

University of Mannheim  
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## Christoph Kern

November 11, 2021

### Academic Experience

- 10/2020–03/2021 **Interim Professor for Statistics and Data Science in Social Science**  
Department of Statistics, Ludwig-Maximilians-Universität (LMU) Munich
- 10/2020–present **Project Director**  
Research projects “*Fairness in Automated Decision-Making – FairADM*” and “*Consequences of Artificial Intelligence for Urban Societies (CAIUS)*”, Mannheim Centre for European Social Research (MZES)
- 02/2017–present **Post-Doctoral Researcher**  
Professorship for Statistics and Methodology (Prof. Dr. F. Kreuter, Prof. Dr. F. Keusch), Department of Sociology, University of Mannheim [on leave: Fall 2018, 2019, 2020]
- 02/2014–09/2016 **Research Associate**  
Research project “*Modeling dyadic decision-making processes of regional mobility and their labour market outcomes*”, funded by the German Research Foundation (DFG), University of Duisburg-Essen
- 04/2011–03/2017 **Research Associate**  
Chair of Empirical Social Research and Statistics (Prof. Dr. P. Stein), Institute of Sociology (IfS), University of Duisburg-Essen
- 04/2011–08/2011 **Research Associate**  
Research Unit “Flexibility and Security” (FLEX), Institute for Work, Skills and Training (IAQ), University of Duisburg-Essen
- 10/2009–02/2011 **Undergraduate Research Assistant**  
Chair of Empirical Social Research and Statistics (Prof. Dr. P. Stein), Institute of Sociology (IfS), University of Duisburg-Essen

### Visiting Positions

- 06/2021–present **Honorary Associate Professor**  
Department of Mathematics, University of Warwick, UK
- 04/2021–present **Research Assistant Professor**  
01/2020–06/2020 Joint Program in Survey Methodology (JPSM), College of Behavioral and Social Sciences, University of Maryland, USA

- 09/2019–12/2019 **Visiting Assistant Professor**
- 06/2018–12/2018 Joint Program in Survey Methodology (JPSM), College of Behavioral and Social Sciences, University of Maryland, USA
- 09/2018–08/2019 **Adjunct Faculty Associate**
- Survey Research Center (SRC), Institute for Social Research (ISR), University of Michigan, USA
- 06/2018–08/2018 **Visiting Researcher**
- Center for Data Science and Public Policy (DSaPP), University of Chicago, USA

## Education

- 12/2016 **Dr. rer. pol. (Ph.D.)** (summa cum laude)
- Dissertation “*Dyadische Modellierung des Entscheidungsprozesses regionaler Arbeitsmarktmobilität*” (“*Modeling dyadic decision-making processes of regional mobility*”); Primary adviser: Prof. Dr. P. Stein, secondary adviser: Dr. B. Weiß, University of Duisburg-Essen
- 10/2005–02/2011 **Dipl. Soz.-Wiss. (Bachelor & Masters in Sociology)**
- Major in Methods for Empirical Social Science Research, Minors in Analysis of Social Structures, Sociological Theory and Psychology, University of Duisburg-Essen

## Research Grants & Awards

- 2020 Research Grant awarded by the VW-Stiftung for the proposal “*Consequences of Artificial Intelligence for Urban Societies (CAIUS) – Using Impact-Aware AI to Make Smart Cities Socially Equitable*” (jointly with Kai Eckert, Frauke Kreuter, Heiner Stuckenschmidt and Ruben Bach), €1,496,600 (own share €293,100)
- 2020 Grant to support the initiation of international collaboration awarded by the German Research Foundation (DFG) for the proposal “*Learning Multiaccurate Classifiers for Adaptation and Estimation*”
- 2020 Research Grant awarded by the BW-Stiftung for the proposal “*Fairness in Automated Decision-Making – FairADM*” (jointly with Ruben Bach and Frauke Kreuter), €203,787
- 2019 Travel Grant awarded by the German Academic Exchange Service (DAAD)
- 2018 Research Fellowship awarded by the German Research Foundation (DFG) for the proposal “*Predicting Panel Drop-outs with Machine Learning*”
- 2017 Best Doctoral Dissertation Award awarded by the Sparkasse Duisburg for the dissertation “*Dyadische Modellierung des Entscheidungsprozesses regionaler Arbeitsmarktmobilität*”
- 2015 Early Career Award provided by the European Survey Research Association (ESRA) for the paper “*Comparing coefficients of nonlinear multivariate regression models between equations*”
- 2014 Research Grant awarded by the German Research Foundation (DFG) (STE 1054/6-1) for the proposal “*Modeling dyadic decision-making processes of regional mobility and their labour market outcomes*” (jointly with Petra Stein), €111,800
- 2013 Research Grant awarded by the Main Research Area “Transformation of contemporary societies” of the University of Duisburg-Essen, €6,900

