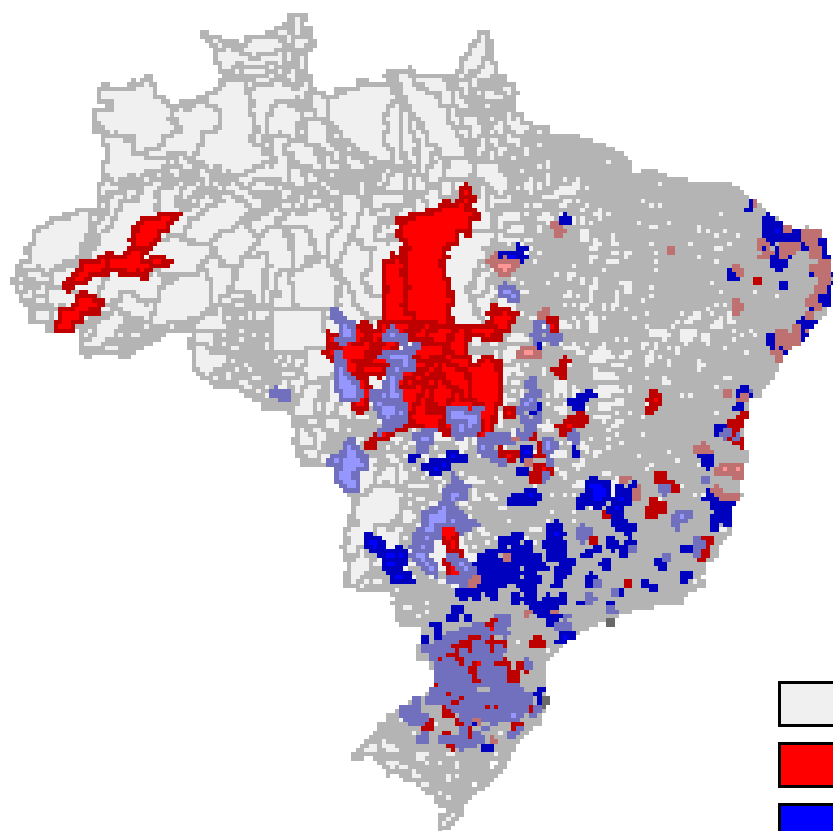
Variation
2000/2010

2010

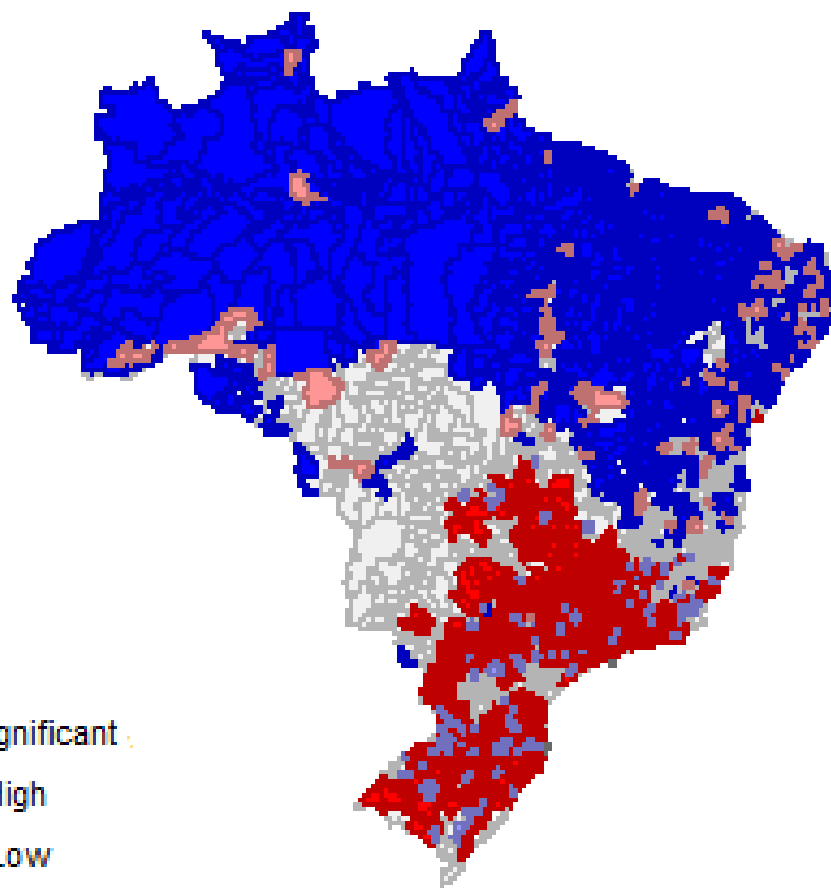


Housing conditions

**Variation
2000/2010**



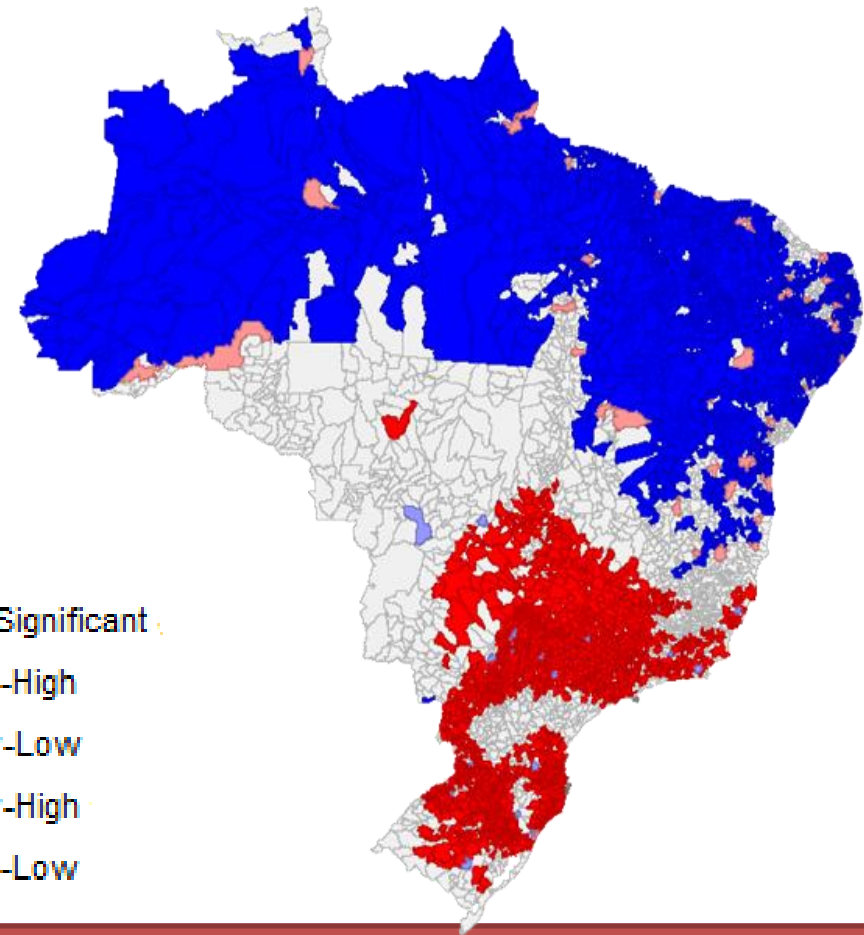
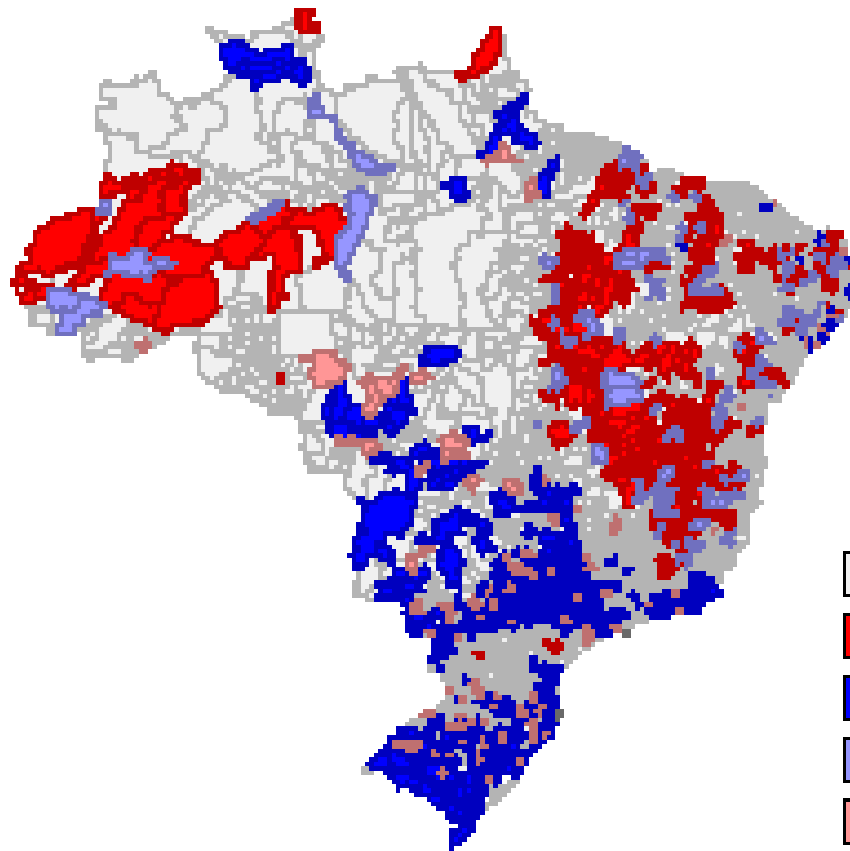
2010



FDI

Variation
2000/2010

2010



The spatial autocorrelation is positive and significant, indicating similarity in the average development of families and the spatial location of this development.

Final Comments

- Both in 2000 and 2010, there were two “Brazils”. One in the South, more developed and other in the north of the country, where we find lower results, including those for FDI.
- However, as we show, the attributes considered in the construction of the FDI and the FDI itself had a higher growth precisely in the northern and northeastern regions, and in some municipalities in the Southeast, showing a decrease of disparities in these areas and an increased spatial association in the period.