



# Institutional Arrangements and Development: A Multivariate and Space Analysis From Minas Gerais, Brazil

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# INTRODUCTION

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- Development theories incorporated new dimensions and these changes reflected in the understanding about underdevelopment;
- Despite the numerous variables that support this discussion, the focus of this paper is to emphasize some institutional approach;
- The main objective is to analyze the relationship Minas Gerais' cities development, with institutional variables related to government action.

# MOTIVATION

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- Differences in cities' institutional arrangements (laws or other mechanisms) are significant when we compare Minas Gerais' cities? Are these same arrangements related to the performance of socioeconomic indicators?

# METHODOLOGY

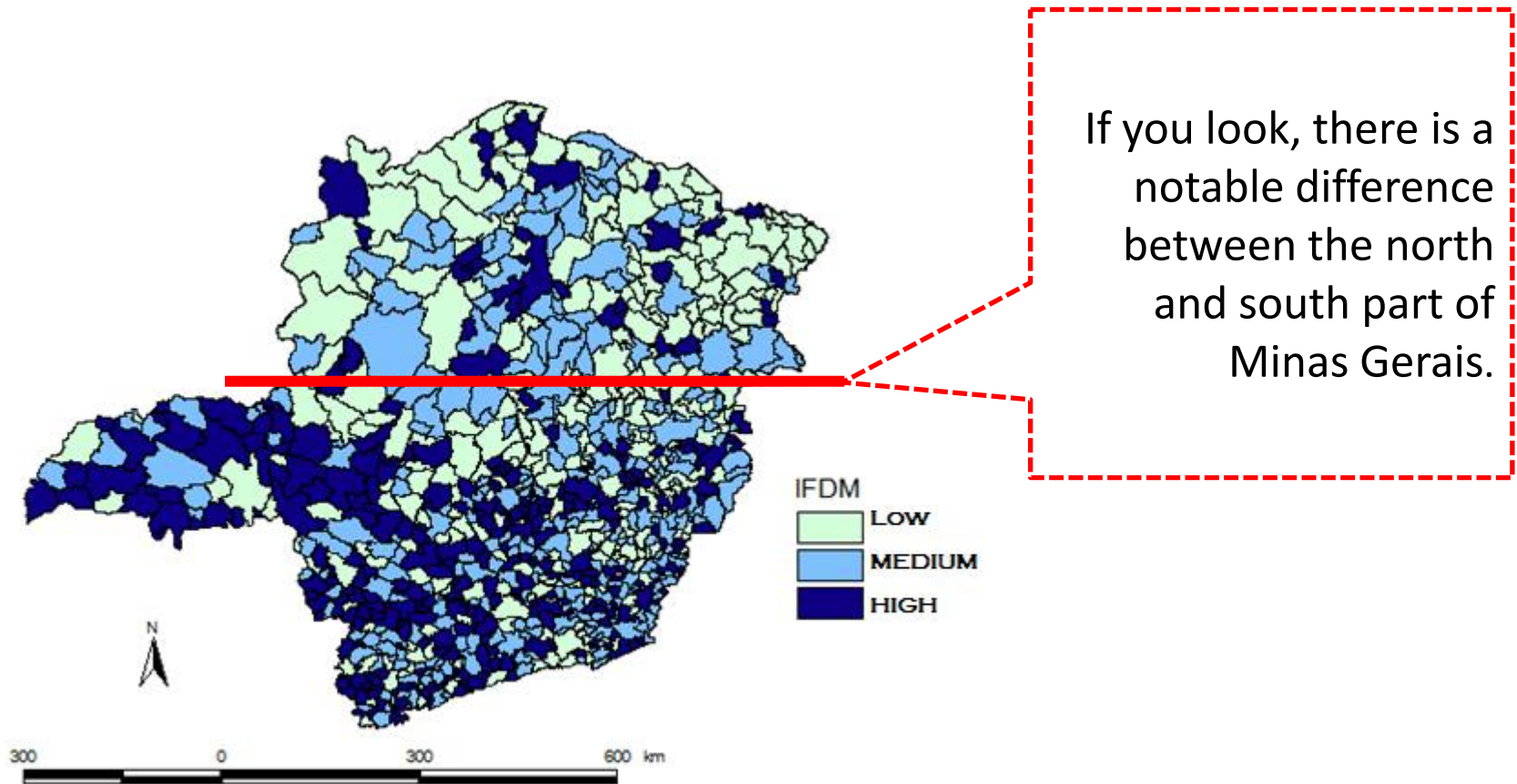
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- Multivariate Analysis - Correspondence Analysis;
- Spatial econometrics - Geographically Weighted Regression - GWR;
- The first method allows a better visualization of the possible relationships between data set.
- The second method use econometrics to represent individual results.