## Professional Activities

### Journal Manuscript Reviewer

EPJ Data Science; European Journal of Criminology (EUC); Harvard Data Science Review (HDSR); Journal of the American Statistical Association (JASA); Journal for Labour Market Research (JLMR); Journal of Official Statistics (JOS); Journal of Survey Statistics and Methodology (JSSAM); Longitudinal and Life Course Studies (LLCS); Mathematics; methods, data, analyses (mda); Survey Methods: Insights from the Field (SMIF); Survey Methodology (SMJ); Survey Research Methods (SRM); Social Science Computer Review (SSCR); Zeitschrift für Soziologie (ZfS)

### Review Editor

03/2021–  
present Frontiers in Big Data – Data Analytics for Social Impact

### Conference Session Organizer

2021 JSM Conference (with R. Bach and F. Kreuter), Invited Panel: Biased Data, Biased Models? Bridging Advances in Survey Research and Computer Science for Improving Fairness in Algorithmic Decision-making.

2019 ESRA Conference (with R. Bach and M. Schierholz), Session: Predictive Modeling and Machine Learning in Survey Research, Zagreb, Croatia.

### Conference Paper Reviewer

2021 AAPOR Conference (Abstract Reviewer)

2020 BigSurv Conference (Abstract Reviewer, Poster Award Jury Member)

### Other Service

2021 Co-Organizer of *Data Science for Social Good (DSSG) 2021*, University of Warwick and LMU Munich

2019 Lead Organizer of *DataFest Germany 2019*, University of Mannheim

2017 Co-Organizer of *DataFest Germany 2017*, University of Mannheim

07/2012–  
10/2013 Representative of Academic Staff, Institute of Sociology, University of Duisburg-Essen

## Professional Affiliations

American Association for Public Opinion Research (AAPOR), American Statistical Association (ASA), Akademie für Soziologie (AS), Sektion Methoden der empirischen Sozialforschung der Deutschen Gesellschaft für Soziologie (DGS), European Survey Research Association (ESRA), Mannheim Center for Data Science (MCDS), ISA Research Committee on Logic and Methodology in Sociology (RC33)

## Software

Pfisterer, F., Dandl, S., Kern, C., and Bischl, B. (2021). mcboost: Multi-Calibration Boosting. R package version 0.3.3. <https://cran.r-project.org/web/packages/mcboost/>.

Wang, L. and Kern, C. (2020). KWML: Boosted Kernel Weighting. R package version 1.0.1. <https://github.com/chkern/KWML>.

## Publications

### Books

- [1] Kern, C. (2017). Dyadische Analyse regionaler Arbeitsmarktmobilität. Modellierung von Entscheidungsprozessen im Mehrebenenkontext. Wiesbaden: Springer VS. doi:[10.1007/978-3-658-17435-4](https://doi.org/10.1007/978-3-658-17435-4)

