



## Barrier Effect in a Medium-Sized Brazilian City: An Exploratory Analysis Using Decision Trees and Random Forests

### What are the outcomes you expect from publishing Open Access research on this topic?

We expect that the study will be widely disseminated and accessed, so other researchers can apply the proposed method in other Brazilian cities or elsewhere. If several studies are conducted in cities in the same population range of the Brazilian medium-sized cities, we may be able to confirm the existing patterns of barrier effect for this group of municipalities.

### Which specific measures are needed to improve mobility in Brazilian urban areas, and what would be the impact on the communities that suffer the most from the current issue?

Some mitigating measures that can be implemented on the roads where the barrier effect is observed are: decrease in the speed of motorized traffic, implementation of elevated crossings and traffic lights for pedestrians, reduction of lanes for motorized vehicles, implementation of cycle lanes, diversion of vehicular traffic to roads further away from the urban center, among others. Briefly, we believe this can create a transport system that prioritizes active transport. The main impact is to improve the quality of active travel, promoting equitable access to opportunities.

This journal sponsored the APC of “Barrier Effect in a Medium-Sized Brazilian City: An Exploratory Analysis Using Decision Trees and Random Forests”

## Impact of SDG 11 in MDPI publications

107 papers mention “SDG 11”, “Sustainable Development 11” or “sustainable cities and communities” in MDPI publications between 2015-2022.

By extending the search to sustainable cities and communities related keywords, we find over 8’000 papers were published in the same period in MDPI.



---

Publishing Open-Access research on the sustainable development of cities and communities is an important way to support policy makers and the population in general to make informed decisions based on scientific facts.

The Summary for Policymakers published by the Intergovernmental Panel on Climate Change (IPCC)<sup>1</sup> in 2022 mentions the impact of climate change in the urban environment, which affects human health and natural systems:

“In urban settings, observed climate change has caused impacts on human health, livelihoods and key infrastructure (high confidence). Multiple climate and non-climate hazards impact cities, settlements and infrastructure and sometimes coincide, magnifying damage (high confidence). Hot extremes including heatwaves have intensified in cities (high confidence), where they have also aggravated air pollution events (medium confidence) and limited functioning of key infrastructure (high confidence). Observed impacts are concentrated amongst the economically and socially marginalized urban residents, e.g., in informal settlements (high confidence).”

Populations living in urban settings suffer with heat waves and air pollution, which is aggravated by the intense use of motorized vehicles in cities. Improving sustainable mobility in urban areas is possible and, as shown by de Jesus and da Silva<sup>2</sup>, mitigating measures can be implemented to incentivize active mobility.

<sup>1</sup> Summary for Policymakers. IPCC, 2022. Available at: [www.ipcc.ch/report/ar6/wg2/downloads/report/IPCC\\_AR6\\_WGII\\_SummaryForPolicymakers.pdf](http://www.ipcc.ch/report/ar6/wg2/downloads/report/IPCC_AR6_WGII_SummaryForPolicymakers.pdf) (accessed on 28.09.2022)

<sup>2</sup> de Jesus, M. C. R.; da Silva, A. N. R. Barrier Effect in a Medium-Sized Brazilian City: An Exploratory Analysis Using Decision Trees and Random Forests, *Sustainability*, 2022, 14(10), 6309

## Some Sustainable Practices At Our Offices Around The Globe



### Globally

The MDPI Sustainability Foundation and the MDPI Journal *Sustainability* support researchers who contribute to regional and global efforts towards a sustainable world by offering two awards:

#### The World Sustainability Award

A prize money of USD 100'000, entirely funded by the MDPI Sustainability Foundation

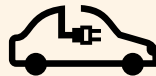
#### The Emerging Sustainability Leader Award

A prize money of USD 20'000 funded by the MDPI Journal *Sustainability*



### Basel

- Employees can use the company's electric bicycle to move between offices
- Only a handful of car parking spaces are available, which promotes the commuting by public transport. MDPI Basel is ideally located close to public transport stops and just 15 min walk from the main train station
- Sustainable choices  
Employees use a non-profit lunch card that uses the profits to cover costs and to make investments for the benefit of the affiliated catering businesses



### Kraków

Our Krakow office is located in an outstanding-level BREEAM certified building with easy access to public transport and electrical car charging stations inside and outside of the building.



### Tokyo

**Office de Yasai (Vegetable in the office) project**  
The Tokyo Office receives a regular meat-free, vegetable-based menu once a week to promote a healthier and more conscious diet.