

Nora Würz

Current Position: Lecturer & Postdoctoral Researcher (Akademische Rätin)

Institute of Statistics, University of Bamberg
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Personal information: married, two children (born 2021, 2025)

RESEARCH INTERESTS

Small area estimation and survey statistics, with a focus on model-based small-area methods under limited auxiliary population data; machine learning methods (random forests, mixed effects random forests) for small area estimation; tabular foundation models for estimating small-scale indicators.

ACADEMIC POSITIONS

since 10/2022

Lecturer & Postdoctoral Researcher (Akademische Rätin)

Chair of Statistics and Econometrics, University of Bamberg

Research and teaching in statistics; organisation of the Bamberger Centrum für Empirische Studien (BACES) and general administrative duties at the chair.

11/2017 – 09/2022

Researcher, fu:stat Statistical Consulting Unit

Chair of Applied Statistics, Freie Universität Berlin

Organisational lead of the statistical consulting unit; statistical consulting for research projects, statistics and software courses, and teaching evaluation for university members; contributed to external consulting projects (e.g. for the Berlin Senate); research in survey statistics.
Maternity/Parental leave: 06/2021 – 09/2022.

EDUCATION

10/2017 – 12/2022

Ph.D. in Statistics (summa cum laude)

Freie Universität Berlin, Department of Economics

Thesis: "Small Area Estimation under Limited Auxiliary Population Data – Dealing with Model Violations and their Economic Applications." Supervisors: Prof. Dr. Timo Schmid (University of Bamberg) and Prof. Nikos Tzavidis, Ph.D. (University of Southampton, UK).
Defence: 19/12/2022.
Funded by a doctoral scholarship from the Studienstiftung des deutschen Volkes.

10/2015 – 10/2017

Master of Science in Statistics (grade: 1.0)

Humboldt-Universität zu Berlin, Berlin

Specialisations: survey statistics and statistical inference.
Thesis: "Model-based Estimation of Regional Baskets based on the UK Living Cost and Food Survey." Awarded the Gerhard Fürst Prize 2018 by the Federal Statistical Office.

10/2012 – 07/2015

Bachelor of Science in Integrated Life Sciences – Biology, Biomathematics and Biophysics (grade: 1.3)

Friedrich-Alexander-Universität Erlangen-Nürnberg, Erlangen

PUBLICATIONS

Peer-reviewed journal articles

- Frink, N., Schmid, T., & Würz, N. (2026). [Small area estimation with generalized random forests: estimating poverty rates in Mexico](#). *Journal of the Royal Statistical Society: Series A – Statistics in Society*. Forthcoming.
- Krennmair, P., Würz, N., Schmid, T., & Tzavidis, N. (2026). [Random forests and mixed effects random forests for small area estimation of general parameters: A poverty mapping case study in Mozambique](#). *The Annals of Applied Statistics*, 20(1), 809–832.
- Krennmair, P., Würz, N., & Schmid, T. (2026). [Analysing opportunity cost of care work using mixed effects random forests under aggregated auxiliary data](#). *Journal of the Royal Statistical Society: Series C – Applied Statistics*, 75(1), 1–20.

- Hadam, S., Würz, N., Kreutzmann, A.-K., & Schmid, T. (2023). [Estimating regional unemployment with mobile network data for Functional Urban Areas in Germany](#). *Statistical Methods & Applications*, 33, 205–233.
- Würz, N., Schmid, T., & Tzavidis, N. (2022). [Estimating regional income indicators under transformations and access to limited population auxiliary information](#). *Journal of the Royal Statistical Society: Series A – Statistics in Society*, 185(4), 1679–1706.
- Dawber, J., Würz, N., Smith, P., Flower, T., Thomas, H., Schmid, T., & Tzavidis, N. (2022). [Experimental UK regional consumer price inflation with model-based expenditure weights](#). *Journal of Official Statistics*, 38(1), 213–237.

Other publications

- Würz, N. (2024). [Schätzung regionaler Einkommensindikatoren unter Transformationen in Abwesenheit von Populations-Mikrodaten](#). Abstract of the doctoral thesis, *WISTA – Wirtschaft und Statistik*.
- Krennmair, P., Würz, N., & Schmid, T. (2022). [Tree-Based Machine Learning in Small Area Estimation](#). *The Survey Statistician*, 86, 22–31.
- Würz, N. (2022). [The R package saeTrafo for estimating unit-level small area models under transformations](#). R package vignette.
- Würz, N. (2022). [Small Area Estimation under Limited Auxiliary Population Data – Dealing with Model Violations and their Economic Applications](#). Doctoral dissertation, Freie Universität Berlin.
- Würz, N. (2019). [Modellbasierte Schätzung von regionalen Warenkörben für das Vereinigte Königreich](#). Master's thesis, *WISTA – Wirtschaft und Statistik*.