### Refereed Journal Articles

- [2] Kim, M. P., Kern, C., Goldwasser, S., Kreuter, F. and Reingold, O. (in press). Universal Adaptability: Target-Independent Inference that Competes with Propensity Scoring. Proceedings of the National Academy of Sciences of the United States of America (PNAS).
- [3] Badillo-Goicoechea, E., Chang, T., Kim, E., LaRocca, S., Morris, K., Deng, X., Chiu, S., Bradford, A., Garcia, A., Kern, C., Cobb, C., Kreuter, F., and Stuart, E. (in press). Global Trends and Predictors of Face Mask Usage During the COVID-19 Pandemic. BMC Public Health.
- [4] Kern, C., Weiß, B., and Kolb, J.-P. (2021). Predicting Nonresponse in Future Waves of a Probability-based Mixed-mode Panel with Machine Learning. Journal of Survey Statistics and Methodology. doi:[10.1093/jssam/smab009](https://doi.org/10.1093/jssam/smab009)
- [5] Pfisterer, F., Kern, C., Dandl, S., Sun, M., Kim, M. P., and Bischl, B. (2021). mcboost: Multi-Calibration Boosting for R. Journal of Open Source Software, 6(64), 3453. doi:[10.21105/joss.03453](https://doi.org/10.21105/joss.03453)
- [6] Kern, C., Höhne, J. K., Schlosser, S., and Revilla, M. (2020). Completion Conditions and Response Behavior in Smartphone Surveys: A Prediction Approach Using Acceleration Data. Social Science Computer Review. doi:[10.1177/0894439320971233](https://doi.org/10.1177/0894439320971233)
- [7] Kern, C., Li, Y., and Wang, L. (2020). Boosted Kernel Weighting - Using Statistical Learning to Improve Inference From Nonprobability Samples. Journal of Survey Statistics and Methodology. doi:[10.1093/jssam/smaa028](https://doi.org/10.1093/jssam/smaa028)
- [8] Erlinghagen, M., Kern, C., and Stein, P. (2020). Migration, Social Stratification and Dynamic Effects on Subjective Well Being. Advances in Life Course Research. doi:[10.1016/j.alcr.2020.100393](https://doi.org/10.1016/j.alcr.2020.100393)
- [9] Bach, R. L., Kern, C., Amaya, A., Keusch, F., Kreuter, F., Hecht, J., and Heineemann, J. (2019). Predicting Voting Behavior Using Digital Trace Data. Social Science Computer Review 39(5), 862–883. doi:[10.1177/0894439319882896](https://doi.org/10.1177/0894439319882896)
- [10] Kern, C., Klausch, T., and Kreuter, F. (2019). Tree-based Machine Learning Methods for Survey Research. Survey Research Methods 13(1), 73–93. doi:[10.18148/srm/2019.v1i1.7395](https://doi.org/10.18148/srm/2019.v1i1.7395)
- [11] Kern, C. and Stein, P. (2018). Modelling Decision-Making Processes of Regional Mobility in a Dyadic Framework. European Sociological Review 34(4), 433–451. doi:[10.1093/esr/jcy012](https://doi.org/10.1093/esr/jcy012)
- [12] Kern, C. and Stein, P. (2015). Comparing coefficients of nonlinear multivariate regression models between equations. Survey Research Methods 9(3), 159–167. doi:[10.18148/srm/2015.v9i3.6211](https://doi.org/10.18148/srm/2015.v9i3.6211)
- [13] Kern, C. (2015). Modeling Mobility Dispositions from a Multilevel Perspective. Schmollers Jahrbuch – Journal of Contextual Economics 135(1), 23–34. doi:[10.3790/schm.135.1.23](https://doi.org/10.3790/schm.135.1.23)

