Abridged CV
Last time updated: Jun, 2023

Rafael H. M. Pereira

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EDUCATION

2013-18  PhD in Geography and the Environment, Oxford University, St. Edmund Hall, UK
Thesis title: Distributive justice and transportation equity: inequality in accessibility in Rio de Janeiro
Advisors: Tim Schwanen and David Banister
Examiners: Bert van We, Nihan Akyelken

2006-08  Masters in Demography
State University of Campinas (Unicamp), Brazil
Thesis title: Socio-spatial structure of urban space and commuting patterns [PORT]
Advisor: Daniel Hogan
Examiners: Luciana Correa do Lago, José Marcos Pinto da Cunha

2002-06  B.S. in Sociology
University of Brasilia (UnB), Brazil
Advisor: Brasilmar Nunes

PROFESSIONAL APPOINTMENTS

2023 - present  Head of Data Science and Modeling
Department of Data Science and Information Technology
Ipea – Institute for Applied Economic Research

2023 - present  Head of Data Science and Modeling
Department of Data Science and Information Technology
Ipea – Institute for Applied Economic Research

2017-2022  Head of Spatial Data Science
Department of Regional, Urban and Environmental Studies and Policies
Ipea – Institute for Applied Economic Research

2009-2013  Researcher
Ipea – Institute for Applied Economic Research

2008-2009  Research Assistant
Ipea – Institute for Applied Economic Research
2006-2008 Research Assistant
Population Studies Centre (NEPO/Unicamp)

2005-2006 Trainee
Labor Prosecution Ministry (MPT), Affirmative Action Program

2003-2005 President
Junior Consultancy on Social Science Research (SOCIUS)

PUBLICATIONS

Google Scholar: Citations: 6,681 | h-index: 31 | https://scholar.google.com.br/citations?user=dbRivsEAAAAJ

Peer-reviewed Papers

2023 A time interval metric for cumulative opportunity accessibility. Applied Geography. Joint with D.Tomasiello, D. Herszenhut, J.Oliveira, C.Braga

2023 Evaluating the impact of public transport travel time inaccuracy and variability on socio-spatial inequalities in accessibility. Journal of Transport Geography. Joint with K.Braga and C.Loureiro.

2023 Estimating public transport emissions from General Transit Feed Specification data. Transportation Research Part D: Transport and Environment. Joint with J.Bazzo and P.Andrade.

2023 Impact of network centrality and income on slowing infection spread after outbreaks. Applied Network Science. Joint with S.Yücel, P.Peixoto and C.Camargo.

2022 Exploring the time geography of public transport networks with the gtfs2gps package. Journal of Geographical Systems. Joint with P.Andrade and J.Bazzo.

2022 The impact of transit monetary costs on transport inequality. Journal of Transport Geography. Joint with D.Herszenhut, L.Portugal and M.Sousa.

2022 Improving future travel demand projections: a pathway with an open science interdisciplinary approach. Progress in Energy. Joint with Sonia Yeh, Jorge Gil et al.

2022 The impact of COVID-19 on air passenger demand and CO2 emissions in Brazil. Energy Policy. Joint with J.Bazzo and K.Braga.

2022 Spatial and temporal fluctuations in COVID-19 fatality rates in Brazilian hospitals. Nature Medicine. Joint with A. Brizzi, C.Whittaker, L.Servo et al.

2022 SARS-CoV-2 antibody dynamics in blood donors and COVID-19 epidemiology in eight Brazilian state capitals: A serial cross-sectional study. eLife. Joint with C.Prete, T. Salomon et al.
2022 Predicting SARS-CoV-2 Variant Spread in a Completely Seropositive Population Using Semi-Quantitative Antibody Measurements in Blood Donors. *Vaccines*. Joint with L.Buss, C.Prete, T. Salomon et al.

2021 Urban access across the globe: an international comparison of different transport modes. *npj Urban Sustainability*. Joint with H.Wu, D.Levison et al.

2021 What are we missing when we measure accessibility? Comparing calculated and self-reported accounts among older people. *Journal of Transport Geography*. Joint with J.Ryan

2021 Higher risk of death from COVID-19 in low-income and non-White populations of São Paulo, Brazil. *BMJ Global Health*. Joint with S. Li, C. Prete et al.

2021 Genomics and epidemiology of the P.1 SARS-CoV-2 lineage in Manaus, Brazil. *Science*. Joint with N. Faria, E. Sabino et al.

2021 Geographic access to COVID-19 healthcare in Brazil using a balanced float catchment area approach. *Social Science & Medicine*. Joint with K. Braga, A. Paez et al.

