

Ross Jacobucci
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Notre Dame, Indiana 46556
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Curriculum Vitae
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June 8, 2020

Professional History & Education

- **Assistant Professor of Psychology**
University of Notre Dame
2017 - Current
Notre Dame, Indiana
- **Ph.D. Psychology**
University of Southern California (USC)
August 2017
Los Angeles, California
 - Area: Quantitative Methods
 - Dissertation: Evaluating the Stability of Decision Tree Algorithms.
- **M.A. Psychology**
University of Southern California (USC)
December 2015
Los Angeles, California
 - Area: Quantitative Methods
 - Thesis: Regularized Structural Equation Modeling.
- **M.A. Psychology**
University of Northern Iowa (UNI)
2011-2013
Cedar Falls, Iowa
 - Individualized Study: Quantitative Emphasis
- **B.A. Psychology**
Luther College
June 2010
Decorah, Iowa
 - Thesis: The Effect of Mental Imagery on Performance in Golf.

Research Funding

• Ongoing

- Ross Jacobucci (PI)
Notre Dame Faculty Initiation Grant.
Dynamic Multimodal Assessment of Suicide Risk: An Initial Application.
Total Direct: \$9,930
1/1/20-12/31/20
- Ross Jacobucci (PI)
Loan Repayment Programs (Clinical)
National Institutes of Mental Health
Integrative Data Analysis for Increasing the Prediction of Suicide
7/1/19 - 6/30/21
- Ross Jacobucci (Co-PI) & Brooke Ammerman (Co-PI)
Advanced Diagnostics and Therapeutics Discovery Fund.
Using Integrative Data Mining to Improve the Prediction of Suicide: An Initial Application.
Total Direct: \$41,068
8/13/18 - 8/13/20

• Completed

- Ross Jacobucci (PI)
Small Research and Creative Work grant
Institute for Scholarship in the Liberal Arts (ND)
Text Analysis for the Prediction of Suicide: A Pilot Study
\$2,475
Academic Year 2018-2019

Books

Jacobucci, R., Grimm, K. J., & Zhang, Z. (under contract). *Machine learning for social and behavioral research*. New York, NY: Guilford.

Publications

* refers to undergraduate students, @ graduate advisees (@₁ for graduate advisees that I was not the primary mentor), and (+) for postdocs.

• Peer Reviewed Publications

Jiang, M., Ammerman, B.A., @₁Zeng, Q., **Jacobucci, R.**, & @₁Brodersen, A. (in press). Phrase-level Pairwise Topic Modeling to Uncover Helpful Peer Responses to Online Suicidal Crises. *Humanities & Social Sciences Communications*.

Forrest, L., **Jacobucci, R.**, & Grilo, C. M. (in press). Empirically-Determined severity levels for binge-eating disorder outperform existing severity classification schemes. *Psychological Medicine*.

Jacobucci, R., Littlefield, A., Millner, A. J., Kleiman, E. M., & Steinley, D. (in press). Evidence of inflated prediction performance: A commentary on machine learning and suicide research. *Clinical Psychological Science*.

Jacobucci, R., Ammerman, B. A., & @Wilcox, K. (in press). The application of machine learning for text-based responses to improve suicide risk prediction. *Suicide and Life Threatening Behavior*.

Jacobucci, R., Ammerman, B. A., & @Li, X. (in press). Using ordinal regression for advancing the understanding of distinct suicide outcomes. *Suicide and Life Threatening Behavior*.

Grimm, K. J., & **Jacobucci, R.** (in press). Reliable trees: Reliability informed recursive partitioning for psychological data. *Multivariate Behavioral Research*.

@₁Hong, M., **Jacobucci, R.**, & Lubke, G. (in press). Deductive Data Mining. *Psychological Methods*.

Burke, T. A., **Jacobucci, R.**, Ammerman, B. A., & Diamond, G. (in press). Using machine learning to classify suicide attempt history among youth in medical care settings. *Journal of Affective Disorders*.

Serang, S., **Jacobucci, R.**, Stegmann, G., Brandmaier, A. M., Cuianos, D., & Grimm, K. J. (in press). Mplus Trees: Structural equation model trees using Mplus. *Structural Equation Modeling*.