### Book Chapters

- [14] Kern, C. (2020). Machine Learning Interpretation Tools. In: Atkinson, P., Delamont, S., Cernat, A., Sakshaug, J. W., Williams, R. A. (Eds.). SAGE Research Methods Foundations. SAGE Publishing. doi:10.4135/9781526421036913344
- [15] Kim, B., Kern, C., Morgan, J. S., Hunter, C., and Kumar, A. (2020). *Workbooks*. In: Foster, I., Ghani, R., Jarmin, R. S., Kreuter, F., and Lane, J. (Eds.). Big Data and Social Science: Data Science Methods and Tools for Research and Practice. Second Edition. Boca Raton, FL: CRC Press Taylor & Francis Group. <https://textbook.coleridgeinitiative.org/>
- [16] Stein, P. and Kern, C. (2018). Konzeption eines dyadischen Modells zur Analyse von Entscheidungsprozessen räumlicher Arbeitsmarktmobilität im Mehrebenenkontext. In: Quack, S., Schulz-Schaeffer, I., Shire, K., Weiß, A. (Eds.): Transnationalisierung der Arbeit. Wiesbaden: Springer VS. doi:10.1007/978-3-658-20939-1
- [17] Stein, P. and Kern, C. (2015). Dyadische Modellierung regionaler Arbeitsmarktmobilität. In: Lessenich, S. (Ed.): Routinen der Krise – Krise der Routinen. Verhandlungen des 37. Kongresses der Deutschen Gesellschaft für Soziologie in Trier 2014.
- Conference/ Working Papers**
- [18] Kern, C., Bach, R. L., Mautner, H., and Kreuter, F. (2021). Fairness in Algorithmic Profiling: A German Case Study. arXiv. <https://arxiv.org/abs/2108.04134>.
- [19] Kuppler, M., Kern, C., Bach, R. L., Kreuter, F. (2021). Distributive Justice and Fairness Metrics in Automated Decision-making: How Much Overlap Is There? arXiv. <https://arxiv.org/abs/2105.01441>.
- [20] Shunk, G. K., Gomez, X. R., Kern, C., Aversch, N. J. H. (2021). A Self-Replicating Radiation-Shield for Human Deep-Space Exploration: Radiotrophic Fungi can Attenuate Ionizing Radiation aboard the International Space Station. bioRxiv. doi:10.1101/2020.07.16.205534.
- [21] Badillo-Goicoechea, E., Chang, T., Kim, E., LaRocca, S., Morris, K., Deng, X., Chiu, S., Bradford, A., Garcia, A., Kern, C., Cobb, C., Kreuter, F., and Stuart, E. (2020). Global Trends and Predictors of Face Mask Usage During the COVID-19 Pandemic. arXiv. <https://arxiv.org/abs/2012.11678>.
- [22] Kern, C., Weiß, B., and Kolb, J.-P. (2019). A Longitudinal Framework for Predicting Nonresponse in Panel Surveys. arXiv. <https://arxiv.org/abs/1909.13361>.
- [23] Kolb, J.-P., Weiß, B. and Kern, C. (2019). Using Predictive Modelling to Identify Panel Nonresponse. Proceeding of the 62nd ISI World Statistics Congress 2019, Volume 7, 206–214.
- [24] Erlinghagen, M., Kern, C., and Stein, P. (2019). Internal Migration, Social Stratification and Dynamic Effects on Subjective Well Being. SOEPpapers on Multidisciplinary Panel Data Research 1046. DIW Berlin.
- [25] Kern, C. and Stein, P. (2016). Effect Comparison in Multilevel Structural Equation Models with Non-Metric Outcomes. JSM Proceedings, Social Statistics Section. Alexandria, VA: American Statistical Association. 3892–3901.
- [26] Kern, C. (2014): Regional structures and mobility dispositions: A multilevel proportional- & partial-proportional odds approach. SOEPpapers on Multidisciplinary Panel Data Research 681. DIW Berlin. doi:10.2139/ssrn.2493094
- Book Reviews**
- [27] Stein, P. and Kern, C. (2016). Rezension: Friedrichs, J. and Nonnenmacher, A. (Eds.), 2014: Soziale Kontexte und Soziale Mechanismen. Soziologische Revue 39 (3), 480–484. doi:10.1515/srsr-2016-0064

## Reports

- [28] Kreuter, F., Kim, E., LaRocca, S., Morris, K., Kern, C., Garcia, A. (2020). Data on Economic Anxiety Offer New Opportunities for Insights on the Global Effects of the COVID-19 Pandemic. <https://socialdatascience.umd.edu>
- [29] Bosch, G., Kalina, T., Kern, C., Neuffer, S., Schwarzkopf, M., and Weinkopf, C. (2011). Evaluation bestehender gesetzlicher Mindestlohnregelungen – Branche: Gebäudereinigung. Abschlussbericht. Duisburg: Institut Arbeit und Qualifikation.

