



# Ricardo Rey-Sáez

PSYCHOMETRICS · EXPERIMENTAL PSYCHOLOGY · BAYESIAN MODELING

PH.D. CANDIDATE

Universidad Autónoma de Madrid

Member of the *Cognition, Attention and Learning Lab* at Universidad Autónoma de Madrid (UAM). My research sits somewhere between Bayesian modelling, psychometrics, and experimental psychology. More specifically, I am interested in developing measurement models that can capture individual differences in how people perform on experimental tasks. For more information, visit my [personal website](#).

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## Education

### Ph.D. Psychology

2024–present

Universidad Autónoma de Madrid

- Developing and validating psychometric models for the study of individual differences in experimental psychology.

### M.S. Quantitative Research Methods for Behavioral and Health Sciences

2020–2022

Complutense University of Madrid

### B.S. Psychology

2017–2020

Complutense University of Madrid

## Additional Training

### Bayesian Cognitive Modeling: A Practical Course

2024

University of Amsterdam

### Practical Introduction to Advances in Exploratory Factor Analysis Applied to Item Analysis

2023

University of the Basque Country

### Introduction to Exploratory Graph Analysis (EGA) with R

2022

Zaragoza University

### Principles, Statistical and Computational Tools for Reproducible Data Science

2020

Harvard University (HarvardX) | Verified Certificate

### Professional Certificate in Data Science

2020

Harvard University

- *Data Science: R basics* | Verified Certificate
- *Data Science: Visualization* | Verified Certificate
- *Data Science: Probability* | Verified Certificate
- *Data Science: Inference and Modeling* | Verified Certificate
- *Data Science: Productivity Tools* | Verified Certificate
- *Data Science: Wrangling* | Verified Certificate
- *Data Science: Linear Regression* | Verified Certificate

## Teaching and Educational Activities



## Meta-analysis, Latent Class and Latent Profile Analysis 2025

Lead instructor, Advanced Statistical Training for Researchers

- Organized by Deusto FamilyPsych, Deusto University

## Introduction to Bayesian Psychometrics: Applications to Factor Analysis 2025

Seminar instructor, National interfaculty training seminar

- Organized by ASCOFAPSI (Colombian Association of Faculties of Psychology)

## Beyond Maximum Likelihood: Introduction to Bayesian Factor Analysis 2025

Seminar instructor, Master's program in Quantitative Research Methods

- Organized by Autonomous University of Madrid

## ChatGPT and Psychometrics: Optimizing the Design, Refinement, and Data Analysis of Measurement Instruments 2024

Seminar instructor, Master's program in Quantitative Research Methods

- Organized by Autonomous University of Madrid

## Data Analysis in Psychology 2023–2024

Course instructor, Undergraduate program (Bachelor's in Psychology)

- Organized by Nebrija University

## Adapting Our Teaching to the Revolution of AI and ChatGPT 2023

Workshop instructor, Faculty training

- Organized by Universidad Autónoma de Madrid

## How can we Adapt Our Teaching to the Revolution of AI and ChatGPT? 2023

Workshop instructor, Faculty training

- Organized by University of Costa Rica

## Textbooks

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**Rey-Sáez, R., & Estrada, E. (2023).** *Análisis de datos con R en Ciencias Sociales y de la Salud*. Editorial Síntesis: <https://www.sintesis.com/libro/analisis-de-datos-con-r-en-ciencias-sociales-y-de-la-salud>

## Software

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**BayesianEFA.** R package for Bayesian exploratory factor analysis. Source code: <https://github.com/RicardoReySaez/BayesianEFA>

## Awards

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### Best Oral Communication Award 2025

Ibero-American Association for Research on Individual Differences

- Presentation Title: ***New Hierarchical Models to Answer Old Psychometric Questions in Experimental Research: Which Task Best Measures Inhibition?***
- Prize: **MASK-5** Measurement Instrument

### Dissemination and Transfer in Methodology Award 2024

Spanish Association of Methodology for Behavioral Sciences

- Project ***Ecuación Triunfo***
- Funding: €1,000

### Julio Olea Grant 2024

Spanish Association of Methodology for Behavioral Sciences

- Funding to carry out the research project ***The union of psychometrics and experimental psychology: Bayesian hierarchical models with common factors for response times***
- Funding: €2,400