2021 r5r: Rapid Realistic Routing on Multimodal Transport Networks with R⁵ in R. *Findings*. Joint with M. Saraiva, D. Herszenhut, C. Braga and M. Conway.

2021 Highways concessions and road safety: Evidence from Brazil. *Research in Transportation Economics*. Joint with P. Alves and L. Emanuel.

2021 Dataset on SARS-CoV-2 non-pharmaceutical interventions in Brazilian municipalities. *Scientific Data*. Joint with A. de Souza Santos, D. Candido et al.

2021 Tracking the emergence of disparities in the subnational spread of COVID-19 in Brazil using an online application for real-time data visualisation: a longitudinal analysis. *The Lancet Regional Health - Americas*. Joint with P. Mee, O. Brady et al.

2021 Resurgence of COVID-19 in Manaus, Brazil, despite high seroprevalence. *The Lancet*. Joint with E. Sabino, L. Buss, N. Faria, et al.

2021 Three-quarters attack rate of SARS-CoV-2 in the Brazilian Amazon during a largely unmitigated epidemic. *Science*. Joint with L. Buss, E. Sabino, N. Faria, et al.

2020 Disparities in travel times between car and transit: Spatiotemporal patterns in cities. *Scientific Reports*. Joint with Y. Liao, J. Gil, S. Yeh and V. Verendel

2020 Analyzing the variability of public transit accessibility estimates using GPS data. *Transportes*. Joint with C.K. Braga, and L.F. Loureiro [In Portuguese]

2020 Evolution and epidemic spread of SARS-CoV-2 in Brazil. *Science*. Joint with D. Candido, E. Sabino, N. Faria, et al.
2020 Epidemiological and clinical characteristics of the COVID-19 epidemic in Brazil. *Nature Human Behavior*. Joint with W. de Souza, E. Sabino, N. Faria, et al.

2020 SARS-CoV-2 seroprevalence and risk factors among oligo/asymptomatic healthcare workers (HCW): estimating the impact of community transmission. *Clinical Infectious Diseases*. Joint with S. Costa, L. Buss, E. Sabino, et al.

2019 Distributional effects of transport policies on inequalities in access to opportunities in Rio de Janeiro. *Journal of Transport and Land Use*. Joint with T. Schwanen, D. Banister, and N. Wessel

2019 Future accessibility impacts of transport policy scenarios: Equity and sensitivity to travel time thresholds for Bus Rapid Transit expansion in Rio de Janeiro. *Journal of Transport Geography*

2019 Right to the city and human mobility transition: The case of São Paulo. *Cities*. Joint with T. de Sá, P. Edwards and C. Monteiro

2018 Future access to essential services in a growing smart city: The case of Surrey, British Columbia. *Computers, Environment and Urban Systems*. Joint with J. Mayaud, M. Tran and R. Nuttall

2018 Transport legacy of mega-events and the redistribution of accessibility to urban destinations. *Cities*

2017 Distributive justice and equity in transportation. *Transport Reviews*. Joint with T. Schwanen and D. Banister

2016 Socioeconomic and spatial differences in active travel in Brazil. *Revista de Saude Publica*. Joint with T. de Sá, A. Duran and C. Monteiro

2016 Mortality differentials according to schooling in Brazilian adults in 2010, 2010. *Cadernos de Saude Publica*. Joint with L. Emiliano and F. Freire

2015 Population aging, fare concessions on public transport and its effects on transport fares in São Paulo Metropolitan Area. *Revista Brasileira de Estudos de População*, joint with C. Carvalho, P. Souza and A. Camarano [In Portuguese]

2014 Household expenditure on urban transport in Brazil, 2003 and 2009. *Revista dos Transportes Públicos*, joint with C. Carvalho [In Portuguese]

2014 A demographic projection of engineering labor force in Brazil through 2020. *Revista Brasileira de Estudos de População*, joint with P. Nascimento and T. Araujo [In Portuguese]

2012 Urban Centrality: A Simple Index. *Geographical Analysis*, joint with V. Nalin, L. Monasterio and P. Albuquerque

2012 The effects of income and fare variation on the demand for bus transit services in Brazil. *Transportes*, joint with C. Carvalho [In Portuguese]

2010 The stigma of living far away from the city: Rethinking the consensus on dormitory towns. *Cadernos Metrópole (PUCSP)*, joint with R. Ojima and E. Marandola [In Portuguese]
2007 Defining Dormitory towns with commuting data: Sociodemographic characterization and new spatial
dynamics in Brazilian Urban Agglomerations. *Cadernos IPPUR/UFRI*, joint with R. Ojima and R. Siva
*[In Portuguese]*

**Books authored**

2023 *Introduction to Urban Accessibility: a practical guide in R*. Brasília: Instituto de Pesquisa Econômica
Aplicada, Co-authored with D. Herszenhut.