## Presentations

- 2021
- Kern, C. (2021). When Small Decisions Have Big Impact: The Hidden Consequences of Algorithmic Decision-Making. (**Invited talk**). Seminar series in statistics, Örebro University.
- Classe, F. and Kern, C. (2021). Latent Variable Effect Forests. GESIS workshop on Causality in the Social Sciences III – Heterogeneous Causal Effects.
- Kuppler, M., Bach, R., Kern, C., Kreuter, F. (2021). The Distributive Justice of Fairness Metrics in Automated Decision-making: A Critical Evaluation. DGS & ÖGS Soziologiekongress 2021.
- Kreuter, F. and Kern, C. (2021). Fairness in AI (automated) Decision Making. Colloquium of the Department of Statistics and the Department of Sociology at LMU Munich. [abstract](#)
- Kern, C., Höhne, J. K., Gavras, K. and Schlosser, S. (2021). Automated Emotion Recognition with Voice Data in Smartphone Surveys. ESRA 2021 virtual conference.
- Gerdon, F., Kern, C., Bach, R., Kreuter, F., Stuckenschmidt, H., Eckert, K. (2021). From Bias to Impact: How Can Algorithmic Decision-Making Affect Social Inequality? Digitalisation Research and Network Meeting (DigiMeet) 2021.
- Bach, R., Kern, C., Gerdon, F., Kreuter, F. (2021). Mitigating Biases in AI with Survey Science. AAPOR 2021 virtual conference. [slides](#)
- Kern, C., Höhne, J. K., Gavras, K. and Schlosser, S. (2021). Automated Emotion Recognition with Voice Data in Smartphone Surveys. AAPOR 2021 virtual conference. [slides](#)
- Kern, C. (2021). Statistical Learning and Survey Science – Improving Inference from Nonprobability Samples and Beyond. (**Invited talk**). Department of Statistics Seminar Series, Stockholm University.
- 2020
- Kern, C. (2020). Multiaccurate Predictors Under Distributional Shifts [joint work with Shafi Goldwasser, Michael P. Kim, Frauke Kreuter and Omer Reingold]. Colloquium of the Department of Statistics and the Department of Sociology at LMU Munich. [abstract](#)
- Kern, C., Li, Y. and Wang, L. (2020). Boosted Kernel Weighting – Using Statistical Learning to Improve Inference from Nonprobability Samples. BigSurv20 Conference.
- Kern, C., Höhne, J. K. and Schlosser, S. (2020). The Sound of Respondents: How Do Emotional States Affect the Quality of Voice Answers in Smartphone Surveys? BigSurv20 Conference.
- Kreuter, F., Bach, R., Kern, C. (2020). Fairness in Automated Decision-Making – FairADM. Poster presented at the Research Day of the Baden-Württemberg Foundation. [poster](#)
- Gerdon, F., Theil, K., Kern, C., Bach, R., Kreuter, F., Stuckenschmidt, H. and Eckert, K. (2020). Exploring Impacts of Artificial Intelligence on Urban Societies with Social Simulations. DGS-Kongress 2020.

