

CONTACT
INFORMATION

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University of Concepción
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RESEARCH
INTERESTS
EDUCATION

Public Transport, Transport Economics, Optimization, Cognitive Science, Mathematical Psychology
University College London (UCL), London, UK

MSc in Cognitive and Decision Sciences, 2017 (Distinction, *summa cum laude*)

- Thesis: A psychological approach to understanding decisions about time in public transport. Evidence from lab experiments in London, UK and Santiago, Chile [1]
- Advisors: Prof. Nigel Harvey, [1] Dr. Paula Parpart [2] and Prof. Juan Carlos Muñoz [3]

Pontifical Catholic University of Chile (PUC), Santiago, Chile

MSc in Transportation Engineering, 2015 (Maximum Distinction, *summa cum laude*) [1]

- Thesis: What is behind fare evasion in public transport? An econometric approach [1]
- Advisors: Prof. Juan de Dios Ortúzar [2] and Patricia Galilea [3]

BSc in Industrial Engineering with Diploma in Transportation, 2013 (Maximum Distinction) [1]

Minor in Social Psychology, 2013 [1]

Online Courses

Introduction to Computer Science and Programming Using Python, MITx [1]

ACADEMIC
EXPERIENCE

University of Concepción (UdeC), Department of Civil Engineering, Concepción

Lecturer

August, 2018 - July, 2019

Preparing lectures, grading assignments and examinations together with Prof. Juan Antonio Carrasco [1] on the following courses:

- Optimization [1]
- Fundamentals of Transport Engineering [1]
- Transportation Planning

Pontifical Catholic University of Chile (PUC), Santiago, Chile

Teaching Assistant

2009 - 2014

Grading assignments and examinations, and preparing lectures on the following courses:

Department of Transport Engineering and Logistics [1] [2]

- Planning for Sustainable Transport, Citizens and the City (2' 2014). Lecturer: Lake Sagaris
- Transport Demand Models (2' 2013). Lecturer: Luis Rizzi
- Econometric Models in Engineering (2' 2013). Lecturer: Juan de Dios Ortúzar
- Topics in Econometrics (1' 2013, 1' 2012). Lecturer: Louis de Grange
- Transportation System Engineering (2' 2012). Lecturer: Ricardo Giesen

Department of Mathematics [1] [2]

- Calculus 1 (1' 2013). Lecturer: Ruben Preiss
- Algebra (1' 2009). Lecturer: Herminia Ochsenius

Research Assistant

2011 - 2013

Collaboration in research projects on topics of high relevance to public policy in Chile

- Fare evasion in public transport, Department of Transportation Engineering, 2013

- Social mobility and equity, Department of Economics, 2012
- Socioeconomic school segregation, Department of Industrial Engineering, 2011

University of California, Davis, Department of Environmental Science and Policy, Davis, USA

Visiting Scholar [1]

January, 2014 - May, 2014

- Advisor: Prof. Susan Handy, chair of the Department of Environmental Science and Policy [1]
- Courses Audited: *Transportation Survey Methods*, *Transportation Policy and Planning* and *Statistical Rethinking*
- Speaker in seminars at UC Davis (3) and UC Berkeley (1) on fare evasion in public transport
- Sponsored by the School of Engineering at PUC, Centre for Sustainable Urban Development (CEDEUS) and Complex Engineering Systems Institute (ISCI)

ISI PUBLICATIONS **Guarda, P.**, Velásquez J. M., Tun H. T., Chen, X. and Zhong, G., 2017. Comparing Chinese and non-Chinese Bus Rapid Transit: Evidence from evaluation of global BRT based on BRT design indicators. *Transportation Research Record: Journal of the Transportation Research Board* 2647, 118-126. <http://dx.doi.org/10.3141/2647-14>

Guarda, P., Galilea, P., Handy, S., Muñoz, J.C. and Ortúzar, J. de D., 2016. Decreasing fare evasion without fines? A microeconomic analysis. *Research in Transportation Economics* 59, 151-158. <http://dx.doi.org/10.1016/j.retrec.2016.06.001>

