



Integrando informações geográficas socioambientais para suporte ao planejamento de habitação social

Juliana Siqueira-Gay

Contextualização

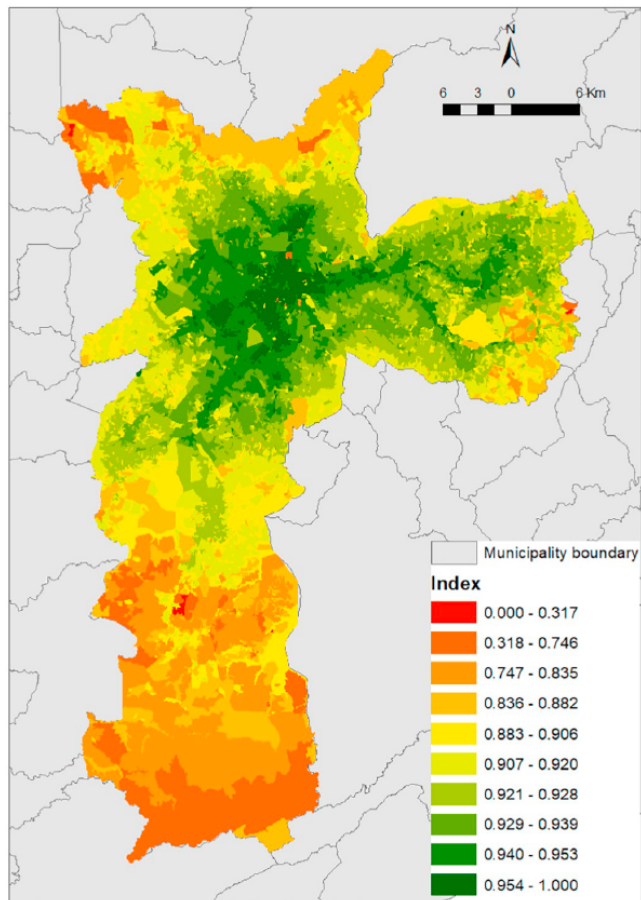
Necessidade de endereçar questões ambientais integradas em planos habitacionais

Propor um índice para integrar e quantificar informações geográficas socioambientais para suporte à tomada de decisão de planos de habitação social



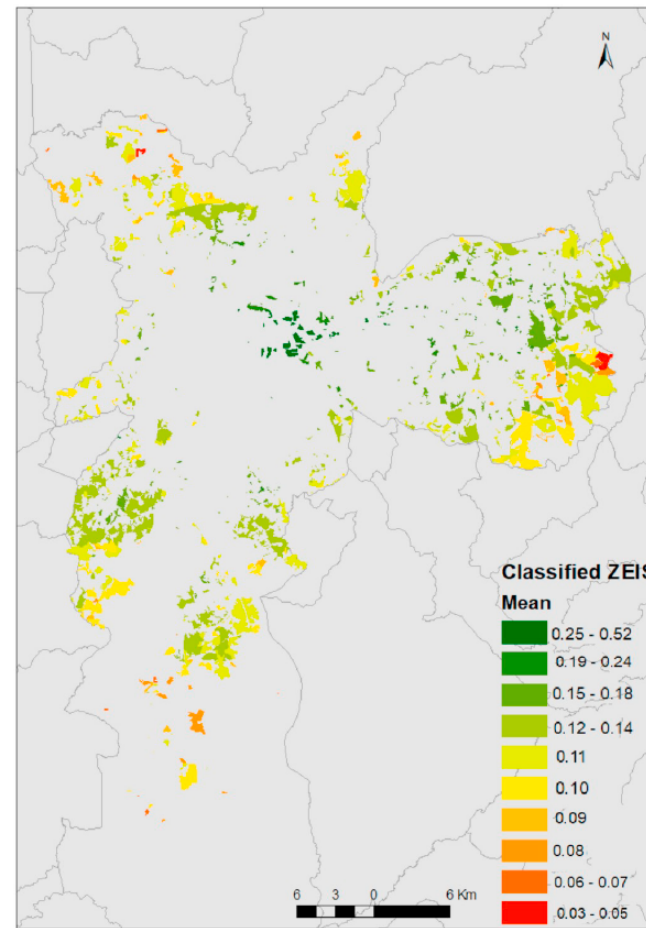
Integrating socio-environmental spatial information to support housing plans