TALKS AND CONFERENCE CONTRIBUTIONS

12/2024	Random forests and mixed effects random forests for small area estimation of general parameters <i>with Patrick Krennmair, Timo Schmid, Nikos Tzavidis</i> <i>The 9th Conference Survey Sampling in Economic and Social Research, Katowice, Poland Talk</i>
09/2024	Transformation-based small area approaches in the case of business data <i>with Niklas Dörner, Timo Schmid</i> <i>Statistische Woche 2024, Regensburg, Germany Talk</i>
08/2024	Random forests and mixed effects random forests for small area estimation of general parameters <i>with Patrick Krennmair, Timo Schmid, Nikos Tzavidis</i> <i>COMPSTAT 2024, Giessen, Germany Talk</i>
08/2024	Twofold nested error regression models with data-driven transformation <i>Presented by Rachael Katwa Kyalo, with Timo Schmid</i> <i>COMPSTAT 2024, Giessen, Germany Talk</i>
07/2024	Schätzung regionaler Einkommensindikatoren unter Transformationen und limitiertem Zugang zu Hilfsinformationen aus der Population <i>StatistikTage Bamberg Fürth 2024, Bamberg, Germany Invited Talk</i>
09/2023	Small area estimation in off-census years with geospatial auxiliary data <i>with Yeonjoo Lee, Timo Schmid</i> <i>Statistische Woche 2023, Dortmund, Germany Talk</i>
07/2021	Estimating regional income indicators with access to limited auxiliary information <i>with Timo Schmid, Nikos Tzavidis</i> <i>Conference in Honour of Fred Smith and Chris Skinner 2021, Online Talk</i>
06/2019	Data-driven Transformations for the Estimation of Small Area Means <i>with Timo Schmid, Nikos Tzavidis</i> <i>ITACOSM 2019, Florence, Italy Talk</i>
03/2019	Data-driven Transformations for the Estimation of Small Area Means <i>with Timo Schmid, Nikos Tzavidis</i> <i>DAGStat 2019, Munich, Germany Talk</i>
02/2019	Data-driven Transformations for the Estimation of Small Area Means <i>with Nikos Tzavidis, Timo Schmid</i> <i>SurvConf Bamberg 2019, Bamberg, Germany Talk</i>

09/2017 **Construction of Regional Consumer Price Indices using Small Area Estimation**
with Timo Schmid, Paul Smith, Nikos Tzavidis
Statistische Woche 2017, Rostock, Germany | Poster

TEACHING EXPERIENCE

WiSe 2022/23, SoSe 2023, WiSe 2023/24, SoSe 2024	Methoden der Statistik 1 Lecture, University of Bamberg Transition to PC-based examinations
SoSe 2023	Multivariate Verfahren Lecture and Exercise class, University of Bamberg
SoSe 2024, SoSe 2026	Analyse hochdimensionaler Daten Lecture and Exercise class, University of Bamberg
WiSe 2025/26	Introduction to Econometrics Lecture, University of Bamberg
11/2027 – 9/2022	Statistics and software courses SPSS-Grundlagen, R-Grundlagen, Statistik-Grundlagen, Big Data, Panelmodelle in STATA fu:stat – statistical consulting; Chair of Applied Statistics, Freie Universität Berlin
ongoing	Supervision of student theses Bachelor's and Master's theses in survey statistics and small area estimation • Bachelor: – Lineare Regression vs. Regressionsbäume: Immobilienpreise; – Lineare Regression vs. Regressionsbäume: Startup Success Prediction • Master: – The multivariate Fay-Herriot model; – Simulation studies on random forest and extensions for grouped data; – Tabular Foundation Models in Small Area Estimation: Mixed Effects versus Group Indicator Approaches

GRANTS, FELLOWSHIPS AND AWARDS

- 2023 · Young Researchers' Prize, German Statistical Society (DStatG)
- 2023 · "Statistical Science for the Society" Award, Federal Statistical Office (for doctoral thesis)
- 07/2017 – 09/2022 · Doctoral scholarship, Studienstiftung des deutschen Volkes (extended due to maternity leave and parallel childcare)
- 2018 · InGRID-2 Visiting Grant (3-week research stay, Nov 2018), University of Southampton (S3RI)
- 2018 · Gerhard Fürst Prize, Federal Statistical Office (for Master's thesis)

ACADEMIC SERVICE & CONSULTING

- **Peer reviewer for:** *Journal of the Royal Statistical Society: Series A*; *Journal of Survey Statistics and Methodology*; *AStA Wirtschafts- und Sozialstatistisches Archiv*
- **Consulting:**
 - 2023–2024 · Contributor to R package development (*povmap*) for small area poverty estimation, World Bank Group (led by Ifeanyi Edochie and David Newhouse)
(GitHub: <https://github.com/SSA-Statistical-Team-Projects/povmap>)
 - 2017–2022 · *fu:stat* - statistical consulting for research projects and external consulting projects (e.g. for the Berlin Senate)
 - 2022–2024 · *BACES* - statistical consulting for research projects and external projects including the management of full-cycle survey projects

METHODS, SOFTWARE AND LANGUAGES

Methods	Small area estimation, survey statistics, model-based estimation, machine learning, MSE/bootstrap methods, poverty and income indicator estimation, hierarchical modelling, management of full-cycle survey projects
Software	R (incl. package development – <i>saeTrafo</i>), GitHub, VS Code, Python, STATA, SPSS;

extensive experience programming/evaluating simulations and parallel computing;
LaTeX, Markdown/Quarto, PowerPoint/Beamer (teaching & presentations);
AI tools: TabPFN, Claude Code

Languages

German (native), English (fluent)