

Dominik Vollbracht

Statistical modeling · Measurement and surveys · Automated analysis and reporting pipelines

M.Sc. in Psychology · Doctoral thesis submitted, defense in February 2027 · Available from April 2027

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PROFILE

In my doctoral thesis on the statistical modeling of survey data, I studied how response formats shape the data. I used multilevel models for longitudinal data, dynamic structural equation models, and multidimensional item response models, and I extended the Beta Item Response Model to detect response styles (preprint and R package). Alongside my doctorate, I completed the qualification program of the DFG Research Training Group *Statistical Modeling in Psychology* (SMiP). At RPTU Kaiserslautern-Landau, I also redesigned the course evaluation system on the Landau campus (around 600 courses per semester), from automated registration to reproducible analyses and reports in R and Quarto. It is now in routine use.

PROFESSIONAL EXPERIENCE

Oct 2021 – present

Research Associate

RPTU Kaiserslautern-Landau (University of Koblenz-Landau until 2022)

Research Methods and Evaluation

Department of Psychology · Research, teaching and methodological consulting

- **Doctoral thesis:** *Comparing Visual Analogue and Likert-Type Scales: Psychometric Properties and Response Styles*. Designed and ran an experience sampling study with random assignment to the two formats and analyzed it with multilevel and dynamic structural equation models (MSEM, DSEM); measurement invariance held across formats and reliability was largely comparable (published in *Behavior Research Methods*); extended the Beta Item Response Model to account for response styles (BIRM-RS), tested it in a simulation study (Stan, HPC cluster), and applied it to empirical data (preprint, under review); compared response styles across formats (BIRM-RS for visual analogue (slider) scales, multidimensional partial credit model for Likert-type scales); extreme responding largely generalized across formats (preprint, under review)
- **Methodological consulting:** advised research projects of other groups, within and beyond RPTU; co-authored several resulting papers, including in clinical and cognitive psychology
- **International collaborations:** University of Basel; Centre for Educational Measurement (CEMO), University of Oslo
- **Teaching and supervision:** taught courses in the bachelor's and master's programs; supervised 13 theses (4 as primary supervisor, 9 as second supervisor); coordinated student assistants

Oct 2021 – Dec 2025

Research Associate, Course Evaluation (DigiKompASS Project)

RPTU Kaiserslautern-Landau · Methodological Center (Zentrum für Methoden, Diagnostik und Evaluation)

University-wide project on digital teaching. Led the redesign of the course evaluation system on the Landau campus, a campus-wide feedback survey with reports for lecturers and departments (around 600 courses and 6,000–8,000 responses per semester), from concept to routine use.

- **Concept and questionnaire:** conducted a needs analysis among students; extended the core questionnaire as a common benchmark across departments, with optional, purely formative modules for different teaching formats that keep results comparable; tested the factor structure and measurement invariance across disciplines
- **Rollout:** piloted in stages and rolled out to all departments, in coordination with the data protection officer and the department committees
- **Automation:** built a web scraper in R to collect course data from the campus management system, which has no export; generated personalized LimeSurvey registrations with validation and automatic confirmations; cut registration from several workdays to a few hours per semester; lecturers can now tailor the survey to their course
- **Analysis and reporting:** rebuilt the analysis and reporting pipeline as the tested R package *setanalysis* (see Software); aggregated reports for departments and, for cohort surveys, sometimes more than 100 tailored reports per round; in routine use and now maintained by colleagues
- **LLM analysis of open-ended responses:** guided the development of a pipeline with open-source language models, piloted it and checked it against two manual content analyses

	• External clients: occasional paid evaluations commissioned by companies, some using the LLM pipeline; coordinated and delivered the reports • Further evaluations: evaluated events such as a summer school; advised other subprojects on how to evaluate their work
Mar 2025 – Apr 2025	Visiting Researcher <i>University of Basel · Statistics & Data Science, Faculty of Psychology (Prof. Mirka Henninger)</i> Collaborated on response style models; gave a colloquium talk
Dec 2019 – Sep 2021	Student Research Assistant <i>University of Koblenz-Landau · Methodological Center</i> Revised the R scripts for analyses and reports of course evaluations and university-wide cohort surveys (the basis of the later R package setanalysis); supported the registration process, including the import into EvaSys; set up account management and provided user support for the university's LimeSurvey platform; evaluated a career development program against its stated goals largely independently and wrote the evaluation report
Jun 2017 – Feb 2018	Student Research Assistant <i>University of Koblenz-Landau · Department of Psychology</i> Ran research studies; analyzed video in Blender (face tracking for emotion recognition)

SELECTED SOFTWARE

R package	setanalysis · with set-template Turns survey exports into many personalized reports from a single Quarto template (EvaSys import, one function per question type, rule-based control of report content). In routine use at RPTU; snapshot tests, pkgdown, CI with GitHub Actions. Lead developer; a student assistant made substantial contributions under my guidance
R package	birmrssim Parameter recovery simulations for the BIRM-RS: four Stan models, parallel execution, citable via doi.org/10.5281/zenodo.20305322
Web apps	Interactive model visualizations Shiny apps that run in the browser via shinylive, without a server, and explain new models to non-specialists: response-style model (BIRM-RS) · extension for responses at exactly 0 and 100 · Likert vs. slider scales