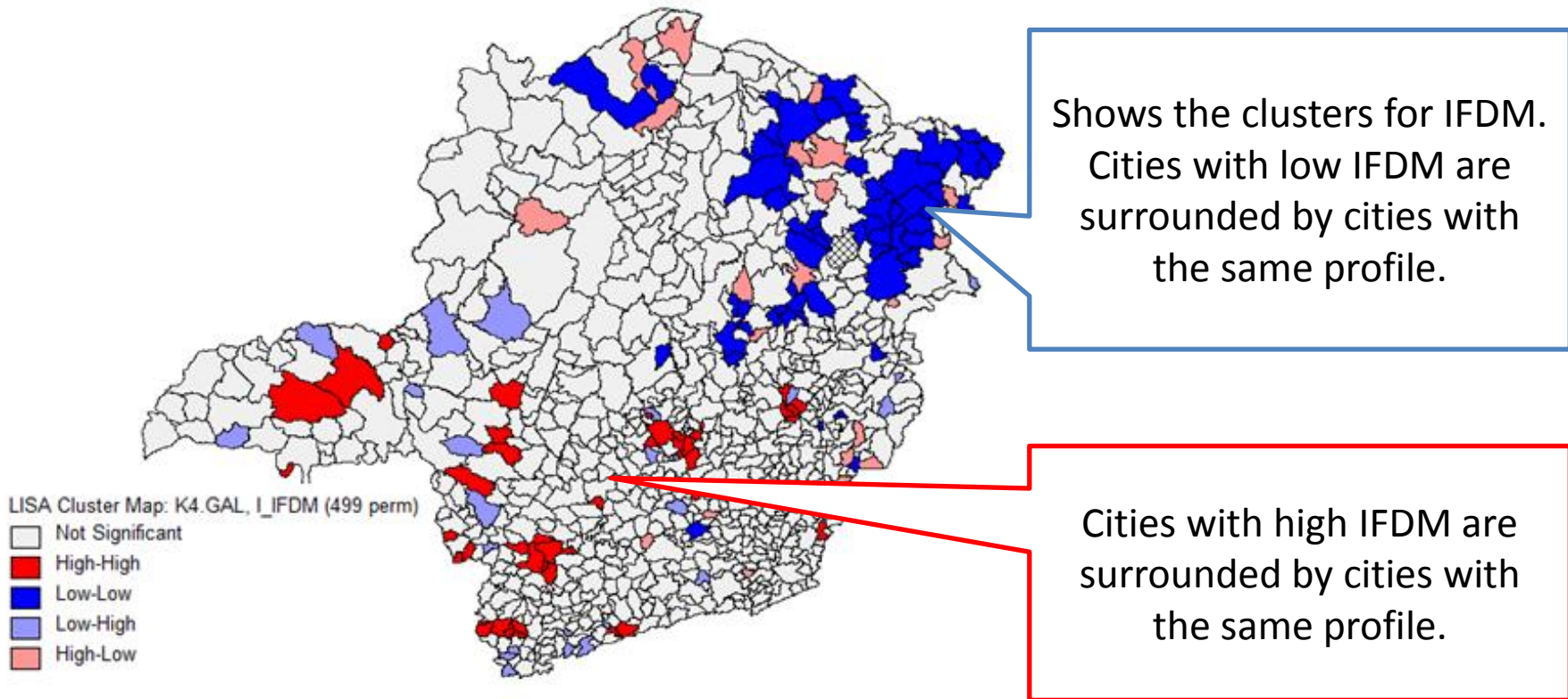
# DATA

|  | Variable    | Source       |
|--|-------------|--------------|
| Dependent variable                                   | IFDM        | FIRJAN       |
| Categorical Explanatory Variables:<br>Institutions   | Planing     | IBGE - MUNIC |
|  | Management  | IBGE - MUNIC |
|  | Educational | IBGE - MUNIC |
|  | Health      | IBGE - MUNIC |
| Continuous Explanatory Variables:<br>Public spending | Educational | FJP          |
|  | Health      | FJP          |
|  | Others      | FJP          |
|  | Investment  | FJP          |

