Luna Fazio

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Education

TU Dortmund, Department of Statistics — *Dortmund, Germany*
Ph.D. in Statistics — *2022 - Present*
- Supervisor: Prof. Dr. Paul-Christian Bürkner
- Research project: Bayesian distributional latent variable models

Pontificia Universidad Católica del Perú — *Lima, Peru*
M.Sc. in Statistics — *2017 - 2021*
- Supervisor: Prof. Dr. Giancarlo Sal Y Rosas
- Thesis: Endpoint-inflated beta-binomial regression for correlated count data.

Universidad Peruana Cayetano Heredia — *Lima, Peru*
B.Sc. in Biology — *2010 - 2015*

Work experience

TU Dortmund, Department of Statistics — *Dortmund, Germany*
Research associate — *2023 - Present*
- Supervised by Prof. Dr. Paul Bürkner (DFG Project 497785967)
- Research on specification of complex latent variable models with applications in cognitive modeling

University of Stuttgart — *Stuttgart, Germany*
Research associate — *2022 - 2023*
- Supervised by Prof. Dr. Paul Bürkner (DFG Project 497785967)
- Research on extensions to the Structural Equation Modeling framework

Bernard van Leer Foundation — *Lima, Peru*
Consultant — *2021 - 2022*
- Design and development of a web-based application for monitoring of public health interventions
- Developed Shiny and Tableau-based dashboards for data processing and visualization

Deutsche Gesellschaft für Internationale Zusammenarbeit – Peru — *Lima, Peru*
Consultant — *2020*
- Developed Tableau dashboards to monitor key indicators of municipality-level performance

Delivery Unit – Presidencia del Consejo de Ministros — *Lima, Peru*
Analyst — *2019 - 2020*
- Monitoring of key government interventions through survey and administrative data
- Technical assistance for the procurement of impact evaluation and data collection services.

UNICEF — *Lima, Peru*
Consultant — *2018 - 2019*
- Conducted a literature review on measurement of adolescent well-being
- Assisted in the design and estimation of an index for adolescent well-being

Ministerio de Salud — *Lima, Peru*
Analyst — *2016 - 2018*
- Design and measurement of health indicators for various national interventions

Centro de Investigación Interdisciplinaria en Sexualidad, Sida y Sociedad — *Lima, Peru*
Research assistant — *2015 - 2016*
- Monitoring and analysis of longitudinal studies
- Provided statistical support to fellow researchers

Facultad de Salud Pública y Administración – Universidad Peruana Cayetano Heredia — *Lima, Peru*
Research assistant — *2014 - 2016*
- Data collection tasks involving healthcare personnel and patients
- Provided training and monitoring of field data collection via mobile apps
- Data processing and statistical analysis

Publications

Fazio L, Scholz M, Aguilar JE, Bürkner PC. *Primed Priors for Simulation-Based Validation of Bayesian Models.* In review (available as arXiv preprint), 2025.

Fazio L, Bürkner PC. *Gaussian Distributional Structural Equation Models: A framework for modeling latent heteroscedasticity.* Multivariate Behavioral Research, 2025.

Allan-Blitz LT, Konda KA, Vargas SK, Wang X, Segura ER, **Fazio L**, Calvo GM, Caceres CF, Klausner JD. *The Development of an Online Risk Calculator for the Prediction of Future Syphilis among a High-Risk Cohort of Men Who Have Sex with Men and Transgender Women in Lima, Peru.* Sexual Health, 2018.

García PJ, **Fazio L**, Bayer AM, Lizarraga AG, Chiappe M, La Rosa S, Lazo M, López L, Valderrama M, Cárcamo CP. *Sexual health knowledge and practices and STI/HIV prevalence among long-distance truck drivers in Peru.* SAGE Open Medicine, 2017.

Egoavil MS, Condor DF, Pinazo-Vidal MA, Quezada JM, **Fazio L**, Bueno JC, Peña LE, Farfán J, De la Puente JG, Arce C, Malpartida B, Arostegui A, Pérez-Lu JE. *Qualitative Study for the Development of a Telemedicine System in Palliative Care.* Palliative Medicine and Hospice Care, 2017.

Academic events

Aguilar JE, **Fazio L**. *Bayesian Data Analysis.* Workshop at DAGStat 2025, Berlin 2025.

Fazio L, Aguilar JE, Ickstadt K, Bürkner PC. *Categories without enough observations? Merge levels at inference time with Bayes!* Poster at Bayesian Methods for the Social Sciences II, Amsterdam 2024.

Fazio L, Bürkner PC. *This Underrated Technique Might Be The Future of Structural Equation Models.* Poster at Poster at ISBA World Meeting, Venice 2024.

Bustamante MJ, **Fazio B**, Calvo GM, Lugo E, Konda KA. *Understanding gay couples: a new vision for HIV prevention in Peru.* Poster at 10th IAS Conference on HIV Science, Mexico DF 2019.

Fazio B, Bayes C, Sal y Rosas G. *Approaches to Model Specification for Regression Analysis with Correlated, Endpoint-Inflated Bounded Count Data.* VI Latin American Meeting on Bayesian Statistics, Lima 2019.

As attendee: Bayes@Lund 2024, BayesComp 2023

Teaching

TU Dortmund, Department of Statistics (Course instructor)
Multilevel Modeling Seminar, Introduction to Julia, Intensive Statistics Course
Pontificia Universidad Católica del Perú (Teaching assistant)
Introduction to Statistics, Advanced Regression Techniques
Universidad Peruana Cayetano Heredia(Teaching asisstant)
Biostatistics, Epidemiology, Thesis Seminar

Supervision

Forough Asgari, student assistant. Joint supervision with Javier Aguilar. Currently developing extensions for the R2D2 prior.
Timo Stenz, student assistant. Extended support for variational inference in the **SBC** R package.

Skills

Programming	R (tidyverse, brms, shiny), Julia (Tidier, Turing), Python (NumPy, BayesFlow)
Statistics	Hierarchical models, latent variables, Bayesian inference, prior specification, simulation studies
Tools	SQL, git/GitHub, LaTeX, SLURM (HPC), Tableau, PowerBI
Languages	Spanish (native), English (fluent), German (basic)