2023 *Introdução à acessibilidade urbana um guia prático em R*. Brasília: Instituto de Pesquisa Econômica
Aplicada, Co-authored with D. Herszenhut.

**Books Edited**

2021 *Social Issues in Transport Planning*. (Vol. 8 of the Advances in Transport Policy and Planning organized
by Bert van Wee). Elsevier., Co-edited with G. Boisjoly

2011 *Urban-Regional Dynamics: Urban Network and its Interfaces*. Ed. 1. ed. Brasília: Instituto de Pesquisa
Econômica Aplicada, V.1. 490p. Co-edited with B. Furtado *[In Portuguese]*

**Book Chapters**

2021 *Transportation Equity* (with A. Karner). In R. Vickerman (Ed.), International Encyclopedia of
Transportation (2021). 1st Edition, Elsevier.

2021 *Preface: Social issues in transport planning* (with G. Boisjoly). In R. H. M. Pereira & G. Boisjoly
(Editors), *Social Issues in Transport Planning* (Advances in Transport Policy and Planning Vol. 8).
Elsevier.

2021 *Mobilidade por aplicativo no Brasil: características e padrões de consumo* (with L. Warwar). In V.
Callil & D. Costanzo, *Mobilidade por aplicativo: Estudos em cidades brasileiras*. 1st edition, Cebrap.

2020 *Transport Legacy of Mega-Events and Inequalities in Access to Opportunities in Rio de Janeiro*, in
*Evaluating the Local Impacts of the Rio Olympics*, Edited by Marcelo Neri. Routledge.

2013 The spatial distribution of skilled labor force in Brazil (with A. Maciente and P. Nascimento) in *Brasil
em Desenvolvimento 2013 - Estado, Planejamento e Políticas Públicas*, Edited by Boueri and Costa.
Ipea. V.2 p.421-440 *[in Portuguese]*

2013 Revisiting the delimitation of metropolitan boundaries in Brazil (with M.L. Castello Branco and V.
Nadalin) in *Território metropolitano, políticas municipais: por soluções conjuntas de problemas*
urbanos no âmbito metropolitano, edited by Furtado, Krause and França. Ipea. V.1 p.115-154 (in Portuguese)

2012 Current Situation and Prospects of the Federal Program for Supporting Municipal Urban Management (with Costa, Galindo and Balbim) in Federalismo à Brasileira: questões para discussão, edited by Linhares, Mendes and Lassance. Ipea. V.8, p.59-84 (in Portuguese)

2011 Conceptual basis for the Brazilian urban network: a literature review (with C. Egler, Mendes and Furtado) in Urban-Regional Dynamics: Urban Network and its Interfaces, edited by Pereira and Furtado. Ipea. V.1 p.25-46 (in Portuguese)

2011 Urban network studies and guidance for planning: public and private sectors perceptions (with Matteo) in Urban-Regional Dynamics: Urban Network and its Interfaces, edited by Pereira and Furtado. Ipea. V.1 p.47-60 (in Portuguese)

2011 Commuting: a typology proposal (with Herrero) in Estudos demográficos na Argentina e Brasil: resultados de cooperação entre estudantes e docentes da Unicamp e UNC. Campinas, edited by Aidar and Pelaez. SPU/AR and CAPES/BR. V.1, p.106-127 (in Portuguese)

2010 Urban mobility in Brazil (with Carvalho, Vasconcellos, Galindo and Neto) in Infraestrutura Social e Urbana no Brasil: subsídios para uma agenda de pesquisa e formulação de políticas públicas, edited by M. Morais and M. Costa. Ipea. V.2, p.549-592 (in Portuguese)

2009 Brazilian Urban Policies and the Federal Constitution of 1988 (with Morais, Rego, Carvalho Jr and Araujo) in A Constituição Brasileira de 1988 Revisitada: Recuperação Histórica e Desafios Atuais das Políticas Públicas nas Áreas Regional, Urbana e Ambiental, edited by Cardoso Jr., Castro and Motta. Ipea. V.2, p.117-158 (in Portuguese)

2009 Recent performance of federal programs for public transport and urban mobility (with Barros, Morais and Rego) in Brasil em desenvolvimento: Estado, planejamento e políticas públicas, edited by Cardoso Jr. Ipea. V.2, p.451-469 (in Portuguese)

SOFTWARE (Total downloads)