# EXPLORATORY SPATIAL DATA ANALYSIS

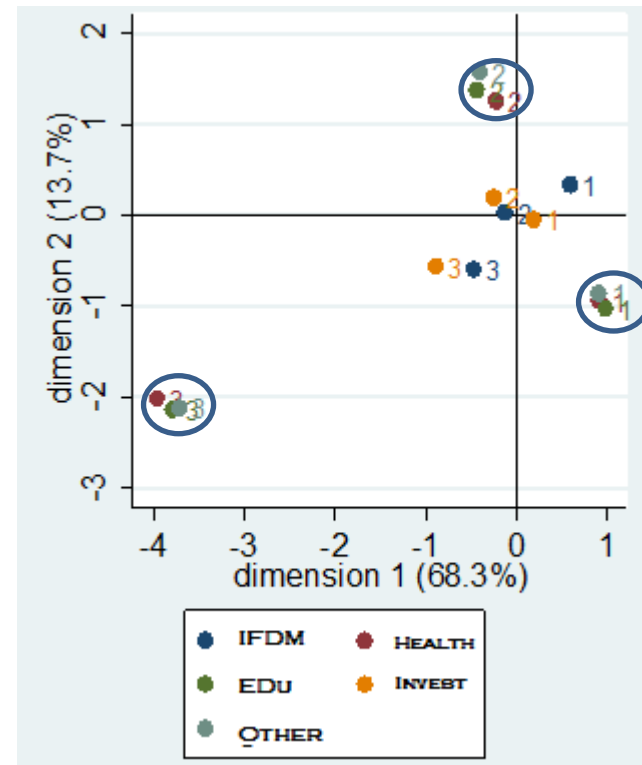
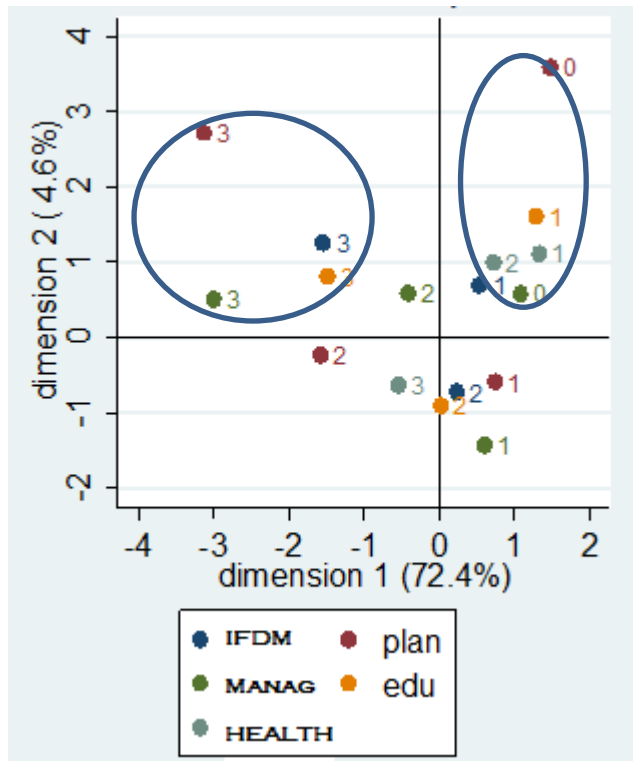


# EXPLORATORY SPATIAL DATA ANALYSIS



Local Indicators of Spatial Association LISA (IFDM)

# RESULTS



Multiple Correspondence Analysis of IFDM and institutional dimension; and IFDM and dimension of public spending



# RESULTS

| Variable                                |  | Global Model      | Local Model      |
|---|--|-------------------|------------------|
| PLAN                                    |  | 0.0067 (0.0009)*  | 0.0044 (0.00180) |
| GEST                                    |  | -0.0006 (0.0014)  | 0.0018 (0.0033)  |
| EDU                                     |  | 0.0002 (0.0012)   | -0.0002 (0.0014) |
| SAU                                     |  | -0.0014 (0.0020)  | -0.0012 (0.0027) |
| GSAU                                    |  | 0.0553 (0.0130)*  | 0.0216 (0.0307)  |
| GEDU                                    |  | -0.0604 (0.0192)* | -0.0438 (0.0487) |
| INV                                     |  | 0.0235 (0.0076)*  | 0.0236 (0.0139)  |
| GOUT                                    |  | 0.0578 (0.0163)*  | 0.0299 (0.0306)  |
| CONSTANT                                |  | 0.5497 (0.0191)*  | 0.6034 (0.0575)  |
| AIC <sub>GLOBAL</sub>                   |  |                   | -2253.1620       |
| AIC <sub>RPG</sub>                      |  |                   | -2630.8896       |
| R <sup>2</sup> (ajus) <sub>GLOBAL</sub> |  |                   | 0.1060           |
| R <sup>2</sup> (ajus) <sub>RPG</sub>    |  |                   | 0.4506           |
| Teste F                                 |  |                   | 8.6040           |
| Residuals Spatial Autocorrelation       |  |                   | not              |
| Number of observations                  |  |                   | 853              |

# FINAL CONCLUSIONS

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- The results indicate the importance of mapping the factors responsible for the evolution of multidimensional socioeconomic indicators and their relationship with institutional factors. To understand the processes of development requires an analysis of these dimensions: cultural, political, economic, social, and more than that, you must understand how regional differences evolve over time and how public policy can be rethought to mitigate the unsatisfying results of the socioeconomic indicators for Minas Gerais' regions.

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**THANK YOU!**

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