SKILLS

Statistical modeling	• Psychometrics – questionnaire development, exploratory and confirmatory factor analysis, IRT (including bounded continuous data, e.g., from visual analogue scales), and measurement invariance: checking that scores mean the same across groups, departments, or response formats before comparing them • Structural equation modeling – path analysis, latent growth curve and change models, latent state and latent state-trait models • Multilevel models and multilevel SEM (MSEM) – nested data, e.g., employees in teams or repeated measures • Intensive longitudinal data – ambulatory assessment (experience sampling), autoregressive models and dynamic SEM (DSEM) for processes in daily life • Bayesian statistics – hierarchical models in Stan and JAGS • Experimental design and power analysis – experiments and simulation studies on the robustness of methods • Latent class and profile analysis – e.g., segmenting respondents by response patterns • Regression models – linear and generalized linear models, including logistic and multinomial regression
Further methods	Basics of machine learning , multinomial processing tree (MPT) models, and stochastic process models
Programming	R – package development with tests (testthat), documentation (pkgdown), and CI (GitHub Actions) · Git and GitHub · Shiny and shinylive · SQL and Python basics (pandas, NumPy)
Reporting	Quarto (parameterized reports, custom templates and extensions, presentations, websites, and reproducible manuscripts, including my doctoral thesis), R Markdown , Typst , LaTeX , HTML , and CSS
Tools	HPC cluster (Slurm) · Stan · JAGS · Mplus · LimeSurvey (incl. API) · EvaSys
AI and LLMs	Open-source LLMs via Ollama (local and server-based) in analysis pipelines, validation of LLM output against human judgments · AI-assisted development with Claude Code
Languages	German (native) · English (fluent)

EDUCATION

expected 2027	PhD in Psychology <i>RPTU Kaiserslautern-Landau · Advisor: Prof. Tanja Lischetzke</i> Doctoral thesis on psychometric properties and response styles of Likert-type and visual analogue scales; submitted, defense in February 2027
2021	Master of Science in Psychology, with honors <i>University of Koblenz-Landau</i> Master's thesis on measurement invariance of course evaluations across disciplines
2020	Bachelor of Science in Psychology <i>University of Koblenz-Landau</i>
2013 – 2014	Year-long internship at a special education school <i>Karl-Preising-Schule, Bad Arolsen</i>
2013	Abitur (German university entrance qualification) <i>Christian-Rauch-Schule, Bad Arolsen</i>

ADDITIONAL TRAINING

2023 – 2026	Qualification program of the DFG Research Training Group <i>Statistical Modeling in Psychology</i> <i>Universities of Freiburg, Heidelberg, Mannheim, Tübingen, and RPTU · 51 program days</i> Courses on advanced statistical modeling, machine learning, scientific Python, simulation studies, LLMs as a research tool, and data visualization
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TEACHING

Courses	Multivariate Methods (bachelor's) · Advanced Multivariate Methods (master's) · Evaluation: Intensive Longitudinal Data (master's) · Psychometrics (master's); redesigned the first three with colleagues
Workshops	As an external lecturer for doctoral students and postdocs: multilevel models for longitudinal data (University of Duisburg-Essen, two days; Humboldt-Universität zu Berlin, one day) · multilevel models and multilevel SEM (Humboldt-Universität zu Berlin)
Other	Tutor for the empirical research practicum (bachelor's, weekly sessions) · mentor for first-year students · tutoring in math, chemistry, biology, and English, Studienkreis Landau (2015–2018)

AWARDS

2022 – 2025	Five teaching awards , Department of Psychology, RPTU, based on student course evaluations
2024	Young Researcher Award , Multilevel Conference, Utrecht
2023, 2025	Two Open Science Awards in Gold , Department of Psychology, RPTU, for preregistration, open data, and reproducible analyses

LEADERSHIP AND SERVICE

2016 – 2026	Musical co-director of the Landau University Choir (80–100 members): led and co-led rehearsals, conducted concerts
2019	Lead organizer of the national conference of psychology student associations (PsyFaKo) in Landau: multi-day conference with more than 250 participants
2016 – 2019	Core organizing team, PsychOlympia : multi-day national sports and networking event for psychology students (PsyFaKo)
2020 – present	Student research conferences , Department of Psychology: co-organization and evaluation
2023 – present	University committees at RPTU : doctoral ombuds committee (2025–present) · examination board (2024–2026) · committee for study and teaching (2023–2026) · faculty search committee (2023) · doctoral student representative (2023)
2023 – 2026	SMiP Research Training Group : deputy spokesperson for the doctoral students (2023–2024) · local representative at RPTU (2025–2026)
2015 – 2021	Student government, University of Koblenz-Landau : vice president of the student parliament (2018–2019) · chair of the council of departmental student associations (2016–2018) · three terms as chair of the psychology student association · financial auditor and representative on the council