Liang, X., & **Jacobucci, R.** (in press). Regularized Structural Equation Modeling to Detect Measurement Bias: Evaluation of Lasso, Adaptive Lasso and Elastic Net. *Structural Equation Modeling*.

Ammerman, B.A., **Jacobucci, R.**, Turner, B. J., Dixon-Gordon, K., & McCloskey, M.S. (in press). Quantifying the importance of lifetime frequency versus number of methods used in the consideration of NSSI severity. *Psychology of Violence*.

Vargas, I., Haefel, G.J., **Jacobucci, R.**, Boyle, J.T., Mayer, S.E., & Lopez-Duran, L. (in press). Negative Cognitive Style And Cortisol Reactivity To A Laboratory Stressor: A Preliminary Study. *International Journal of Cognitive Therapy*.

Jacobucci, R., & Grimm, K. J. (2020). Machine learning and psychological research: The unexplored effect of measurement. *Perspectives on Psychological Science*, 15, 809-816.

Serang, S. & **Jacobucci, R.** (2020). Exploratory mediation analysis of dichotomous outcomes via regularization. *Multivariate Behavioral Research*, 55, 69-86.

@₁Nelson, N. A., Bergeman, C. S., & **Jacobucci, R.** (2019). Future time perspective in mid-to-later life: The role of personality. *The Journal of Gerontology: Psychological Science*, gbz110.

- Ammerman, B. A., Hong, M., Sorgi, K. M., **Jacobucci, R.**, Park, Y., & McCloskey, M. S. (2019). An examination of individual forms of nonsuicidal self-injury. *Psychiatry Research*, *278*, 268-274.
- Burke, T.A., Ammerman, B.A., & **Jacobucci, R.** (2019). The use of machine learning in the study of suicidal and non-suicidal self-injurious thoughts and behavior: A systematic review. *Journal of Affective Disorders*, *245*, 869-884.
- Jacobucci, R.**, Serang, S., & Grimm, K. J. (2019). A short note on complications in interpretation with the dual change score model . *Structural Equation Modeling*, *26*, 924-930.
- Ammerman, B.A., **Jacobucci, R.** & McCloskey, M.S. (2019). Re-considering important outcomes of the NSSI disorder diagnostic criterion A. *Journal of Clinical Psychology*, *75*, 1084-1097.
- Jacobucci, R.**, Brandmaier, A., & Kievit, R. (2019). A practical guide to variable selection in structural equation models with regularized MIMIC models. *Advances in Methods and Practices in Psychological Science*, *2*, 55-76.
- Usami, S., **Jacobucci, R.**, & Hayes, T. (2019). The performance of latent growth curve model based structural equation model trees to uncover population heterogeneity in growth trajectories. *Computational Statistics*, *34*, 1-22.
- Ammerman, B. A., Serang, S., **Jacobucci, R.**, Burke, T., A., Alloy, L. B., & McCloskey, M. S. (2018). Exploratory analysis of mediators in the relationship between childhood maltreatment and suicidal behavior. *Journal of Adolescence*, *69*, 103-112.
- Stegmann, G., **Jacobucci, R.**, Serang, S., & Grimm, K. J. (2018). Recursive partitioning with nonlinear change trajectories. *Multivariate Behavioral Research*, *53*, 559-570.
- Burke, T. A., **Jacobucci, R.**, Ammerman, B. A., Piccirillo, M., McCloskey M., & Alloy, L. B. (2018). Identifying the relative importance of non-suicidal self-injury features in predicting suicidal ideation and behavior using exploratory data mining. *Psychiatry Research*, *262*, 175-183.
- Ammerman, B. A., **Jacobucci, R.**, & McCloskey, M. S. (2018). Using exploratory data mining to identify important predictors of non-suicidal self-injury frequency. *Psychology of Violence*, *8*, 515-525.
- Ammerman, B. A., **Jacobucci, R.**, Kleiman, E. M., Uyeji, L., & McCloskey, M. S. (2018). The relationship between nonsuicidal self-injury age of onset and severity of self-harm. *Suicide and Life Threatening Behavior*, *48*, 31-37.
- Jacobucci, R.**, Grimm, K. J. (2018). Comparison of frequentist and Bayesian regularization in structural equation modeling. *Structural Equation Modeling*, *25*, 639-649.
- Stegmann, G., **Jacobucci, R.**, Harring, J., & Grimm, K. J. (2018). Nonlinear mixed-effects modeling programs in R. *Structural Equation Modeling*, *25*, 160-165.
- Serang, S., **Jacobucci, R.**, Brimhall, K. C., & Grimm, K. J. (2017). Exploratory mediation analysis via regularization. *Structural Equation Modeling*, *24*, 733-744.
- Jacobucci, R.**, Grimm, K. J., & McArdle, J. J. (2017). A comparison of methods for uncovering sample heterogeneity: Structural equation model trees and finite mixture models. *Structural Equation Modeling*, *24*, 270-282.
- Ammerman, B. A., **Jacobucci, R.**, Kleiman, E. M., Muehlenkamp, J. J., & McCloskey, M. S. (2017). Development and validation of empirically derived frequency criteria for NSSI disorder using exploratory data mining, *Psychological Assessment*, *29*, 221-231.
- Jacobucci, R.**, Grimm, K. J., & McArdle, J. J. (2016). Regularized structural equation modeling, *Structural Equation Modeling*, *23*, 555-566. doi:10.1080/10705511.2016.1154793. PMCID: 4937830
- Hayes, T., Usami, S., **Jacobucci, R.**, & McArdle, J. J. (2015). Using classification and regression trees (CART) and random forests to analyze attrition in longitudinal data: Results from two simulation studies, *Psychology and Aging*, *30*, 911-929. doi:10.1037/pag0000046. PMCID: 4743660