## Publications

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1. **Rey-Sáez, R.**, Franco-Martínez, A., Revuelta, J. & Vadillo, M. A. (2026). A Unified Framework for Psychometrics in Experimental Psychology: The Standardized Generalized Hierarchical Factor Model. *Psychological Methods*. Advance online publication. <https://doi.org/10.1037/met0000846>
2. Garre-Frutos, F., Martínez-López, P., Ariza, A., **Rey-Sáez, R.**, Luque, D., Vadillo, M. A., & González, F. (2026, March 22). Explicit knowledge modulates Pavlovian attentional biases. *PsyArxiv*. [https://doi.org/10.31234/osf.io/uvwge3\\_v2](https://doi.org/10.31234/osf.io/uvwge3_v2)
3. **Rey-Sáez, R.**, & Revuelta, J. (2026, March 5). An Efficient Rotation-Sign-Permutation Algorithm to Solve Rotational Indeterminacy in Bayesian Exploratory Factor Analysis. *PsyArxiv*. [https://doi.org/10.31234/osf.io/6drsw\\_v2](https://doi.org/10.31234/osf.io/6drsw_v2)
4. Franco-Martínez, A., **Rey-Sáez, R.**, Shanks, D. R., Soto, D., & Vadillo, M. A. (2026). Replicating the unconscious working memory effect: A multisite preregistered study. *Neuroscience of Consciousness*. <https://doi.org/10.1093/nc/niaf046>
5. Pacheco-Romero, A. M., Martín-García, Ó., **Rey-Sáez, R.**, Boemo, T., Blanco, I., Vázquez, C., & Sánchez-López, Á. (2024). An integrative analysis of potential mechanisms of reduced positive affect in daily life in depression: an ESM study. *Cognition and Emotion*, 38(4), 587–604. <https://doi.org/10.1080/02699931.2024.2314066>
6. Gracia, E., Martín-Fernández, M., **Rey-Sáez, R.**, & Yount, K. M. (2024). Attitudes justifying partner violence against women in Latin-American and Caribbean countries: A measurement invariance study. *Psychology of Violence*, 14(2), 127–136. <https://doi.org/10.1037/vio0000497>
7. Vega-Sanz, M., **Rey-Sáez, R.**, Berástegui, A., & Sánchez-López, Á. (2024). Difficulties in pregnancy adjustment as predictors of perinatal depression: Indirect effects through the role of brooding rumination and maternal–fetal bonding. *American Journal of Perinatology*, 41(S 01), e2870–e2877. <https://doi.org/10.1055/s-0043-1776062>
8. Franco-Martínez, A., **Rey-Sáez, R.**, & Castillejo, I. (2023). The seven wonderings of large language models as psychometric designers, refiners, and analysts. *PsyArXiv*. <https://doi.org/10.31234/osf.io/kmqy5>
9. **Rey-Sáez, R.** (2022). Réplica a: Validación cruzada sobre una misma muestra: Una práctica sin fundamento. *R.E.M.A. Revista Electrónica de Metodología Aplicada*, 24(1), 41–44. <https://doi.org/10.17811/rema.24.1.2022.41-44>

## Conference Presentations

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1. **Rey-Sáez, R.**, Franco-Martínez, A., Revuelta, J., & Vadillo, M. A. (2026). *A Multilevel Psychometric Framework for Experimental Tasks: The Generalized Hierarchical Factor Model* [Oral presentation] 15th International Multilevel Conference.
2. Franco-Martínez, A., **Rey-Sáez, R.** & Vadillo, M. A. (2026) *How do I start planning my multisite project? A tutorial on multilevel simulation-based power and sensitivity analysis* [Oral presentation] 15th International Multilevel Conference.
3. **Rey-Sáez, R.**, Franco-Martínez, A., Revuelta, J., & Vadillo, M. A. (2025). *New Hierarchical Models to Answer Old Psychometric Questions in Experimental Research: Which Task Best Measures Inhibition?* [Oral presentation] XIV Conference – Asociación Iberoamericana para la Investigación de las Diferencias Individuales (AIIDI).
4. **Rey-Sáez, R.**, Franco-Martínez, A., Revuelta, J., & Vadillo, M. A. (2025). *Where psychometrics meets experimental psychology: Bayesian hierarchical factor models for response times*. [Oral presentation] XI Conference – European Congress of Methodology.
5. **Rey-Sáez, R.**, Revuelta, J., & Vadillo, M. A. (2025). *From random effects to common factors: Latent dimensionality assessment in experimental psychology*. [Oral presentation] XI Conference – European Congress.
6. **Rey-Sáez, R.**, Garre-Frutos, F., Franco-Martínez, A., Castillejo, I., & Vadillo, M. A. (2025). *Addressing methodological challenges in unconscious process research: A hierarchical modeling approach*. [Poster presentation] 27 Annual Meeting of the Association for Scientific Studies of Consciousness.
7. **Rey-Sáez, R.**, Garre-Frutos, F., Franco-Martínez, A., Castillejo, I., & Vadillo, M. A. (2025). *Hierarchical models in experimental psychology: A solution for measuring unconscious psychological processes*. [Poster presentation] XIV Reunión Científica sobre Atención.
8. **Rey-Sáez, R.**, Garre-Frutos, F., & Vadillo, M. Ángel. (2024). *What psychometrics can offer to experimental psychology: The multilevel model as the legacy of factor analysis*. [Oral presentation] XVIII Congreso de Metodología de las Ciencias Sociales y de la Salud.
9. **Rey-Sáez, R.**, Lecuona, Ó., & Martín-Fernández, M. (2024). *Approximate measurement invariance with multiple groups: A comparison between Bayesian SEM and the alignment method*. [Oral presentation] XVIII Congreso de Metodología de las Ciencias Sociales y de la Salud.
10. Lecuona, Ó., **Rey-Sáez, R.**, & Martín-Fernández, Manuel. (2024). *Studying invariance with multiple groups in large datasets: A comparison of bayesian SEM and alignment method*. [Oral presentation] 13th Conference of The International Test Commission.
11. **Rey-Sáez, R.**, Franco-Martínez, A., Castillejo, I., & Vadillo, M. A. (2024). *From unconscious to unreliable? Measurement error biases evidence on studies of unconscious processing*. [Poster presentation] 27 Annual Meeting of the Association for Scientific Studies of Consciousness.