- Kern, C., Bach, R. L. and Bonnay, D. (2020). What You Read Is Who You Support? Online News Consumption and Political Preferences. General Online Research Conference (GOR) 2020. [video](#)
- Kern, C., Bach, R. L. and Bonnay, D. (2020). What You Read Is Who You Support? Online News Consumption and Political Preferences. 6th International Conference on Computational Social Science (IC2S2).
- Kern, C., Li, Y. and Wang, L. (2020). Boosted Kernel Weighting – Using Statistical Learning to Improve Inference from Nonprobability Samples. AAPOR virtual conference. [slides](#)
- Kern, C., Bach, R. L. and Bonnay, D. (2020). Augmenting Survey Data with Web Content from Digital Traces to Study Political Behavior. AAPOR virtual conference. [slides](#)
- 2019 Kern, C. (2019). Tree-based Machine Learning in Survey Research. (**Invited talk**). UN Statistics Division Brown Bag Series. New York, USA.
- Kern, C. (2019). Machine Learning Applications in Survey Research: Predicting Nonresponse in Panel Studies. UMIACS Machine Learning Seminar Series. College Park, USA.
- Kern, C., Weiß, B. and Kolb, J.-P. (2019). Predicting Panel Nonresponse with Machine Learning in a Longitudinal Framework. Conference on Current Trends in Survey Statistics 2019, Singapore.
- Kern, C., Weiß, B. and Kolb, J.-P. (2019). A Longitudinal Framework for Predicting Nonresponse in Panel Surveys. ESRA 2019, Zagreb, Croatia. [slides](#)
- Kern, C., Schlosser, S., Höhne, J.K. and Revilla, M. (2019). Predicting Completion Conditions in Mobile Web Surveys with Acceleration Data. ESRA 2019, Zagreb, Croatia. [slides](#)
- Kern, C. (2019). Machine Learning in Survey Research: Modeling Nonresponse and Completion Conditions from a Prediction Perspective. ITACOSM 2019, **Invited session**: Machine learning for socio-economic surveys. Florence, Italy. [slides](#)
- Kern, C., Weiß, B. and Kolb, J.-P. (2019). A Longitudinal Framework for Predicting Nonresponse in Panel Surveys. AAPOR 2019, Toronto, Canada. [slides](#)
- Bach, R., Kern, C., Amaya, A., Keusch, F., Kreuter, F., Hecht, H. and Heinemann, H. (2019). Predicting Political Behavior and Preferences Using Digital Trace Data. AAPOR 2019, Toronto, Canada. [slides](#)
- Kern, C., Weiß, B. and Kolb, J.-P. (2019). Predicting Panel Nonresponse with Machine Learning in a Longitudinal Framework. GESIS Panel User Conference. Mannheim, Germany. [slides](#)
- Bach, R., Kern, C., Amaya, A., Keusch, F., Kreuter, F., Hecht, H. and Heinemann, H. (2019). Predicting Political Behavior and Preferences Using Digital Trace Data. General Online Research Conference (GOR) 2019, Cologne, Germany.
- Kern, C., Höhne, J. K., Schlosser, S. and Revilla, M. (2019). SurveyMotion: Predicting completion conditions in mobile web surveys by using acceleration data. (**Invited talk**). Mobile Apps and Sensors in Surveys (MASS) workshop, Mannheim, Germany.
- 2018 Kolb, J.-P., Weiß, B. and Kern, C. (2018). Using Predictive Modeling to Identify Panel Dropouts. BigSurv 2018, Barcelona, Spain.
- Bach, R., Kern, C., Amaya, A., Keusch, F., Kreuter, F., Hecht, H. and Heinemann, H. (2018). Predicting Political Behavior and Attitudes Using Digital Trace Data. Poster presented at BigSurv 2018, Barcelona, Spain. [poster](#)
- Kern, C. (2018). Predicting Panel Nonresponse with Machine Learning in a Longitudinal Framework. JPSM/MPSM Seminar Series, University of Maryland, College Park, USA. [video](#)