Skaar, N. R., Christ, T. J., & **Jacobucci, R.** (2014). Measuring adolescent prosocial and health risk behavior in schools: Initial development of a screening measure. *School Mental Health*, 6, 137-149.
doi:10.1007/s12310-014-9123-y

• Other Publications

Jacobucci, R., @Shao, S., & @Hattori, M. (2020). On the integration of machine learning and psychometrics. *The Score (APA Div. 5 Newsletter)*.

@Hong, M., **Jacobucci, R.**, & Lubke, G. (accepted). Deductive Data Mining. *Psychological Methods*. Hong, M. R., **Jacobucci, R.** (2019). Review of Growth Modeling: Structural Equation and Multilevel Modeling Approaches (Grimm, Ram & Estabrook, 2017). *Psychometrika*, 84, 327-332.

Grimm, K. J., **Jacobucci, R.**, McArdle, J. J. (January, 2017). Big data methods and psychological science. *Psychological Science Agenda*.

• Chapters

Grimm, K. J., Stegmann, G., **Jacobucci, R.**, & Serang, S. (in press). Big data in developmental psychology. In S. E. Woo, L. Tay, & R. W. Proctor (Eds.), *Big data methods for psychological research: New horizons and challenges*. Washington, DC: American Psychological Association.

Jacobucci, R. & Grimm, K. J. (2018). Regularized estimation of multivariate latent change score models. *Advances in Longitudinal Models for Multivariate Psychology: A Festschrift for Jack McArdle*, 109-125. Routledge, London.

Grimm, K. J. & **Jacobucci, R.** (2018). Individually varying time metrics in latent change score models. *Advances in Longitudinal Models for Multivariate Psychology: A Festschrift for Jack McArdle*. Routledge, London.

• Technical Reports

Jacobucci, R. (2017). regsem: Regularized Structural Equation Modeling. *arXiv preprint arXiv:1703.08489*.

Presentations

• Invited Presentations

Jacobucci, R. (2020, October). *Using imperfectly measured predictors in machine learning*. Talk to be presented at the Workforce Science workshop at Rice University in Houston, Texas.

Jacobucci, R. (2019, May). *Flexible specification of large structural equation models with regularization*. Keynote speech given at the Big Data in Psychology Pre-Conference in Dubrovnik, Croatia. Video: <https://www.psycharchives.org/handle/20.500.12034/2118>

Jacobucci, R. (2019, February). *Novel assessment strategies for improving our understanding of mental health*. Invited talk given at the Quant Methods colloquium at Vanderbilt University.

Jacobucci, R., Hong, M., Brandmaier, A., Ammerman, B., & McCloskey, M. (2018, October). *Assessing Continuous Versus Categorical Diagnosis Using Latent Variable Modeling*. Invited talk given at the Arizona State Quantitative Psychology brown bag.