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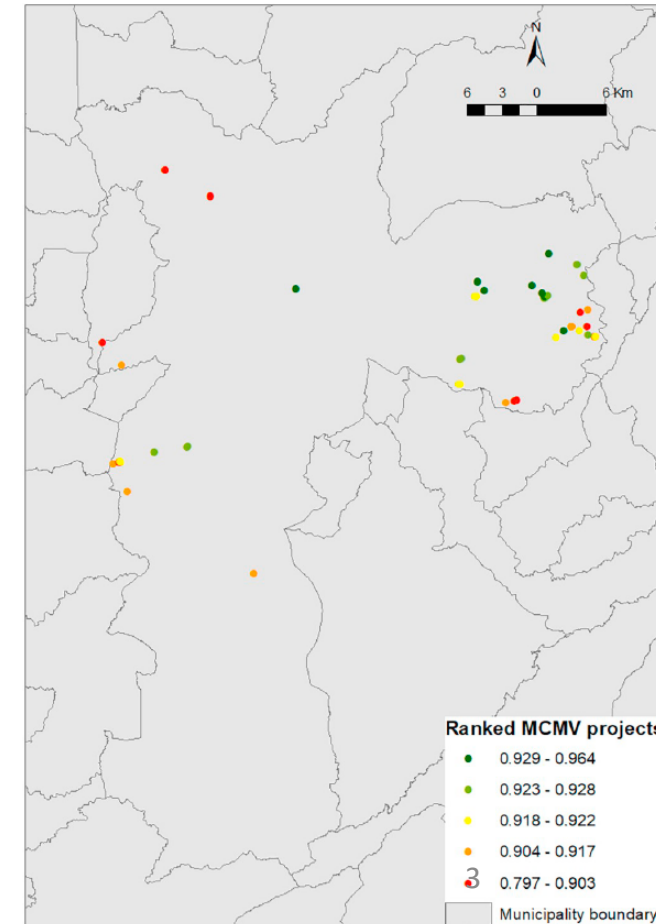


Social Housing Index (SHI)