- **r5r**: Rapid realistic routing on multimodal transport networks with R5 – [R package](https://CRAN.R-project.org/package=r5r) (158K)
- **r5py**: Rapid Realistic Routing with R5 in Python – [Python package](https://pypi.org/project/r5py/) (2K)
- **aopdata**: Data from the Access to Opportunities Project – [R package](https://CRAN.R-project.org/package=aopdata) (10K)
- **geobr**: Download Official Spatial Data Sets of Brazil – [R and Python packages](https://github.com/geobr) (over 177K)
- **gtfs2gps**: Converting Transport Data from GTFS Format to GPS-Like Records – [R package](https://CRAN.R-project.org/package=gtfs2gps) (20K)
- **gtfs2emis**: Estimating public transport emissions from GTFS data – [R package](https://CRAN.R-project.org/package=gtfs2emis) (1.1K)
- **gtfstools**: Convenient tools to edit, manipulate and analyze GTFS transit feeds – [R package](https://CRAN.R-project.org/package=gtfstools) (13K)
- **accessibility**: Transport Accessibility Metrics – [R package](https://CRAN.R-project.org/package=accessibility) (3.5K)
• **uci**: Urban Centrality Index – R package (10)
• **flightsbr**: Download flight and airport data from Brazil – R package (5.4K)
• **esquinadobrasil**: Bot that tweets a satellite image of a random Brazilian census tract every 15 minutes – R bot (3.5K followers)

**INVITED SPEAKER** (selected)

2022  Panel discussion on Mobilizing Justice at the Nectar Conference, at Toronto University
2022  Lecture on Transportation Equity at the Mobility Network Summer School: Planning More Equitable Transportation Systems, at Toronto University
2022  Inaugural lecture, Graduate program in Transport Engineering at the Federal University of Rio de Janeiro (PET-COPPE / UFRJ), Brazil
2021  Brown Bag Seminar of the Senseable City Lab, MIT
2021  Citizens Collective, Urban Inequalities seminar series, TU Delft
2021  Research-to-Practice Transit Symposium, University of Florida Transportation Institute
2021  Inaugural lecture, Graduate program in Architecture and Urbanism at the Federal Fluminense University (UFF), Brazil
2021  Instituto de Investigación y Formación en Administración Pública (IIFAP) at the University of Cordoba, Argentina
2020  Brown Bag Seminar of the Geographic Data Science Lab at the University of Liverpool
2020  34th Annual meeting of the Brazilian Association of Transportation Research and Education (ANPET)
2020  50th Anniversary of the Graduate Program in Urban Planning at UFRGS - Brazil
2020  Annual meeting of the Brazilian National Association of Mayors (FNP) - Brazil
2019  Belo Horizonte Mobility Observatory. BHTrans transport agency.
2019  Federal University of Minas Gerais (UFGM). Economics Graduate seminars at Cedeplar
2019  33rd Annual meeting of the Brazilian Association of Transportation Research and Education (ANPET)
2019  K2, The Swedish Knowledge Centre for Public Transport, Lund - Sweden
2019  Chalmers University, Gothenburg - Sweden
2019  VREF, Mobilize Summit, Fortaleza - Brazil
2018  University College London, Socially Just Transport Doctoral Group, UK
2018  VREF PhD students and young researchers workshop, Tanzania
2018  Transmilenio S.A., 8th International Congress on Mobility and Transportation, Colombia
2018  World Bank and WRI, Transforming Transportation 2018, USA
2017  FGV University, CERI Center for Regulation and Infrastructure Studies, Brazil
2016  Lund University and K2 - The Swedish Knowledge Centre for Public Transport, Sweden
2016  University College London, Centre for Advanced Spatial Analysis (CASA), UK
2016  ITDP - The Institute for Transportation and Development Policy, Brazil
2009  Unicamp – University of Campinas, Population Studies Center, Brazil
2008  UnB – University of Brasilia, Sociology Department, Brazil
EXTERNAL SERVICE ACTIVITIES

2023-Present  Committee Member on behalf of Ipea  
National Consultative Committee on Urban Mobility  
Brazilian Federal Government  

2019-2022  Board member  
Transportation Geography Specialty Group (TGSG)  
American Association of Geographers (AAG)  

FUNDING, GRANTS AND AWARDS (selected)