Jacobucci, R., Hong, M., Brandmaier, A., Ammerman, B., & McCloskey, M. (2018, October). *Assessing Continuous Versus Categorical Diagnosis Using Latent Variable Modeling*. Invited talk given at the Quantitative Developmental Systems Methodology Core at Penn State University.

Jacobucci, R. (2018, July). *Flexible specification of large structural equation models with regularization*. Invited talk given at the Max Planck Institute for Human Development in Berlin, Germany.

• Oral Presentations

- McClure, K.E., **Jacobucci, R.**, & Ammerman, B.A. (2020, March). Disclosure of Suicidality and Open-Response Questions: A Blended Text Mining Approach. Paper submitted for presentation at the 54th Annual Convention for the Association for Behavioral and Cognitive Therapies, Philadelphia, Pennsylvania.
- Jacobucci, R.** (2019, November). The use text mining for clinical research: An overview of the methodology. Paper presented at the 53rd Annual Convention for the Association for Behavioral and Cognitive Therapies, Atlanta, Georgia.
- Ammerman, B.A., Wilcox, K. T., & **Jacobucci, R.** (2019, November) A nuanced examination of the relationship between social connectedness and suicidal ideation. Paper presented at the 53rd Annual Convention for the Association for Behavioral and Cognitive Therapies, Atlanta, Georgia.
- Park, Y., O'Loughlin, C. M., **Jacobucci, R.**, & Ammerman, B.A. (2019, November). Examining person-specific reasons for living in the prediction of suicidal ideation: A text mining approach. Paper presented at the 53rd Annual Convention for the Association for Behavioral and Cognitive Therapies, Atlanta, Georgia.
- Wilcox, K. T., **Jacobucci, R.**, McCloskey, M. S. & Ammerman, B.A. (2019, November). Evaluating personal narratives of interpersonal relationships via text mining to predict nonsuicidal self-injury. Paper presented at the 53rd Annual Convention for the Association for Behavioral and Cognitive Therapies, Atlanta, Georgia.
- Jacobucci, R.**, Hong, M., Brandmaier, A., Ammerman, B., & McCloskey, M. (2018, September). *Assessing Continuous Versus Categorical Diagnosis Using Latent Variable Modeling*. Talk given at the Quantitative Studies Group at the University of Notre Dame.
- Stegmann, G., **Jacobucci, R.**, Serang, S., & Grimm, K. J. (2018, July). *Identifying divergent nonlinear growth trajectories using recursive partitioning*. International Meeting of Psychometric Society. New York, NY.
- Grimm, K. J., Stegmann, G., **Jacobucci, R.**, & Serang, S. (2018, March). Machine learning approaches to understanding differences in longitudinal change trajectories. Keynote address at the 6th Annual Meeting of the Texas Universities' Educational Statistics and Psychometrics Alliance.
- Jacobucci, R.** (2017, November). *Exploratory data mining for a single outcome in clinical research*. Paper presented at the 51st Annual Convention for the Association for Behavioral and Cognitive Therapies, San Diego, California.
- Ammerman, B. A., **Jacobucci, R.**, Turner, B. J., Serang, S., & McCloskey, M. S. (2017, November). *Quantifying the importance of lifetime frequency versus number of methods used in the consideration of NSSI severity*. Paper presented at the 51st Annual Convention for the Association for Behavioral and Cognitive Therapies, San Diego, California.
- Jacobucci, R.**, Serang, S., & Ammerman, B.A. (2017, November). *Multivariate approaches to exploratory data mining with the application of exploratory mediation for self-injury*. Paper presented at the 51st Annual Convention for the Association for Behavioral and Cognitive Therapies, San Diego, California.
- Burke, T. A., **Jacobucci, R.**, Ammerman, B.A., Hamilton, J. L., & Alloy, L. B. (2017, June). *Using exploratory data mining to compare importance of risk factors in predicting recent versus former history of non-suicidal self-injury*. Paper presented at the 51st Annual Convention for the Association for Behavioral and Cognitive Therapies, San Diego, California.
- Kleiman, E.M., **Jacobucci, R.**, Ammerman, B.A., Turner, B.J., Beale, E.E., Fedeor, S., Huffman, J.C., & Nock, M. K. (2017, June). *What affect states are most strongly associated with suicidal ideation? A real-time monitoring, exploratory data mining study*. Paper presented at the 51st Annual Convention for the Association for Behavioral and Cognitive Therapies, San Diego, California.
- Zelinski, E. M., **Jacobucci, R.** (2017, July). *Heterogeneity in cognitive change trajectories of older adults observed from structural equation model trees*. Alzheimers Association International Conference in London, UK
- Burke, T. A., **Jacobucci, R.**, Ammerman, B. A., Piccirillo, M., McCloskey M., & Alloy, L. B. (2017, April). *Identifying the relative importance of non-suicidal self-injury features in predicting suicidal ideation and behavior using exploratory data mining*. Paper presented at the 50th Annual Conference of American Association of Suicidology in Pheonix, Arizona.