ZEIS



Projetos Minha Casa
Minha Vida já construídos



Metodologia

- Seleção dos indicadores

- Cálculo dos indicadores

- Obtenção do índice

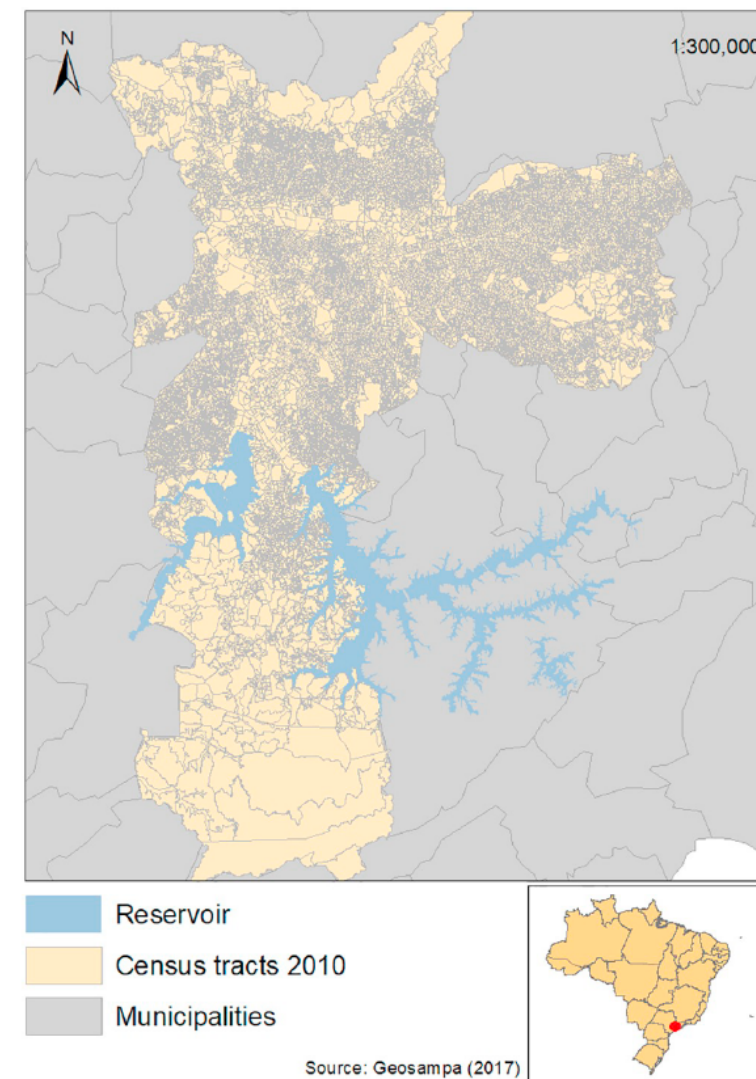
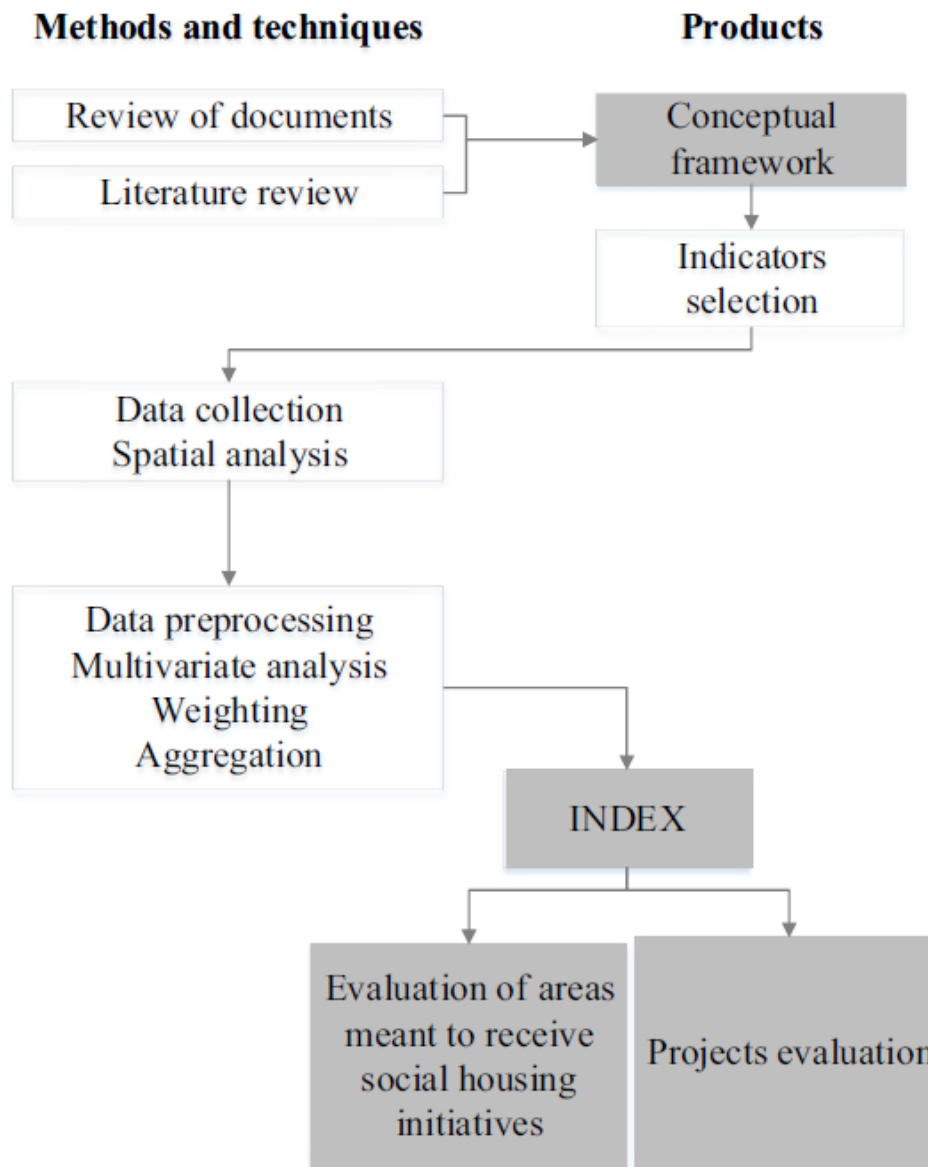
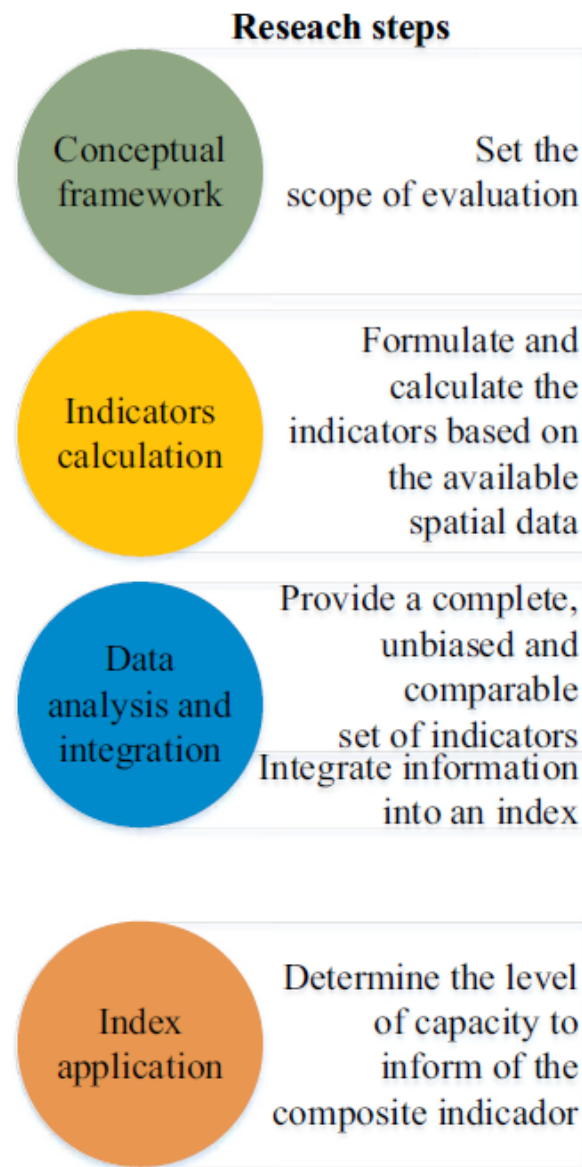
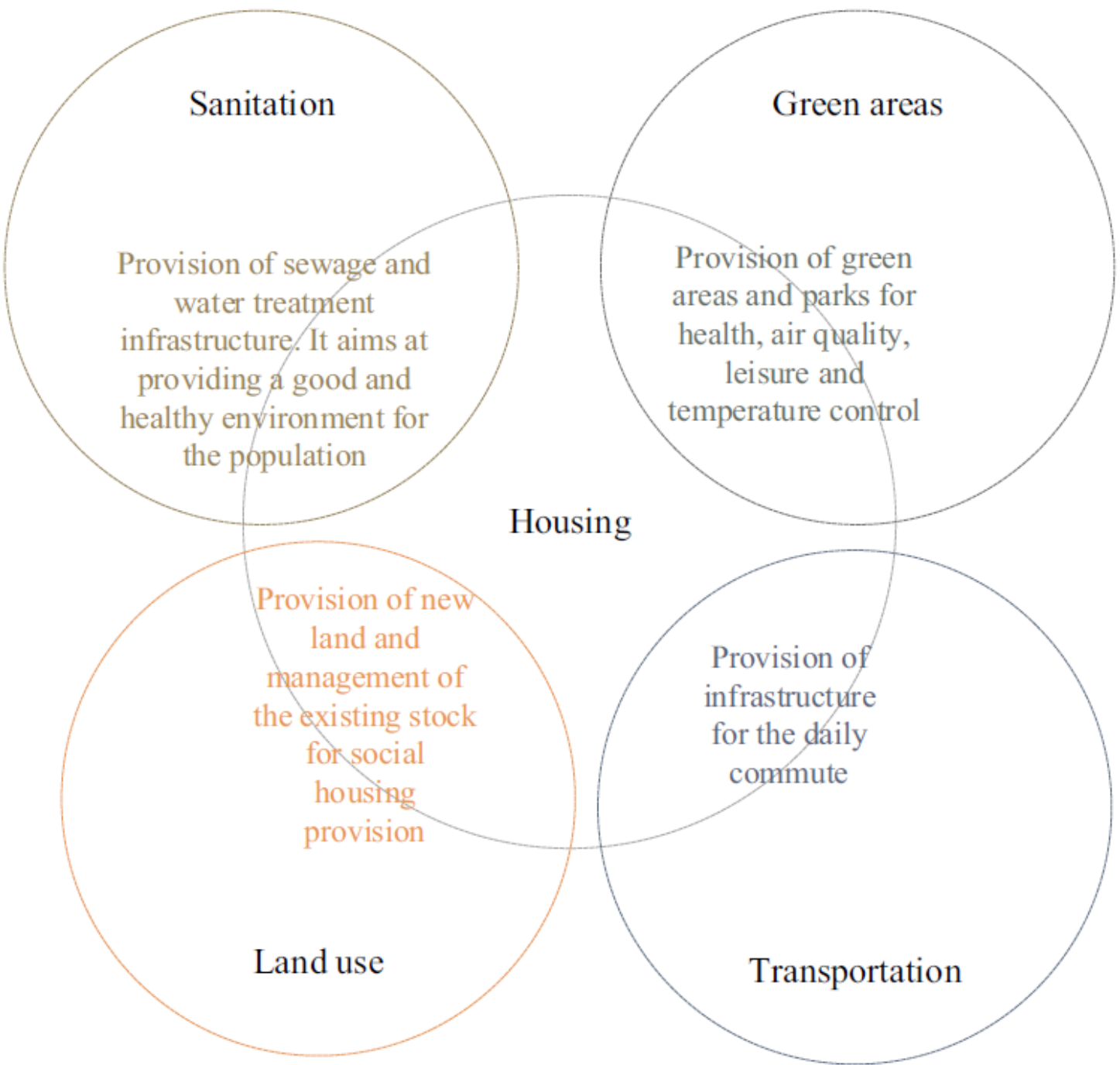