Guarda, P., Galilea, P., Paget-Seekins, L. and Ortúzar, J. de D., 2016. What is behind fare evasion in urban bus systems? An econometric approach. *Transportation Research Part A: Policy and Practice* 20, 55-71. <http://dx.doi.org/10.1016/j.tra.2015.10.008>

BOOK CHAPTERS AND REPORTS Velásquez J. M., Tun H. T., Hidalgo, D., Ramos, C., **Guarda, P.**, Chen, X. and Zhong, G., 2017. Bus Rapid Transit in China: A Comparison of Design Features with International Systems. Ross Center for Sustainable Cities, World Resources Institute, Washington D.C., USA. [1]

Bolt, V., Cardenas, E. and **Guarda, P.**, 2012. Propuestas referidas al mejoramiento de las condiciones para la movilidad social en el contexto actual del país. In: Niehaus, M. and Germani, C. (Eds.), *La Escuela que queremos, la universidad que deseamos y el país que anhelamos*, pp. 38-48, ISBN: 978-956-351-649-4 [1]

PROFESSIONAL EXPERIENCE

Inter-American Development Bank, Santiago, Chile [1]

External Consultant (Part-Time)

February, 2018 - July, 2018

- Supervisor: Isabel Granada, Transport Specialist
- Responsibilities: Research on fare evasion and universal accessibility in public transport systems

Centre of Excellence for Bus Rapid Transit (BRT-CoE), Santiago, Chile [1]

Research Associate (Part-Time)

November, 2017 - August, 2018

- Responsibilities: Preparation of three journal articles based on my MSc project at UCL. [1].

World Resources Institute, Ross Centre for Sustainable Cities, Washington D.C., USA [1]

External Consultant

August, 2016 - Aug, 2017

- Responsibilities: (i) Recruitment and onboarding of a new researcher from PUC in the project [Next Generation of BRT in China](#). (ii) Preparation and estimation of a set of indicators to measure different quality aspects of the data published in [BRTData.org](#). (iii) Preparation of two journal articles on bus rapid transit.

Transport Research Intern

February, 2016 - July, 2016

- Supervisor: Juan M. Velásquez, Associate in the Research and Practice Department (EMBARQ)

- Responsibilities: Conducting research and data analysis as part of a project with the Inter-American Development Bank and the Global Environment Facility to promote low carbon technology in public bus systems in Latin America and the Caribbean. I also continued collaborating as a researcher in the project [Next Generation of BRT in China](#), with the BRT-CoE

Centre of Excellence for Bus Rapid Transit (BRT-CoE), Santiago, Chile [1]

Research Associate (Part-Time)

March, 2015 - January, 2016

Part-time researcher in the project [Next Generation of BRT in China](#). Teams from the BRT-CoE and the China Urban Transport Research Centre (CUSTReC) conducted the following activities:

- Study tours: My team visited Beijing in July 2015 and a team from CUSTReC visited Brazil and Chile in December 2015 to share experiences about BRT
- Technical reports: (i) Evaluation of social and environmental benefits of BRT, (ii) International benchmarking of BRT and (iii) Review of the technical standards for the design of BRT in China
- Joint research paper: Identification of the best international practices and the main factors that impact the performance of Chinese BRT systems

Centre for Sustainable Urban Development (CEDEUS), Santiago, Chile [1]

Research Associate (Part-Time)

April, 2015 - January, 2016

- Supervisor: Juan Carlos Muñoz, Deputy Director at CEDEUS.
- Responsibilities: Conducting research on (i) fare evasion in public transport, (ii) strategies to allocate demand-side or supply-side subsidies in public transport, (iii) benefits of implementing monthly passes and (iv) the analysis of performance indicators in Metro systems

Collaborator of Transit UC

June, 2015 - December, 2015

Development of a model to predict fare evasion at bus stops and bus routes of Transantiago using smart card and GPS data. This tool was implemented in an existing software (created by the firm [Transit UC](#)) used by some bus private operators to improve their performance indicators (i.e. bus regularity)