12. Franco-Martínez, A., **Rey-Sáez, R.**, Shanks, D. R., Soto, D., & Vadillo, M. A. (2024). *Advances in “replicating the unconscious working memory effect: A multisite preregistered study.”* [Poster presentation] 27 Annual Meeting of the Association for Scientific Studies of Consciousness.
13. Pacheco-Romero, A. M., Martín-Gracia, Ó., **Rey-Sáez, R.**, Boemo, T., Blanco, I., & Sánchez-López, Á. (2023). *Affective reactivity to daily events predicts changes in future psychopathology and is modulated by the use of different forms of rumination.* [Oral presentation] International Convention of Psychological Science (ICPS).
14. Aivar, P., **Rey-Sáez, R.**, & Vadillo, M. A. (2023). *Hard to ignore? Irrelevant distractors cannot be completely suppressed in a contextual cueing task.* [Poster presentation] 23 Annual Meeting of the Vision Sciences Society.
15. Martín-García, O., **Rey-Sáez, R.**, Boemo, T., Pacheco-Romero, A., Blanco, I., & Sánchez-López, A. (2023). *Modulatory role of motivational self-focuses on the relation between perceived stress and momentary affect: An ESM study.* [Oral presentation] Emotions Congress 2023.
16. Pacheco-Romero, A. M., Martín-Gracia, Ó., **Rey-Sáez, R.**, Boemo, T., Blanco, I., Vázquez, C., & Sánchez-López, Á. (2022). *Intra-individual mechanisms of positive affect regulation deficits in depression: An experience sampling study.* [Oral presentation] 52nd European Association for Behavioural; Cognitive Therapies.
17. **Rey-Sáez, R.**, & Nájera, P. (2022). *Investigando metodología en el multiverso de la academia: Comunidad, recursos y estrategias por y para jóvenes.* [Symposium Organizer] XVII Congreso de Metodología de las Ciencias Sociales y de la Salud.
18. **Rey-Sáez, R.** (2022). *Investigación, paso 1: ¿Cómo y dónde busco información? Nuevas herramientas para la detección eficiente de bibliografía de interés.* [Oral presentation] XVII Congreso de Metodología de las Ciencias Sociales y de la Salud.
19. **Rey-Sáez, R.** (2022). *Approximate measurement invariance: Assessing the accuracy and sensitivity of alignment optimization under partial invariance with multiple groups.* [Oral presentation] XVII Congreso de Metodología de las Ciencias Sociales y de la Salud.
20. Martín-Fernández, M., & **Rey-Sáez, R.** (2022). *Approximate measurement invariance in surveys on attitudes toward intimate partner violence in 12 Latin American countries.* [Poster presentation] XVII Congreso de Metodología de las Ciencias Sociales y de la Salud.
21. **Rey-Sáez, R.** (2022). *Approximate measurement invariance in surveys on attitudes toward intimate partner violence in 12 Latin American countries.* [Oral presentation] Research Conference of the Faculty of Psychology, Universidad Autónoma de Madrid