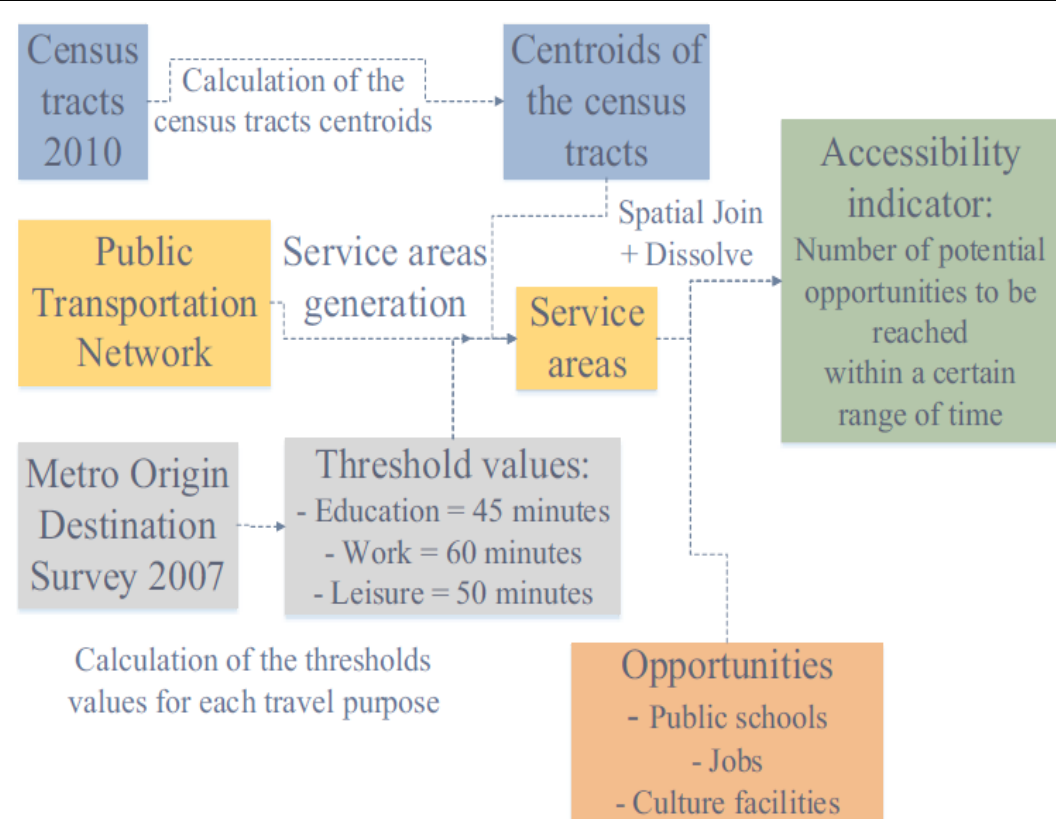
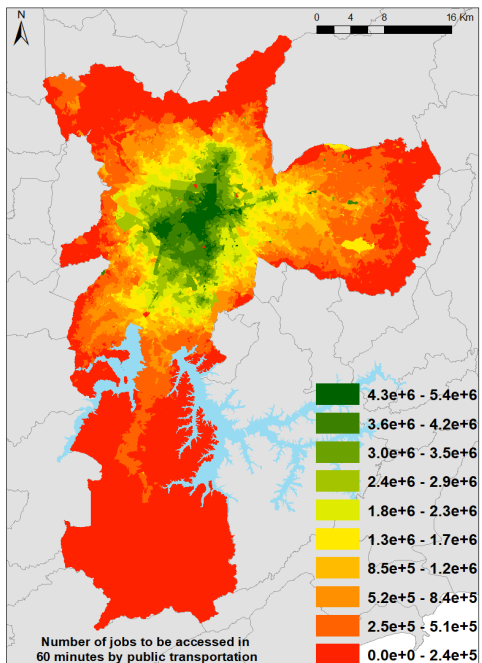
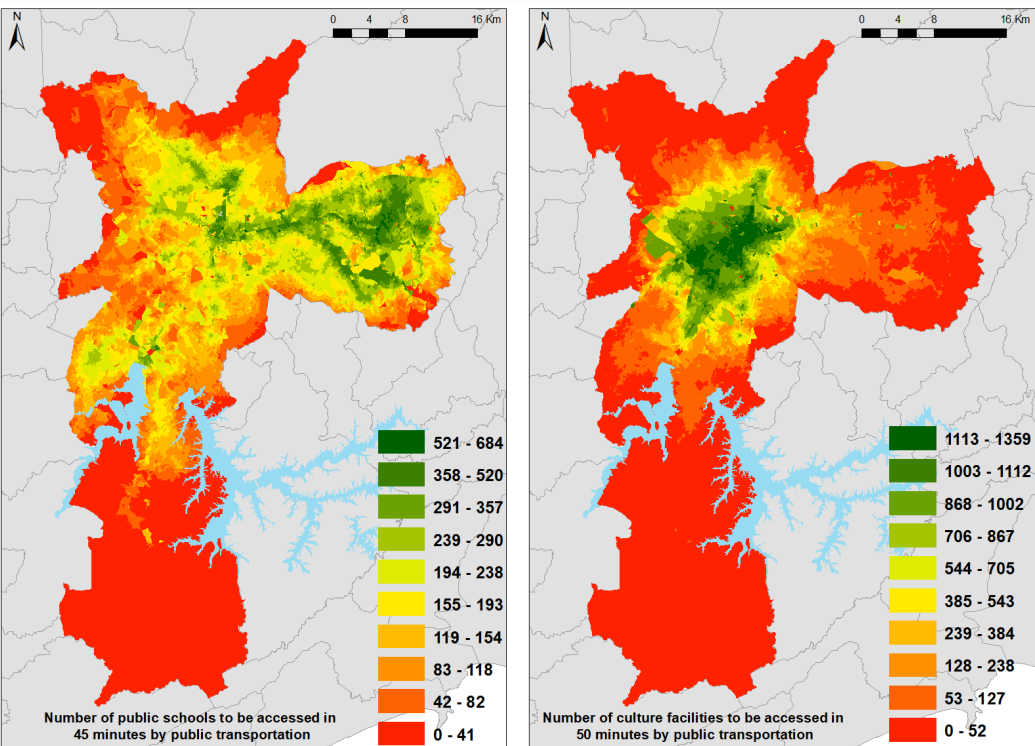


