

Sofia Gil-Clavel
Computer and Actuarial Scientist

PhD Candidate in Demography

Interests: Computational Social Science, Demography, Computer Science

Max Planck Institute for Demographic Research
Konrad-Zuse-Str. 1, 18057
Rostock, Germany

sofiag1l.github.io
gil@demogr.mpg.de
@sof14g1l
Github: SofiaG1l

EDUCATION

PhD in Demography

Expected end date: June 2022

Use of Facebook- and Twitter-data to study older people's usage of communication technologies and immigrants' cultural integration, respectively, by combining techniques from computer science (NLP, machine learning, metaheuristics) with statistical methods (generalized linear models, survival analysis, bootstrapping).

PhD Student at the Digital and Computational Demography Laboratory. Max Planck Institute for Demographic Research (MPIDR), Germany. Sep., 2018 –.

Affiliated with the Faculty of Spatial Sciences. University of Groningen, Netherlands. Jan., 2020 –.

Supervisors:

Prof. Dr. Emilio Zagheni (MPIDR)
Prof. Dr. Clara H. Mulder (University of Groningen)

Part of the schools:

IMPRS-PHDS: International Max Planck Research School for Population, Health and Data Science Sep., 2019 –.

CANd3: Consortium on Analytics for Data-Driven Decision-Making May, 2021 –.

Research Stay

University of Groningen, Netherlands, to work with Prof. Clara Mulder. Nov. 2021-.

Master in Computer Science

Master of Science with Specialization on Computing and Industrial Mathematics. Center of Mathematics Research (CIMAT), Mexico. 2015-2017

Thesis:

Computational and Statistical Contributions to Study Internal Migration at Municipal Level: The Case of Mexico for the period 2005-2010.

Bachelor in Actuarial Science

Bachelor of Science in Actuarial Science. National Autonomous University of Mexico (UNAM), Mexico. 2009-2014

SKILLS

- **Statistical Analysis:** R, Python.
- **Programming:** Python, R, C++, VBA.
- **Text processing:** LATEX, R-Markdown, Jupyter.
- **Data visualization and exploration:** R (shiny, ggplot, plotly), Gephi.
- **Use of Application Programming Interfaces (APIs):** Facebook and Twitter
- **Languages:** Spanish (native), English (advanced), German (intermediate)

Complete list of courses attended during PhD can be found in Appendix B.

PUBLICATIONS

Peer Reviewed

Gil-Clavel, S., Zagheni, E., & Bordone, V. (2021). Close social networks among older adults: the online and offline perspectives. *Population Research and Policy Review*, 1-25. <https://link.springer.com/article/10.1007/s11113-021-09682-3>

Gil-Clavel, S., & Zagheni, E. (2019). Demographic Differentials in Facebook Usage around the World. *Proceedings of the International AAAI Conference on Web and Social Media*, 13, 647–650. Retrieved from <https://ojs.aaai.org/index.php/ICWSM/article/view/3263>

Del Fava, E., Cimentada, J., Perrotta, D., Grow, A., Rampazzo, F., **Gil-Clavel, S.,** & Zagheni, E. (2021). Differential impact of physical distancing strategies on social contacts relevant for the spread of SARS-CoV-2: evidence from a cross-national online survey, March–April 2020. *BMJ open*, 11(10), e050651.

Perrotta, D., Grow, A., Rampazzo, F., Cimentada, J., Fava, E. D., **Gil-Clavel, S.,** & Zagheni, E. (2021). Behaviors and attitudes in response to the COVID-19 pandemic: Insights from a cross-national Facebook survey. *EPJ Data Science*, 10(17), 13. <https://doi.org/10.1140/epjds/s13688-021-00270-1>

Grow, A., Perrotta, D., Fava, E. D., Cimentada, J., Rampazzo, F., **Gil-Clavel, S.,** & Zagheni, E. (2020). Addressing Public Health Emergencies via Facebook Surveys: Advantages, Challenges, and Practical Considerations. *Journal of Medical Internet Research*, 22(12), 12. <https://doi.org/10.2196/20653>

