CURRICULUM VITAE ABREVIADO (CVA)

***IMPORTANT** – The Curriculum Vitae **cannot exceed 4 pages**. Instructions to fill this document are available in the website.*

Part A. PERSONAL INFORMATION

First name	María del Mar		
Family name	Rueda García		
Gender (*)	Female	Birth date (dd/mm/yyyy)	
Social Security, Passport, ID number			
e-mail		URL Web	
Open Researcher and Contributor ID (ORCID) (*)		0000-0002-2903-8745	

(*) Mandatory

A.1. Current position

Position	Full profesor		
Initial date	2009		
Institution	Universidad de Granada		
Department/Center	Statistics and Operation Research		
Country	Spain	Teleph. number	
Key words	Sampling, surveys, inference in finite population, resampling techniques,		

A.2. Previous positions (research activity interuptions, indicate total months)

Period	Position/Institution/Country/Interruption cause
1995-2009	Associate profesor.
1987-1995	Titular de escuela universitaria

A.3. Education

PhD, Licensed, Graduate	University/Country	Year
PhD on Mathematics	Universidad de Granada/Spain	1993
Degree on Mathematics	Universidad de Granada//Spain	1989

Part B. CV SUMMARY *(max. 5000 characters, including spaces)*

M. Rueda is full professor of Statistics and Operational Research and researcher of the Institute of Mathematics of Granada (IMAG) at the University of Granada (UGR). She has been recognised 5 six-year research periods.. She has almost 36 years of teaching and research experience.
Her research lines have generated more tan 100 publications in impact, 1 book, 17 book chapters, and 100+ conference papers, in Statistics, Mathematics, Social Sciences, Health Sciences, and Computing fields. She has also developed software (co-authored 4 R- specific packages: rNPBST,Frames2, RRTCS and NonProbEst and a Python package: inps) .
Since 2010 she leads the research group Design and statistical analysis of surveys (FQM365). She has supervised 12 PhD theses and is currently supervising 2 students. She has been supervisor of 5 PhD students recruited in competitive predoctoral grants (4 FPU and 1 FPI).

She has been the main investigator of 12 research projects (7 national, 4 regional and 1 granted by Santander bank). She has evaluator of research projects for the Spanish Research Agency, for the Swiss National Science Foundation, for the Italian Ministry for Education, University and Research and for the Polish National Science Centre. She act as referee in more than 50 journals.
According to Google Scholar she has more than 2300 citations, h-index 24, according to Scopus more than1450 citations, h-index 17..The most cited article is Recent trends in the use of statistical tests for comparing swarm and evolutionary computing algorithms: Practical guidelines and a critical review (2020) (460 citations). She has also collaborated in teaching and degree evaluation activities for various evaluation agencies (ANECA, UNIBASQ, ACQU Cataluña, AVAP, ACCUEE). She is an associate editor of several journals included in the JCR, and she has carried out research stays at American and European universities.
She began studying sampling at her university, creating a survey and sampling research group that is recognized nationally and internationally. Her area of expertise is focused on inference in survey sampling, with particular emphasis on reweighting in complex survey designs, methods for the treatment of biases related to social desirability, nonresponse, hidden populations, nonprobability surveys and resampling techniques. She was a pioneer in the use of calibration estimators for non-linear parameters. Her current scientific research is focus on the study of nonprobability surveys. She develops new estimation methods that combine shrinkage, statistical matching, propensity score adjustment, calibration, multiple frames and supervised learning in various ways.
She has collaborated with research groups from many different disciplines: addictions, sexual abuse, female genital mutilation, anti-immigrant sentiment, mistreatment of women, infertility, chronic pain, criminal behavior, inequality in ethnic minorities, covid. In recent years I have collaborated with public health institutions advising and designing the methodology, of the Andalusian Health Survey as well as the Healthcare and Social Survey and in the external evaluation of the European Survey on Working Conditions. She has also collaborated with data science research groups, performing statistical analysis for the comparison of algorithms and introducing fuzzy dispersion measures.