- 2022 - Finalist in the 2022 ITF Decarbonising Transport Award: Research category, by the International Transport Forum (ITF/OECD).
- 2020-2022 – Th Access to Opportunities Project, funded by the Brazilian Ministry of Regional Development (R$ 1,490,963, aprox. U$ 350,000).
- 2019 - Young Researcher of the Year Award by the International Transport Forum (ITF/OECD).
- 2019 - Best thesis award by the Transportation Geography Specialty Group of the American Association of Geographers (AAG).
- 2017 - Lee Schipper Memorial Scholarship of U$8,210 conceded by the World Resources Institute (WRI) and the Volvo Research and Educational Foundations (VREF).
- 2017 - Award of best group presentation ‘Using microdata to identify capability challenges of the elderly in using public transport’. Award at the European Workshop “Bridging transport equity: a real-life lab”, organized by the Transportation Equity Analysis (TEA) Cost Action group, in Barcelona. Team: Rafael Pereira, Claire Papaix, Koos Fransen and Anders Wretstrand.
- 2017 - Travel award to go the 2017 Annual Meeting of the American Association of Geographers (AAG), conceded by the AAG Transport Geography Specialty Group.
- 2017 - Travel Conference Grant, conceded by the Oxford University Brazilian Society.
- 2016 - Best paper award of the V Oxbridge Conference on Brazilian Studies, Oxford and Cambridge Brazilian Societies.
- 2013-2017 - Capes Fellowship for PhD studies at Oxford University, UK
- 2006-2008 - Fapesp Fellowship for Master Degree at State University of Campinas (Unicamp)
- 2006-2006 - Capes visiting studentship at National University of Cordoba (UNC), Argentina
- 2003-2005 - CNPq Fellowship for undergraduate studies at University of Brasilia (UnB)

EDITORIAL ACTIVITIES

Editorial Appointments
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2023-Present  Editorial Advisory Board, *Journal of Transport Geography*

2021-Present  Editorial Advisory Board, *Urban Findings*

2022-Present  Editorial Board, *Planejamento e Políticas Públicas (PPP)*

**Special Issues**

2023  Tenkanen, H. and Pereira, R. H. M. and Arcaute, E. and Gonzalez, M. (2023). Advances in Spatial and Transport Network Analysis, in *Environment and Planning B: Urban Analytics and City*.

**Forthcoming**  McKenzie, G. and Calafiore, A. and Tenkanen, H. and Kim, E. and Pereira, R. H. M. Environmentally and socially sustainable mobility, in *Computers, Environment and Urban Systems*. (open call for papers)

**ACADEMIC REVIEW ACTIVITIES**

- Journal of Transport Geography (13)
- PPP – Planejamento e Políticas Públicas, Brazil (6)
- Transport Reviews (5)
- Transport Research Part A: Policy and Practice (4)
- Case Studies on Transport Policy (4)
- Transportation Research Record (3)
- Cities (3)
- Mobilities (2)
- Transport Policy (2)
- Journal of Transport and Land Use (2)
- Journal of Geographical Systems (2)
- REBEP – Revista Brasileira de Estudos de População, Brazil (2)
- Ecological indicators (1)
- Environment and Planning A: Economy and Space (1)
- Environment and Planning B: Urban Analytics and City Science (1)
- Geographical Analysis (1)
- Journal of Planning Literature (1)
- Journal of Transport & Health (1)
- Sustainable Cities and Society (1)
- Transport Findings (1)
- Transportes (1)
STUDENT SUPERVISION

**PhD Students**
- Kauê Braga (*ongoing*, Transportation Engineering, Federal University of Fortaleza)
- Luiza Silva (*ongoing*, Economics, Federal University of Fortaleza)
- André Turbay (2023, Urban Planning, PUC Paraná)

**Master Students**
- João Lucas (*ongoing*, Transportation Engineering, Federal University of Fortaleza)
- Ruan Amaral (*ongoing*, Transportation Engineering, Federal University of Pernanbuco)
- Daniel Herszenhut (2021, Transportation Engineering, Federal University of Rio de Janeiro)
- Kauê Braga (2020, Transportation Engineering, Federal University of Fortaleza)

AFFILIATIONS

| Year | Affiliation |
|------|-------------|
| 2019- | Latin American branch of the International Network for Transport and Accessibility in Low Income Communities (INTALInC LAC) |
| 2017- | Associate Postgrad, Oxford Urbanists Society |
| 2015- | Associate Postgrad, Oxford Program for the Future of Cities |
| 2015- | Member, American Association of Geographers (AAG) |
| 2014- | Member, Royal Geographical Society (RGS-IBG) |
| 2010- | Member, World Conference on Transport Research Society (WCTRS) |
| 2009- | Member, Research ‘Group Morphological Dimensions of the Urbanization Process’, Research Group led by Prof. Frederico Holanda (University of Brasilia) |
| 2008- | Member, Brazilian Association of Population Studies (ABEP) |