Alburez-Gutierrez, D., Zagheni, E., Aref, S., **Gil-Clavel, S.,** Grow, A., & Negraia, D. V. (2019). Demography in the Digital Era: New Data Sources for Population Research. In *Smart Statistics for Smart Applications: Book of Short Papers SIS2019* (Arbia, Giuseppe, et al.). Pearson. <https://osf.io/24jp7>

Working Papers

Grow, A., Perrotta, D., Fava, E. D., Cimentada, J., Rampazzo, F., **Gil-Clavel, S.,** Zagheni, E., Flores, R. D., Ventura, I., & Weber, I. (2021). How Reliable is Facebook's Advertising Data for Use in Social Science Research? Insights from a Cross-National Online Survey. *MPIDR Working Paper*, 43. <https://doi.org/10.4054/MPIDR-WP-2021-006>

WORK EXPERIENCE

- **National Population Council (CONAPO)** [2017-2018]
Head of the Demographic Analysis Department:
Creation of computational tools to visualize and analyze Mexican conciliation data (1950-2015) and the Mexican projected population (2016-2050). Demographic data analysis of population, deaths, births, and migration. I programmed and uploaded (Linux servers) the first version (2018) of the shiny

app to visualize these data ([link](#)). During this period, I also worked on the project presented at SOMEDE: “Estimation of the infant mortality rate in Mexico in 2015 at municipal level using numerical techniques”.

- **Center of Demographic, Urban, and Environmental Studies (CEDUA) of COLMEX** [2014-2015]
Research support:
Development of the R package “DemosR: Package for the Stochastic Population Forecast” (COLMEX internal use). Analysis and handling of big data for demographic research.

PROFESSIONAL ACTIVITIES

- Invited as discussant at the panel "Digital Traces for demographic knowledge" of the "Population Studies Association of Argentina" (AEPA) ([link](#)). October 2021.
- Invited to the roundtable Demographic Research with Web and Social Media Data at the Latin American Population Association, organized by Diego Alburez-Gutierrez. You can find the video [here](#).
- Gave a [training Workshop](#) at IUSSP Digital Demography in the Era of Big Data Pre-Workshop: *Demography Today Training* ([link](#)). June 2019.
- Organizer at the ICWSM 2019 Workshop: *Demographic Research with Web and Social Media Data* ([link](#)). June 2019.

Other Professional Activities:

- Co-launched Peer-Review Workshop at the IMPRS-PHDS. [Aug., 2020 –.]
- Elected PhD Core Representative at the IMPRS-PHDS. [Nov., 2019 –.]
- Elected PhD External Representative at the MPIDR. [Jun.,2020 – Jun.,2021]

SCHOLARSHIPS/GRANTS

- Scholarship of 10,000EUR from the Mexican National Council of Science and Technology (CONACyT) to study Computer Science at CIMAT. [2015-2017]
- Scholarship from CIMAT to participate in their “6th Summer School on Probability and Statistics”, and to work on a research project with Prof. Rogelio Ramos Quiroga, CIMAT. [July 1st to July 12th, 2013]

PRESENTATIONS AT CONFERENCES

I have presented my work at major international conferences, such as (*complete list in Appendix A*):

- IPC: International Population Conference.
- IMISCOE: International Migration, Integration and Social Cohesion in Europe.
- PAA: Population Association of America.
- ICWSM: International Conference on Web and Social Media.
- SOMEDE: Mexican Society of Demography.

Professional Memberships:

- International Union for the Scientific Study of Population (IUSSP)
- European Association for Population Studies (EAPS)
- Population Association of America (PAA)

Appendix A: Complete list of Presentations at Conferences

Sofia Gil-Clavel, André Grow, Maarten J. Bijlsma, “EU-15 Immigrants Language Integration on Twitter”. Presentation for International Population Conference (IPC). Session 193: Us vs Them: Cultural Assimilation and Anxieties in the Modern World. December 2021.