CONFERENCE
PRESENTATIONS

Guarda, P., González, F., and Muñoz, J.C. A cumulative prospect theory approach to understand the impact of variability in waiting and in-vehicle times on route choice. Interdisciplinary Choice Workshop (ICW), August 7-10, 2018, Santiago, Chile [1]

Guarda, P., and Muñoz, J.C. Cross-national and gender differences in preferences for waiting and traveling in public bus systems: evidence from lab experiments in Santiago, Chile and London, UK. Interdisciplinary Choice Workshop (ICW), August 7-10, 2018, Santiago, Chile [1]

Guarda, P., Parpart, P., Harvey, N., and Muñoz, J.C. Decisions about time in public transport. 40th Annual Meeting of the Cognitive Science Society, July 25-28, 2018, Madison, WI, United States (Poster Session) [1]

Guarda, P., González, F., and Muñoz, J.C. Reference points and loss aversion as drivers of risk-aversion in decisions about time. 51st Annual Meeting of the Society for Mathematical Psychology, July 21-24, 2018, Madison, WI, United States [1]

Guarda, P., González, F., and Muñoz, J.C. A prospect theory model of route choice with context-dependent reference points. 15th International Conference on Travel Behavior Research, July 15-20, 2018, Santa Barbara, CA, United States [1]

Guarda, P., Bueno, C., Galilea P., Muñoz, J.C. and Ortúzar, J. de D. ¿Tarifas más bajas o frecuencias más altas, qué es lo que la gente quiere? Un modelo microeconómico. XVII Congreso Chileno de Ingeniería de Transporte, October 13-15, 2015, Bío-Bío, Chile

Guarda, P., Galilea, P., Paget-Seekins, L. and Ortúzar, J. de D. ¿Qué está detrás de la evasión en

el sistema de buses de transporte público? Una aproximación econométrica. XVII Congreso Chileno de Ingeniería de Transporte, October 13-15, 2015, Bío-Bío, Chile

Guarda, P., Bueno, C., Galilea P., Muñoz, J.C. and Ortúzar, J. de D. Lower bus fares or higher frequencies, what do people want? A microeconomic analysis. 4th Symposium European Association for Research in Transportation (HEART), September 9-11, 2015, Copenhagen, Denmark [1]

Guarda, P., Galilea, P., Handy, S., Muñoz, J.C. and Ortúzar, J. de D. Decreasing fare evasion without fines? A microeconomic analysis. Thredbo 14 conference on competition and ownership issues in land passenger transport, September 1-3, 2015, Santiago, Chile [1]

Guarda, P., Ortúzar, J. de D., Handy, S., Galilea P. and Muñoz, J.C. Optimal mixed strategies for dealing with fare evasion in public transport. 13th Conference on Advanced Systems in Public Transport, July 19-23, 2015, Rotterdam, The Netherlands [1]

Guarda, P. Free mass mobility for everyone? The potential of zero fare public transport. Transforming Transportation 2015, Smart Cities for Shared Prosperity, January 15-16, 2015, World Bank, Washington D.C., United States of America (Poster Session) [1]

Guarda, P., Galilea, P., Paget-Seekins, L. and Ortúzar, J. de D. What is behind fare evasion? The case of Transantiago. Transportation Research Board 94th Annual Meeting, January 11-15, 2015, Washington D.C, United States of America [1]

Guarda, P., Galilea, P., Paget-Seekins, L. and Ortúzar, J. de D. Understanding fare evasion in Santiago's public transport system. XVII Pan-American Congress of Transit, Transport and Logistics Engineering, June, 11-13, 2014, Santander, Spain

Guarda, P., Galilea, P., Paget-Seekins, L. and Ortúzar, J. de D. Understanding fare evasion in Santiago's public transport system. University of California Transportation Center Student Conference, April 17-18, 2014, Pomona, United States of America [1]