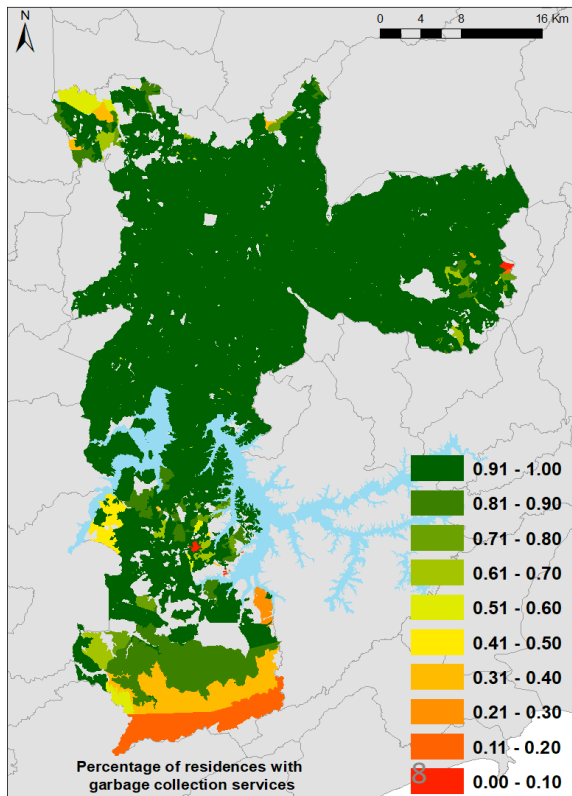
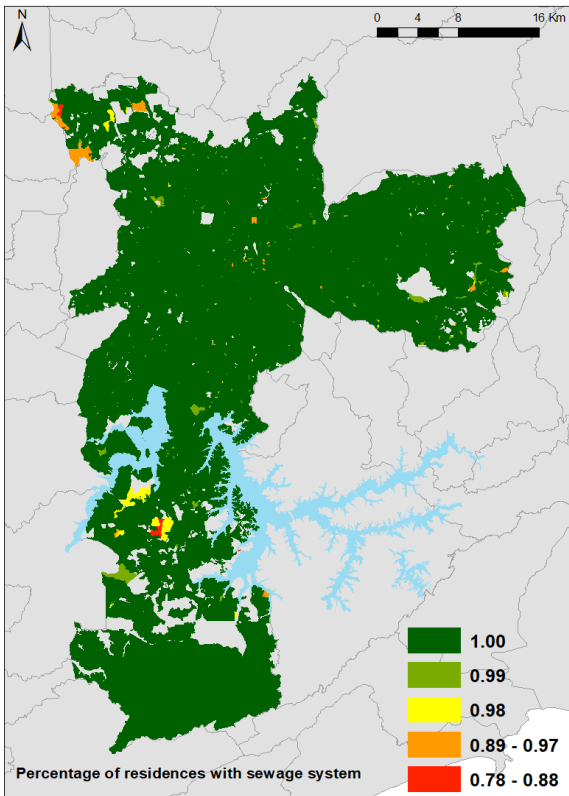
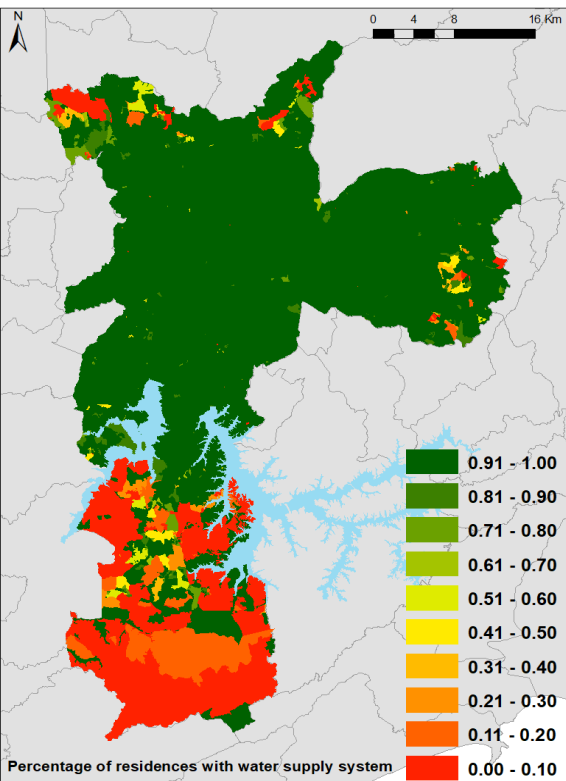
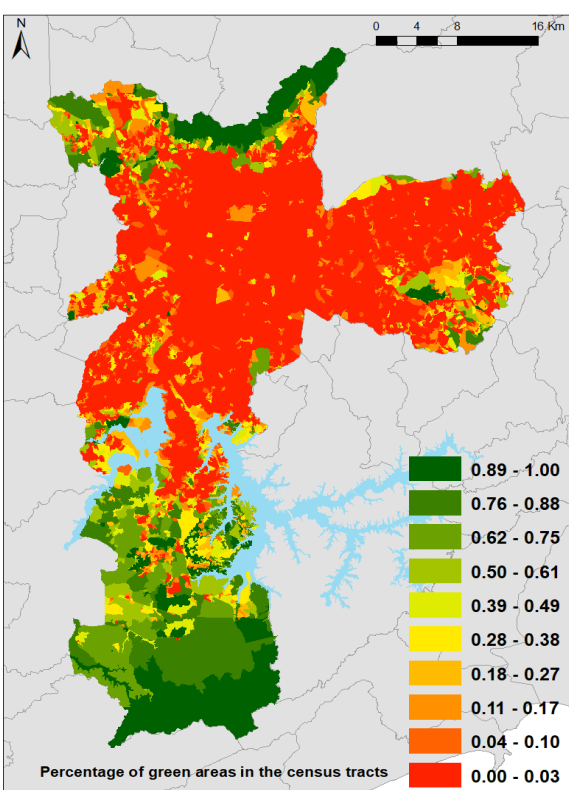
Fig. 1. General methodological framework.