Sofia Gil-Clavel, André Grow, Maarten J. Bijlsma, “EU-15 Immigrants Language Integration on Twitter”. Presentation for Dutch Demography Day. Session: Poster Pitch. November 2021.

Sofia Gil-Clavel, “Immigrants’ Cultural Integration Patterns in Spain, Germany, and the UK: Tweets as Expressions of Context”¹. Presentation for IMISCOE General Conference. Session: Migrant Transnationalism 13. July 2021.

Sofia Gil-Clavel, “EU-15 Immigrants Language Integration on Twitter”. Poster presentation for the IMPRS-PHDS Graduate Workshop. June 2021.

Sofia Gil-Clavel, Emilio Zagheni, and Valeria Bordone, “Close Social Networks among Older Adults: The Online and Offline Perspectives”. Accepted presentation for PAA. Flash session: Social Networks, Social Support, and Health. May 2021.

Sofia Gil-Clavel, “Immigrants’ Cultural Integration Patterns in Spain, Germany, and the UK: Tweets as Expressions of Context”². Presentation for IMISCOE Spring Conference. Session: Messaging Migration on and Through Social Media. March 2021.

Sofia Gil-Clavel, Emilio Zagheni and Valeria Bordone, “Close Social Networks among Older Adults: The Online and Offline Perspectives”. Presentation for the Dutch Demography Week. Session: Families in later life. November 2020.

Sofia Gil-Clavel, Valeria Bordone and Emilio Zagheni, “Determinants of Online and Offline Close Social Networks Among Older Adults”. Accepted presentation for EPC. Session: Health and Wellbeing in a Digital World. June 2020. Cancelled due to COVID-19.

Sofia Gil-Clavel, Valeria Bordone and Emilio Zagheni, “Determinants of Online and Offline Close Social Networks Among Older Adults”. Accepted presentation for PAA. Flash session: Use of Big Data to Model Health Outcomes and Mortality. April 2020. Cancelled due to COVID-19.

Sofia Gil-Clavel and Emilio Zagheni, “Demographic Differentials in Facebook Usage Around the World”, poster presented at The International AAAI Conference on Web and Social Media (ICWSM-2019). June 2019.

Sofia Gil-Clavel and Emilio Zagheni, “Demographic Differentials in Facebook Usage Around the World”, presented at IUSSP Digital Demography in the Era of Big Data. June 2019.

Sofia Gil-Clavel and Emilio Zagheni, “Demographic Differentials in Facebook Usage Around the World”, poster presented at Population Fest 2019 (PopFest2019). May 2019.

¹ The final name of the work was “EU-15 Immigrants Language Integration on Twitter”.

² The final name of the presentation was: EU-15 Immigrants Cultural Integration –In Twitter.

Sofia Gil-Clavel, “Estimation of the infant mortality rate in Mexico in 2015 at municipal level using numerical techniques”, presented at the XIV National Meeting of the Mexican Society of Demography (SOMEDE). June 2018.

Appendix B: Complete List of Courses Attended during PhD

- (Non-) Probability Samples in the Social Sciences. Part of the Summer School in Survey Methodology 2021 given by GESIS.
- Survey Sampling and Weighting. Part of the Summer School in Survey Methodology 2021 given by GESIS.
- Advanced Methods for Causal Inference with Observational Data. Part of the 2021 elective courses of the IMPRS-PHDS.
- Working with Data for Population Research, course given by the Faculty of Spatial Sciences of the University of Groningen.
- Fundamentals of Digital and Computational Demography. Part of the core-courses of IMPRS-PHDS 2019.
- Population Health. Part of the core-courses of IMPRS-PHDS 2019.
- Demographic Methods. Part of the core-courses of IMPRS-PHDS 2019.
- Causal Mediation Analysis at University of Helsinki. May 2019.
- Using the GWDG Scientific Compute Clusters – An Introduction. October 2018.
- Parallel Programming with MPI (Including MPI for Python). October 2018.