INVITED TALKS

Guarda, P., Evasión en los Sistemas de Transporte de las Ciudades de América Latina: Casos Transantiago y Transmilenio. Webinar Series Inter-American Development Bank (IDB). February 26, 2017 [1]

Velásquez, J.M. and **Guarda, P.**, Opportunities to improve bus rapid transit in China – A comparison of several BRT systems around the world. Webinar Series Bus Rapid Transit Centre of Excellence (BRT-CoE). July 20, 2016 [1] [2] [3]

Guarda, P., Understanding fare evasion in urban bus systems: Evidence from Santiago, Chile. Webinar Series Bus Rapid Transit Centre of Excellence (BRT-CoE). January 22, 2016 [1] [2] [3]

Guarda, P., Paget-Seekins, L. and Muñoz, J.C. What is behind on time performance indicators at the MBTA?. World Resources Institute (WRI). July 22, 2015, Beijing, China

Guarda, P., Galilea, P., Paget-Seekins, L. and Ortúzar, J. de D. Understanding fare evasion in Santiago's public transport system?. Department of Civil and Environmental Engineering, University of California, Berkeley. April 7, 2014, Berkeley, United States of America

PROFESIONAL SERVICE AND DEVELOPMENT

Journal Reviewer

Network and Spatial Economics (1), Research in Transportation Economics (2), Transportation Research Part A (2), Transport Reviews (1)

Trepcamp, Washington DC, United States [1]

Mentor

June 2016

Mentoring a group of 5 Mexican undergraduate students based at George Town University that were creating an innovative solution in urban logistic at Trepcamp[1].

HONORS AND
AWARDS

Becas Chile - Conicyt Master Fellowship

Sep 2016 - Aug 2017

Scholarship that covers full tuition fees and living expenses to study a Masters program abroad. [1]

Michael Beesley Award

2015

Award for the best workshop paper presented by an early career professional, 14th International Conference on Competition and Ownership in Land Passenger Transport (Thredbo 14) [1] [2] [3]

Best Research Paper in the Area of Equity and Social Mobility

2012

Research award given in a student conference organized by the School of Engineering at PUC [1]

Scholarships for Engineering Students to Study Abroad

2012

Grant given by the PUC School of Engineering for an internship abroad [1]

John Paul II Foundation Scholarship

2009 - 2013

Scholarship given annually to about 20 undergraduate students from PUC who represent the values of the institution, including social conscience, service to the community, academic excellence. [2]

COMMUNITY
ENGAGEMENT

John Paul II Foundation, Santiago, Chile

Volunteer in Nursing Home "El Buen Samaritano"

March 2010 - December 2013

Community service project aimed at accompanying the elderly at a nursing home once a week and taking care of their mental and physical health.

Volunteer in Children's Theatre Workshop

August 2009 - December 2009

Community service project helping children with low self-esteem and from low-income families. Volunteers taught children acting exercises and helped them to prepare an adaptation of a theater production performed by both children and volunteers.

School of Engineering, Pontifical Catholic University of Chile (PUC), Santiago, Chile

Student Union Coordinator

1' 2010 - 1' 2011

Organizing student activities such as policy discussion forums, recreational activities and community service that were part of the agenda of the Engineering Student's Union at PUC (CAI)

Student Delegate

March 2009 - March 2010

One of the three students elected in my class (about 500 students) to be an intermediary between the students and the School of Engineering at PUC

SKILLS

- Language: Advanced level in reading, writing and conversational English (TOEFL IBT: 97/120, IELTS Academic Test: 7.5/9) and Spanish (native). Basic proficiency in Portuguese
- Statistical Analysis Packages: R, Stata, SPSS, Tableau, Biogeme
- Simulation and Optimization Packages: Matlab, Arena, Gurobi, AMPL, Maple
- Programming: Python, C#, Java and Visual Basic
- Excellent Command of Microsoft Office: Word, Excel, Power Point, Outlook and OneNote

December 14, 2018