Documents analyzed	Description	Year
São Paulo Housing Plan	Federal Law (Nº11124) requires municipalities to be allotted financial resources from the Federal Housing Fund. It provides strategies for local housing development initiatives related to the programs outline.	2011
São Paulo Master Plan	Federal law (Nº 10257) requires municipalities with more than 20000 inhabitants to use this plan. It guides urban growth and development at the municipality level. It manages the building potential for promoting a quality of life in all neighborhoods, especially focusing on rebalancing the peripheral region.	2014
São Paulo Municipal Sanitation Plan	This plan is required by municipal law (Nº 14934). Its aim is to manage the sewage and water system. It provides solutions to meet the demand for collecting and treating sewage as well as distributing potable water to the population. It is developed by the secretary of housing, and its projections are made for 20 years. The document should be reviewed every four years.	2011
São Paulo Mobility Plan	This plan is provided by Federal Law and by the National Urban Mobility Policy (Nº12587). It is a planning instrument that aims at managing the transportation infrastructure to distribute people and goods over the territory. It is projected for the next 15 years and involves the municipality, via the Secretariat of Transportation and by traffic and transit public companies.	2015



Category	Indicator description	Data	Metadata	
			Source	Year
Garbage collection system	Percentage of residences with garbage collection services	Residences with garbage collection services/Total residences in the census tract	Census (Brazilian Institute of Geography and Statistics) (IBGE)	2010
Water supply	Percentage of residences with a water supply system	Residences with a water supply system/Total residences in the census tract	Census (Brazilian Institute of Geography and Statistics) (IBGE)	2010
Sewage system	Percentage of residences with a sewage system	Residences with a sewage system/Total residences in the census tract	Census (Brazilian Institute of Geography and Statistics) (IBGE)	2010
Green areas	Percentage of green areas in the census tracts	Fragments of the Atlantic rainforest/Total area of each census tract	Municipal Secretariat for the Environment/Census (Brazilian Institute of Geography and Statistics) (IBGE)	2016



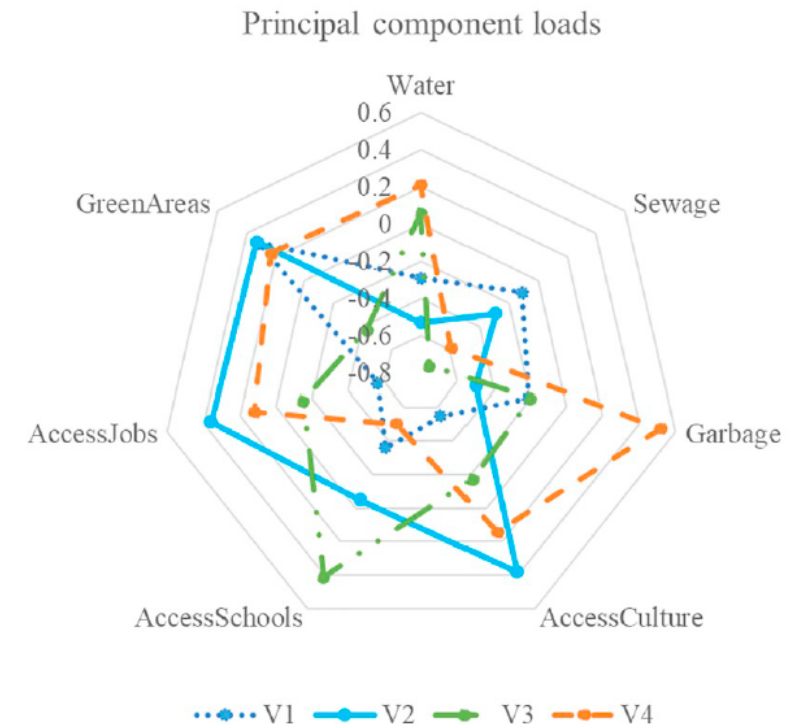
Composição do índice

- Análise multivariada: identificação de variável correlacionadas

Correlation matrix							
	Water	Sewage	Garbage	Accessibility to culture	Accessibility to public schools	Accessibility to jobs	Green areas
Water	1	0.15	0.38	0.09	0.19	0.11	-0.33
Sewage		1	0.15	0.03	0.03	0.04	-0.06
Garbage			1	0.05	0.08	0.06	-0.18
Accessibility to culture				1	0.27	0.96	-0.15
Accessibility to public schools					1	0.3	-0.27
Accessibility to jobs						1	-0.18
Green areas							1