- Jacobucci, R.**, Zelinski, E. M. (2016, November). *The bi-directional relationship between health and cognition in older age*. Paper presented at the Gerontological Society of America Annual Meeting, New Orleans, Louisiana.
- Peters, K., **Jacobucci, R.**, Prescott, C., Walters, E., McArdle, J. J. (2016, November). *Computerized adaptive testing of cognitive abilities in the Project Talent Aging Study*. Paper presented at the Gerontological Society of America Annual Meeting, New Orleans, Louisiana.
- Jacobucci, R.**, Grimm, K. J. (2016, October). *Pseudo-continuous testing of the latent difference score model*. Paper invited for presentation at the conference to honor the work of Jack McArdle, Richmond, Virginia.
- Grimm, K. J., **Jacobucci, R.** (2016, October). *Individually-varying time metrics in latent change score models*. Paper invited for presentation at the conference to honor the work of Jack McArdle, Richmond, Virginia.
- Jacobucci, R.**, Grimm, K. J., McArdle, J. J. (2016, July). *Comparison of frequentist and Bayesian regularization in structural equation modeling*. Paper presented at the International Meeting for the Psychometric Society, Asheville, North Carolina.
- Ammerman, B. A., **Jacobucci, R.**, Kleiman, E. M., Muehlenkamp, J., J. & McCloskey, M. S. (2015, November). *The exploration and validation of an empirically derived frequency criteria for NSSI Disorder*. Paper presented at the 49th Annual Convention for the Association for Behavioral and Cognitive Therapies, Chicago, Illinois
- Jacobucci, R.**, Prindle, J. J., McArdle, J. J. (2015, September). *An Application of Exploratory Data Mining in Project TALENT*. Paper presented at the International Meeting for Intelligence Research Annual Conference, Albuquerque, New Mexico.

• Poster Presentations

- Jacobucci, R.**, & Zelinski, E. M. (2017, July). *Exploratory Search for Heterogeneity in Change Across Old Age Using Structural Equation Model Trees*. Poster presented at the International Association of Gerontology and Geriatrics, San Francisco, California.
- Khoddam, R., Cho, J., Jacobucci, R., Prescott, C. A., & Leventhal, A. M. (2017, March). *Bivariate Latent Difference Score Modeling to Examine the Relationship between Conduct Problems and Cigarette Smoking among Adolescents*. Poster presented at the Society for Research on Nicotine and Tobacco annual meeting, Florence, Italy.
- Ammerman, B. A., **Jacobucci, R.**, & McCloskey, M. S. (2016, June). *The Prediction of Non-Suicidal Self-Injury Frequency Using Random Forests*. Poster presented at the 11th Annual Meeting of the International Society for the Study of Self-Injury, Eau Claire, Wisconsin.
- Jacobucci, R.**, Hayes, T., Zelinski, E. M. (2015, November). *Evaluating Methods for Generalizing from a Convenience Sample*. Poster presented at the 68th Annual Scientific Meeting of the Gerontological Society of America, Orlando, Florida.
- Zelinski, E., **Jacobucci, R.**, Kennison, R., & Zak, D. (2014, November). *Can a convenience sample produce generalizable results?* Poster session presented at the Gerontological Society of America Annual Scientific Meeting, Washington, DC.
- Jacobucci, R.**, Williams, J. E., & Thiruselvam, I. (2013, January). *A confirmatory factor analysis of the short form for the IPIP-NEO five-factor model personality scale*. Poster session presented at the Society for Personality and Social Psychology, New Orleans, Louisiana.
- Jacobucci, R.**, Brownfield, C., & Williams, J. E. (2012, December). *Intelligence as a factor in criminal offender risk assessment*. Poster session presented at the International Society for Intelligence Research, San Antonio, Texas.
- Jacobucci, R.**, Williams, J. E., & Thiruselvam, I. (2012, March). *Convergent validity of two short form measures of the five factor model of personality*. Poster session presented at the Iowa Psychological Association Spring Conference, Ames, Iowa.