- Kern, C. (2018). Predicting Panel Drop-Outs with Machine Learning. JSM 2018, **Invited session: Improving Survey Data Quality with Machine Learning Techniques**, Vancouver, Canada. [slides](#)
- Weiß, B., Kolb, J.-P. and Kern, C. (2018). Using Predictive Modeling in Survey Methodology to Identify Panel Nonresponse. JSM 2018, Vancouver, Canada. [slides](#)
- Kern, C. (2018). Data-driven Prediction of Panel Attrition. AAPOR 2018, Denver, USA.
- 2017 Kern, C. (2017). Modeling decision-making processes of regional mobility in a dyadic framework. MZES AB A-Colloquium, Mannheim.
- Kern, C. (2017). Data-driven Prediction of Panel Nonresponse. GESIS Panel Research Colloquium, Mannheim.
- Kern, C. (2017). Data-driven Prediction of Panel Nonresponse. ESRA Conference 2017, Lisbon, Portugal.
- Kern, C. and Stein, P. (2017). Effect Comparison in Multilevel Structural Equation Models with Non-Metric Outcomes. Meeting of the Working Group Structural Equation Modeling, Ghent, Belgium. [slides](#)
- 2016 Kern, C. and Stein, P. (2016). Dyadische Modellierung des Entscheidungsprozesses räumlicher Mobilität im Mehrebenenkontext. DGS-Kongress 2016, Bamberg.
- Kern, C. and Stein, P. (2016). Effect comparison in nonlinear dyadic mixed-effects models between equations. ASA 2016, Seattle, USA.
- Kern, C. and Stein, P. (2016). Effect comparison in nonlinear dyadic mixed-effects models between equations. JSM 2016, Chicago, USA.
- Kern, C. (2016). Effektvergleiche in dyadischen Mehrebenenmodellen mit nicht-metrischen abhängigen Variablen. Frühjahrstagung der DGS-Sektion Methoden der empirischen Sozialforschung, Duisburg.
- Kern, C. and Stein, P. (2016). Implicit rescaling in multivariate mixed-effects models with nonmetric outcomes. DAGStat 2016 – Statistics under one umbrella, Göttingen.
- 2015 Stein, P. and Kern, C. (2015). Effect comparison in nonlinear dyadic models. ESA Conference 2015, Prague, Czech Republic.
- Kern, C. and Stein, P. (2015). Comparing coefficients of nonlinear multivariate regression models between equations. ESRA Conference 2015, Reykjavik, Iceland.
- 2014 Stein, P. and Kern, C. (2014). Dyadische Modellierung regionaler Arbeitsmarktmobilität. DGS-Kongress 2014, Sektion: Methoden der empirischen Sozialforschung, Trier.
- Stein, P. and Kern, C. (2014). Modellierung von dyadischen Entscheidungsprozessen räumlicher Mobilität und ihren Konsequenzen. Poster presented at DGS-Kongress 2014, Trier.
- Stein, P. and Kern, C. (2014). Regional structures and mobility dispositions: A multilevel proportional- & partial-proportional odds approach. 11th International German Socio-Economic Panel User Conference, Berlin.
- Stein, P. and Kern, C. (2014). Modeling Dyadic Decision-making Processes of Regional Mobility and their Labor Market Outcomes. Workshop Transnational Labor Markets: Bridging Different Regulatory and Cultural Contexts, Duisburg.

## Teaching

### Ludwig-Maximilians-Universität (LMU) Munich

WS 2020/21

*Statistik I für Studierende der Soziologie, des Nebenfachs Statistik, der Medieninformatik und der Cultural and Cognitive Linguistics (V)*



WS 2020/21	<i>Wirtschafts- und Sozialstatistik (V+Ü)</i> (with Thomas Augustin)
WS 2020/21	<i>Fairness in Machine Learning</i>
	<b>International Program in Survey and Data Science (IPSDS)</b>
Summer 2020, Fall 2021	<i>Machine Learning II</i> (with Trent Buskirk, SURV753)
	<b>University of Maryland</b>
Fall 2021	<i>Fundamentals of Computing and Data Display</i> (with Ruben Bach, SURV727, SurvMeth727)
Fall 2018, 2019	<i>Machine Learning for Social Science</i> (SURV699U)
Fall 2018, 2019	<i>Fundamentals of Computing and Data Display</i> (SURV727, SurvMeth727)
	<b>University of Mannheim</b>
HWS 2021	<i>Research Practicum II: Big Data in the Social Sciences</i> (in German)
FSS 2021	<i>Interpretability and Fairness in Machine Learning</i>
FSS 2020	<i>Machine Learning</i>
FSS 2019	<i>Machine Learning for Social Science</i>
FSS 2019, 2020	<i>Fundamentals of Computing and Data Display</i>
HWS 2017	<i>Research Practicum II</i> (in German)
FSS 2017	<i>Research Practicum I</i> (in German)
FSS 2017, 2018	<i>Machine Learning in the Social Sciences</i>
	<b>University of Duisburg-Essen</b>
WS 2016/17	<i>An Introduction to Machine Learning in R</i> (in German)
SS 2016	<i>Advanced Regression Methods in R</i> (in German)
SS 2014, 2015	<i>Regression Models for Categorical Dependent Variables</i> (in German)
SS 2013	<i>Essential Mathematics for Social Research</i> (in German)
SS 2012	<i>An Introduction to Stata and R</i> (in German)
SS 2012	<i>Research Practicum II</i> (in German)
WS 2011/12	<i>Research Practicum I</i> (in German)
WS 2011/12 – WS 2015/16	<i>Data Analysis Programmes</i> (in German)
	<b>Short Courses and Workshops</b>
10/12/2021	<i>Introduction to Machine Learning</i> , Workshop at the Symposium on Machine Learning & Qualitative Dokumentenanalyse, DZHW
07/12/2021 – 07/14/2021	<i>Machine Learning for Social Sciences</i> , Online course at the <a href="#">RECSM Summer Methods School 2021</a> , Universitat Pompeu Fabra Barcelona
08/10/2020 – 08/21/2020	<i>Introduction to Big Data for Social Science</i> , Online short course w. F. Kreuter, J. Lane and B. Feder
09/23/2019 – 09/24/2019	<i>Introduction to Big Data for Social Science</i> , JPSM short course w. F. Kreuter, Washington DC