- Ponderação e agregação: Análise de Componentes Principais

$$Index = 3.32 * V1 + 1.53 * V2 + 0.99 * V3 + 0.85 * V4$$



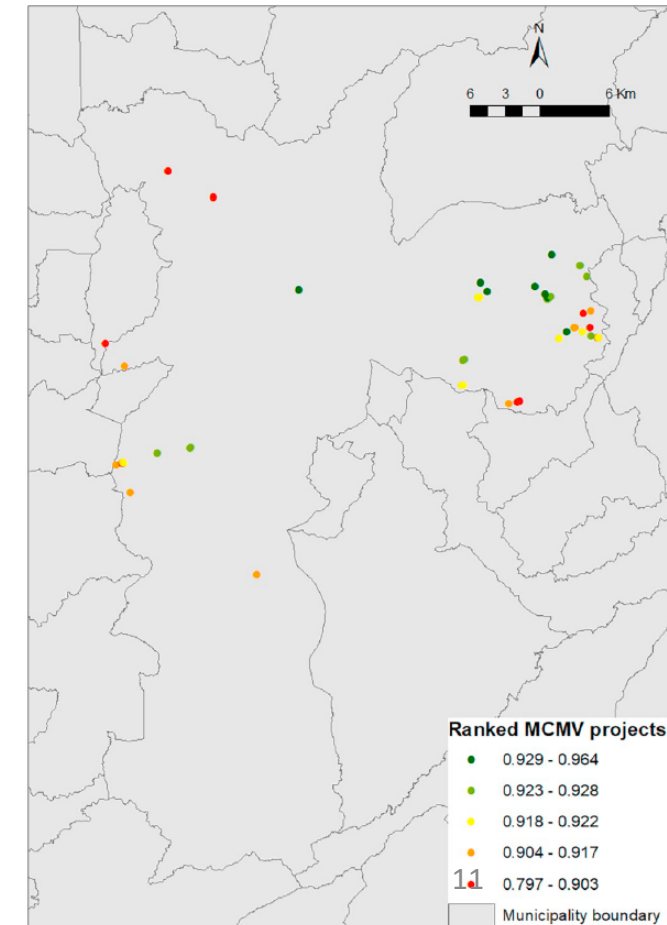
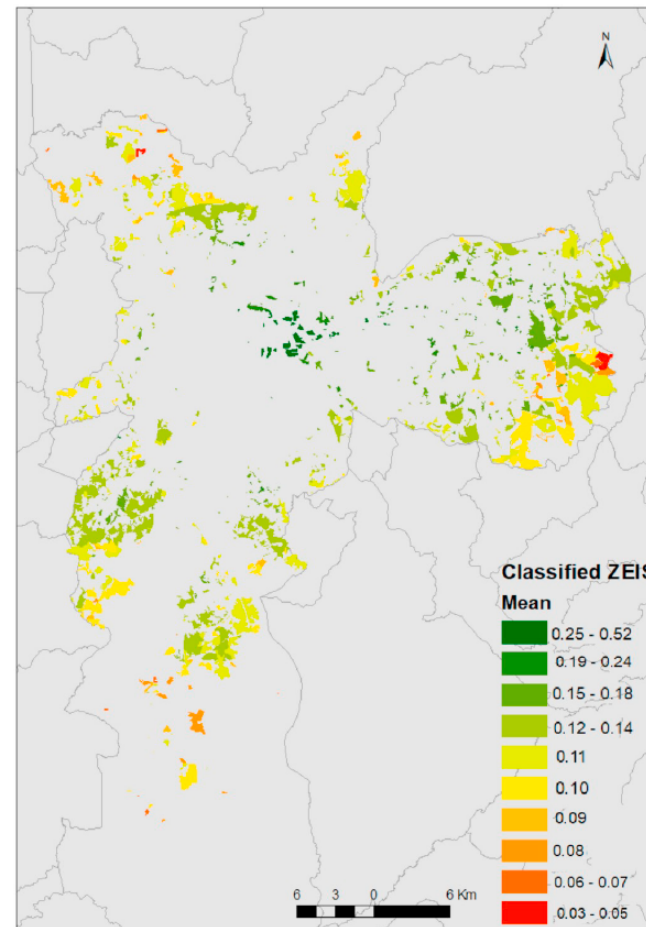
Potencialidades e limitações

Aplicações

Limitações

Aplicações

- Análise em nível estratégico (*ex-ante*): subsidiar a escolha locacional de empreendimentos
- Monitoramento (*ex-post*): avaliação de projetos já construídos para avaliação de políticas, planos e programas já implementados



Limitações

- As datas das informações geográficas são de **datas** aproximadas: dificuldades na compatibilização das informações
- Falta da avaliação da **qualidade, demanda e oferta dos serviços** nos indicadores de **acessibilidade**
- Outras informações como as **características urbanísticas dos projetos** já implementados do **MCMV** poderia deixar a análise mais abrangente
- **Outras** formas de **ponderação e agregação** podem ser testadas

Obrigada!

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