Software

Jacobucci, R. et al. (2020). regsem: Performs Regularization on Structural Equation Models (version 1.5.2) [Software]. Available from <https://cran.r-project.org/web/packages/index.html>

Serang, S., **Jacobucci, R.**, Grimm, K. J., Stegmann, G., & Brandmaier, A. M. (2020). MplusTrees: Decision Trees with Structural Equation Models Fit in 'Mplus' (version 0.1.1) [Software]. Available from <https://cran.r-project.org/web/packages/MplusTrees/index.html>

Jacobucci, R., Stewart, S., Abdoell, M., Serang, S., & Stegmann, G. (2017). longRPart2: Recursive Partitioning of Longitudinal Data (version 0.0.1) [Software]. Available from <https://cran.r-project.org/web/packages/longRPart2/index.html>

Jacobucci, R. (2018). dtree: Decision Trees (version 0.4.2) [Software]. Available from <https://cran.r-project.org/web/packages/dtree/index.html>

Jacobucci, R. (2016). autosem: Performs Specification Search in Structural Equation Models (version 0.1.0) [Software]. Available from <https://cran.r-project.org/web/packages/autoSEM/index.html>

Awards/Honors

2019 Anastasi Dissertation Award

Division 5, American Psychological Association

Academic All-American, Golf, 2009, 2010

An award given out by the Golf Coaches Association of America based on academic and athletic performance.

Teaching Experience

• **Classes**

Undergraduate Psych Statistics

PSY30100 - 03: Experimental Psychology I - Statistics

Fall 2017 & 2018, University of Notre Dame

Graduate Regression

PSY60101 - 01: Quantitative Methods in Psychology II

Spring 2018, 2019, & 2020, University of Notre Dame

Machine Learning for Social & Behavioral Research

Joint Undergraduate & Graduate

Fall 2019, University of Notre Dame

• **Workshops**

Exploratory Data Mining via SEARCH Strategies

8/15/2016-8/19/2016 & 8/14/2017-8/18/2017

University of Michigan, Ann Arbor, MI.

Role: Lecturer and lab instructor.

Lecture Topic: Structural Equation Model Trees

Lab Topics: R, Regression, Clustering, Factor Analysis, Decision Trees & Extensions, SEM Trees.

Big Data: Exploratory Data Mining in Behavioral Research

APA Advanced Training Institutes. 6/6/2016-6/10/2016 & 6/5/2017-6/9/2017

Arizona State University, Tempe, AZ

Role: Lecturer and lab instructor.

Lecture Topic: Structural Equation Model Trees

Lab Topics: Decision Trees, Random Forests, Boosting, & SEM Trees.

Structural Equation Modeling in Longitudinal Research

APA Advanced Training Institutes. 6/6/2016-6/10/2016 & 5/30/2017-6/3/2017

Arizona State University, Tempe, AZ

Role: Lab instructor.

Lab Topics: Longitudinal Factor Analysis & Alternate Change Score Models.

Exploratory Data Mining via SEARCH Strategies

6/8/2015-6/12/2015, University of Michigan, Ann Arbor, MI

Role: Lab instructor.

Lab Topics: R, Regression, Clustering, Factor Analysis, Decision Trees & Extensions, SEM Trees.

Big Data: Exploratory Data Mining in Behavioral Research

APA Advanced Training Institutes. 6/1/2015-6/5/2015, Arizona State University, Tempe, AZ

Role: Lab instructor.

Lab Topics: Decision Trees & Extensions, SEM Trees, Heuristic Search Algorithms.

Professional Activities

- **Editorial Boards**

Journal for Quantitative and Computational Methods in Behavioral Sciences (QCMB)

- **Reviewing**

Journal of Consulting and Clinical Psychology; Structural Equation Modeling; Advances in Methods and Practices in Psychological Science; Multivariate Behavioral Research; Journal of Mathematical Psychology; Psychological Methods; Behavior Research Methods; Psychometrika; BMJ Open

- **Grant Reviewing**

Swiss National Science Foundation