- 03/25/2019 – 03/27/2019 *Big Data Analysis*, Workshop w. F. Kreuter, M. Neunhoeffler and S. Sternberg, Bundesbank Frankfurt
- 10/2018 – 12/2018 *Applied Data Analytics* (<https://coleridgeinitiative.org/>), Teaching Assistance, University of Maryland
- 03/21/2018 – 03/22/2018 *Machine Learning for Social Science*, Workshop w. M. Schierholz and J. Geßendorfer, IAB Nürnberg
- 02/06/2018 – 02/07/2018 *Machine Learning for Social Science*, Workshop w. M. Schierholz and J. Geßendorfer, IAB Nürnberg
- 10/2017 – 12/2017 *Applied Data Analytics* (<https://coleridgeinitiative.org/>), Teaching Assistance, University of Maryland
- 11/15/2017 – 11/17/2017 *Big Data Analysis*, Workshop w. F. Kreuter, M. Schierholz and S. Sternberg, Bundesbank Frankfurt
- 10/20/2017 *Introduction to Web Scraping and Machine Learning*, Workshop w. M. Schierholz at the University of Bremen
- 04/08/2017 *CART and Random Forests in R*, Short Tutorial at DataFest 2017, Mannheim
- 01/16/2017 – 01/17/2017 *An Introduction to R* (in German), Workshop at Sozialwissenschaftliches Umfragezentrum (SUZ), Duisburg
- 11/24/2015 *Objects, Matrices and Simulations in R* (in German), Short course at the University of Duisburg-Essen
- 05/16/2013 *An Introduction to R* (in German), Short course at the University of Duisburg-Essen

### **Tutoring**

University of Duisburg-Essen

- WS 2010/11 *Multivariate Data Analysis* (in German)
- SS 2010 *Longitudinal Data Analysis* (in German)
- SS 2010 *Statistical Classification in the Social Sciences* (in German)
- WS 2009/10 *Latent Variable Models* (in German)

### **Supervision**

Supervision of 11 Master's theses and 7 Bachelor's theses at the University of Mannheim, University of Duisburg-Essen and IPSDS

## **Professional Development**

- 07/2018 JSM Continuing Education Course "Master the Tidyverse: An Introduction to R for Data Science", Vancouver (Canada)
- 07/2017 ESRA Short Course "Applications of Big Data to Social Sciences", Lisbon (Portugal)
- 08/2016 JSM Continuing Education Course "A Statistical Approach to Machine Learning: Boosting, Nearest Neighbors, Random Forests and Support Vector Machines", Chicago (USA)
- 07/2015 ESRA Short Course "Multilevel Structural Equation Modeling", Reykjavik (Iceland)
- 08/2014 GESIS Summer School "Sampling, Weighting and Estimation", Cologne (Germany)

- 09/2012      GESIS Spring Seminar “Mathematical Tools for Social Scientists”, Cologne (Germany)
- 09/2011      Datalab “Analysis of longitudinal data”, Bielefeld (Germany)