These publications have been developed together with different collaborators from the University of Granada, University of Almería, University of Miguel Hernández, University of Girona, Westat, University of Perugia, University of Calabria, the Institute of Advanced Social Studies, the University of Bristol, the Center for Population Studies and Institute of Policy Development and Research of the University of Addis Ababa, the University of Botswana, University of Medellin, UNED, and The Andalusian School of Public Health.

Collaborator with various public institutions in dissemination activities. She held various academic positions for more than 20 years at the department of Statistics, at the faculty of Sciences and at Academic Organization Vicerectorate.
She is coordinator of the transfer group of the Institute of Mathematics of the University of Granada, she has collaborated with 9 companies and public institutions through 18 OTRI contracts for an amount of more than 170000 euros, of which she has been main researcher in 15 of them. These works covered different topics: from the evaluation of clinical trials, sampling designs for surveys, reports for gender studies, development of methodologies for predicting sales in companies, training courses for personnel in reweighting techniques or advice for the design of national and international surveys. She is main researcher of a national transfer project and participates as a researcher in a Health Technological Development project of ISCIII.

Part C. RELEVANT MERITS *(sorted by typology)*

C.1. Publications *(see instructions)*

1. S. Martínez; M. D. Illescas; M. Rueda. 2024. Calibration estimation of distribution function based on multidimensional scaling of auxiliary information. Journal of Computational and Applied Mathematics 446-115876 https://doi.org/10.1016/j.cam.2024.115876

2. R. Ferri; J.L. Rueda; M. Rueda; B. Cobo. 2024. Estimating response propensities in nonprobability surveys using machine learning weighted models. Mathematics and Computers in Simulation 225, 779-793 https://doi.org/10.1016/j.matcom.2024.06.012
3. M. Rueda; B. Cobo; J. Rueda; R. Ferri. 2024. Kernel Weighting for blending probability and non-probability survey samples. SORT-Statistics and Operations Research Transactions 48(1) 93.124 *https://doi.org/10.57645/20.8080.02.15*
4. B. Cobo, M. R. Ferri, J.L. Rueda, M. Rueda 2024. Software review for inference with non-probability surveys. The Survey Statistician 90, 40–47.
5. J. F. Vera, C. Sánchez, M. Rueda. 2023. A unified approach based on multidimensional scaling for calibration estimation in survey sampling with qualitative auxiliary information. Statistical Methods in Medical Research https://doi.org/10.1177/096228022311512
6. M. Rueda, S. Pasadas-del-Amo, B. Rodríguez,. L.Castro-Martín., R. Ferri-García, 2023. Enhancing estimation methods for integrating probability and nonprobability survey samples with machine-learning techniques. An application to a Survey on the impact of the COVID-19 pandemic in Spain. Biometrical Journal, 65, 2200035. https://doi.org/10.1002/bimj.202200035.
7. A. Roldan, H. Bustince, M. Rueda, C. Roldan, L.De Miguel, C. Guerra. 2023. On the notion of fuzzy dispersion measure and its application to triangular fuzzy numbers. Information Fusion 100, n.101905 https://doi.org/10.1016/j.inffus.2023.101905
8. R. Ferri; M. Rueda. Variable selection in Propensity Score Adjustment to mitigate selection bias in online surveys. 2022. Statistical Papers. 63 - 6, pp. 1829 - 1881. https://doi.org/10.1007/s00362-022-01296-x
9. M. Rueda, R. Ferri; L. Castro. 2020. The R package NonProbEst for estimation in non-probability surveys The R journal 12:1, 406-418.
10. M. Rueda, A. Arcos, D. Molina, MG. Ranalli. 2018. Estimation techniques for ordinal data in multiple frame surveys with complex sampling designs. International Statistical Review 86 - 1, 51 – 67.