APPENDIX: PUBLICATIONS AND TALKS

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Peer-Reviewed Journal Articles

- Vollbracht, D., Ottenstein, C., Ecker, S., & Lischetzke, T. (2026). Slider versus Likert scales: Psychometric properties in ambulatory assessment. *Behavior Research Methods*, 58(4), 97. doi.org/10.3758/s13428-026-02992-4
- Ottenstein, C., Ecker, S., Vollbracht, D., & Lischetzke, T. (2026). Multiverse of data sets regarding indirect measures of emotional clarity: An examination of the degrees of freedom in analyzing response times to emotion items. *Collabra: Psychology*, 12(1), 162291. doi.org/10.1525/collabra.162291
- Ecker, S., Ottenstein, C., Vollbracht, D., & Lischetzke, T. (2026). Does the procedure matter? Applying a multiverse analysis approach to negative emotion differentiation. *Collabra: Psychology*, 12(1), 159939. doi.org/10.1525/collabra.159939
- Knorr, A., Wegmann, E., Vollbracht, D., Brand, M., & Antons, S. (2026). Predicting moments of impaired control over addictive behaviors: Relevance of craving and inhibitory control measured in laboratory and ambulatory settings. *Journal of Behavioral Addictions*. doi.org/10.1556/2006.2025.00102
- Schmid, A. M., Thomas, T. A., Oelker, A., Vollbracht, D., Meurer, N., Mallon, L., Diers, M., Dominick, N., Kampa, M., Wolf, O. T., Brand, M., Müller, A., & Steins-Loeber, S. (2026). Daily stress and gaming – an ambulatory assessment study in individuals with pathological, risky, and non-problematic gaming behavior. *Acta Psychologica*, 263, 106321. doi.org/10.1016/j.actpsy.2026.106321
- Thomas, T. A., Schmid, A. M., Vollbracht, D., Oelker, A., Wolf, O. T., Brand, M., Steins-Loeber, S., & Müller, A. (2026). Pavlovian-to-instrumental transfer effect after devaluation as indicator of habitual behavior together with stress responsivity predicts daily use of buying-shopping platforms. *Acta Psychologica*, 264, 106453. doi.org/10.1016/j.actpsy.2026.106453

Preprints (Under Review)

- Vollbracht, D., Müller, M., Lischetzke, T., & Henninger, M. (2026). Extreme response style generalizes across Likert-type and visual analogue scales. *PsyArXiv*. doi.org/10.31234/osf.io/zevb7_v1
- Vollbracht, D., Lischetzke, T., & Henninger, M. (2026). Detecting response styles in visual analogue scales. *PsyArXiv*. doi.org/10.31234/osf.io/xteku_v2
- Ullitsch, E., Vollbracht, D., Zhang, L., Jover Martínez, A., Domingue, B., Haslbeck, J. M. B., Lischetzke, T., & Vogelsmeier, L. V. D. E. (2026). Likert versus visual analogue scales in ecological momentary assessment: Initial evidence that Likert scales come with reduced capacity to sustain attentiveness. *PsyArXiv*. doi.org/10.31234/osf.io/p8fg6_v1

Conference Presentations (First Author)

- Vollbracht, D., Lischetzke, T., & Henninger, M. (2025, November). *Detecting response styles in slider scales* [Talk]. SMiP Retreat Fall 2025, Ludwigshafen, Germany.
- Vollbracht, D., Lischetzke, T., & Henninger, M. (2025, September). *Detecting response styles in slider scales* [Talk]. Conference of the DGPs Methods and Evaluation Section 2025, Berlin, Germany.
- Vollbracht, D., Ottenstein, C., Ecker, S., & Lischetzke, T. (2025, May). *Slider vs. Likert scales: Psychometric properties in ambulatory assessment* [Talk]. Society for Ambulatory Assessment Conference 2025, Leuven, Belgium.
- Vollbracht, D., Ottenstein, C., Ecker, S., & Lischetzke, T. (2024, September). *Slider scales vs. radio buttons: A comparison of psychometric properties in experience sampling methods* [Talk]. 53rd DGPs Congress / 15th ÖGP Conference, Vienna, Austria.
- Vollbracht, D., Ottenstein, C., Ecker, S., & Lischetzke, T. (2024, March). *Slider scales vs. radio buttons: A comparison of psychometric properties in experience sampling methods* [Talk]. Multilevel Conference 2024 (Young Researcher Award), Utrecht, The Netherlands.
- Vollbracht, D., Ottenstein, C., Ecker, S., & Lischetzke, T. (2023, June). *Slider scales or radio buttons? Comparing the psychometric properties of slider scales with traditional radio button scales in ambulatory assessment* [Poster]. Society for Ambulatory Assessment Conference 2023, Amsterdam, The Netherlands.
- Vollbracht, D., Ottenstein, C., Ecker, S., & Lischetzke, T. (2023, June). *Slider scales or radio buttons? Comparing the psychometric properties of slider scales with traditional radio button scales in ambulatory assessment* [Poster]. SMiP Summer School 2023, Mannheim, Germany.

Peer Review

Ad hoc reviewer for *Collabra: Psychology*