C.2. Congress, indicating the modality of their participation (invited conference, oral presentation, poster)

- Estimation In Nonprobability Samples With Propensity Score Adjustment And Kernel Weighting. 64th World Statistics Congress. 2023. Canadá. Oral presentation.
- Evaluation of available techniques and its combinations for addressing selection bias in nonprobability surveys. 8th Italian Conference on Survey Methodology (ITACOSM 2023). 2023. Invited conference.
- Non-probability surveys: a revision of methods for inference. BNU Workshop on Survey Statistics. Baltic-Nordic-Ukrainian Network on Survey Statistics. 2022. Estonia. Keynote

C.3. Research projects, indicating your personal contribution.
Main Resarcher:

1. PlatRepreWeb - Plataforma para ajustar la representatividad de las encuestas realizadas mediante web y redes sociales mediante reponderación con técnicas estadísticas y de ML avanzadas PDC2022-133293-I00. Proyectos de Prueba de Concepto de la AEI (PDC2022).01/12/2022-30/11/2024 .
2. Técnicas modernas de AnáLisis de datos para la Estimación en eNcuestas por muesTreO. TALENTO. (Proyectos I+D+i del Programa Operativo FEDER 2020. Junta de Andalucía.). 01/01/2022-30/06/2023.

3. Técnicas modernas para reducción de sesgos en las estimaciones. Aplicación al estudio de adicciones. PID2019-106861RB-I00. Ministerio de Educación y Ciencia 01/06/2020-31/05/2023.
4. Nuevas Metodologías para el estudio y la prevención del consumo de cannabis. B-SEJ-323-UGR18. Consejería de Innovación, Ciencia y Empresa. Junta de Andalucía. 01/01/2020-31/12/2021
5. IMPSEROCOVID19 / IMPacto y SERO prevalencia de la enfermedad COVID-19,. BANCO SANTANDER, S.A..2020-2021.
6. Encuestas Web, encuestas con teléfonos inteligentes y aplicaciones. Nuevas metodologías para mejorar las estimaciones obtenidas a partir de muestras probabilísticas y no probabilísticas. MTM2015-63609-R, 01/01/2016-31/12/2019
7. Estimación de proporciones a partir de datos de encuestas complejas con información auxiliar. MTM2009-1005 Ministerio de Educación y Ciencia. 2010-2012.

Researcher

1. Desarrollo tecnológico para mejorar la representatividad de encuestas mediante técnicas de reponderación estadística y de aprendizaje automático: plataforma BETTERSURVEYS. Instituto de Salud Carlos III. 01/01/2024-31/12/2025.
2. Determinantes Ambientales de la Salud: proyecto multicéntrico a partir de Encuestas Poblacionales de salud (proyecto DAS-EP). Instituto de Salud Carlos III. PI22/00512, 01/01/2023-15/01/2024.
3. IMAG-María de Maeztu CEX2020-001105-M/AEI/10.13039/501100011033. 01/01/2022-31/12/2025.

C.4. Contracts, technological or transfer merits,

1 Contract. External Data Quality Assessment of the EWCS 2024 survey. European Foundation for the Improvement of Living and Working Conditions. 12/2024- 11/2025

2 Contract. Estudio de evaluación de la calidad del muestreo ponderación y resultados sobre los datos de encuesta de trabajo europea EWCTS 2022 en el ámbito de la metodología de encuesta comparada. Colegio profesional de politólogos y sociólogos de la comunidad de Madrid. 13/03/2023-13/09/2023.

3 Contract. Asesoramiento en metodologías de investigación por muestreo y desarrollo de técnicas estadísticas con aplicación a Real-Word Data y a la visualización de datos. Escuela Andaluza de Salud Pública..01/07/2022-31/12/2022.

4 Contract. Asesoramiento en metodologías de investigación por muestreo para la Encuesta Andaluza de Salud y Desarrollo de técnicas estadísticas con aplicación a Real World Data. Escuela Andaluza de Salud Pública. 01/11/2019-01/01/2020.

5 Contract. Soporte en el Proyecto de Estimaciones de Mercado a través de métododе muestreo avanzados: análisis de productos especiales, con comportamientos anómalos. Compañía de distribución Logista. 01/01/2018-01/03/2018.

6 Contract. Desarrollo del Proyecto de Estimaciones en Áreas Pequeñas Compañía de distribución Logista. 01/07/2017-01/09/2017

7 Technological platform for the Health and Social Survey. Python Software. 2023 http://www.easp.es/essa/

8 Platform to improve the representativeness of surveys using statistical reweighting techniques and machine learning. https://bettersurveys.org/