

Stanislav “Stas” Kolenikov: Curriculum Vitae

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CURRENT POSITIONS

Adjunct Assistant Professor, Department of Statistics, University of Missouri, Columbia
Consultant, The World Bank, Development Economics Group: Poverty and Inequality,
Computational Tools
Academic Affiliate, Summit Consulting LLC

PROFESSIONAL INTERESTS / EXPERTISE

statistics: survey methods, spatial statistics, missing data, the bootstrap, M -estimates
quantitative methodology: structural equation models with latent variables,
microeconometrics, causality and treatment effect estimation, multilevel models,
instrumental variables
statistical programming: Stata, R, SAS, Mplus; numeric optimization and statistical
computing

EDUCATION

- 2000–2005 University of North Carolina at Chapel Hill, Department of Statistics, Ph.D. (2005) Title:
"A modification of the EM algorithm with applications to spatio-temporal modeling".
Advisor: Prof. Richard L. Smith, co-advisor: Prof. Kenneth A Bollen
- 1997–2000 Central Economics and Mathematics Institute, Moscow, post-graduate studies. Advisor:
Prof. S.A.Aivazian
- 1996–1998 New Economic School, Moscow, Russia, MA in Economics (July 1998).
GPA 4.7 out of 5.0, *Diploma with honors*, ranked 6 out of 35
Master's Thesis: "Statistical Methods of the Quality of Life Assessment"
- 1990–1996 Moscow Institute of Electronic Engineering (MIEE), Zelenograd, Russia
Diploma of Higher Education in Semiconductor Physics and Technology *With Honors*
Physical engineer in VLSI technology, GPA 4.9 out of 5.0.
Graduation Paper: The ANOVA-based Design of Statistical Quality Control System for
Microelectronic Production

Additional training

- 2008 SAS Base Programming Certificate
- 2006–2007 New Faculty Teaching Scholars, training program, University of Missouri system
- 2004–2005 Certificate Program in Survey Methodology, Odum Institute for Research in Social
Sciences, UNC, Chapel Hill.
- 1999 NetCourses NC151 and NC152 on Advanced Stata Programming
- 1993–1995 Courses on English-Russian technical translation, MIEE. Certified English-Russian
technical translator.

RESEARCH PUBLICATIONS

Peer reviewed (see impact statistics at <http://web.missouri.edu/~kolenikovs/impact.html>)

- Kolenikov, S.** and Bollen, Kenneth (2011). ‘Testing Negative Error Variances: Is a Heywood Case a Symptom of Misspecification?’, (conditionally accepted to *Sociological Methods and Research*)
- Kolenikov, S.** (2011) ‘Bias of parameter estimates in misspecified structural equation models’ (in print in *Sociological Methodology*). DOI: 10.1111/j.1467-9531.2011.01236.x
- Kolenikov, S.**, and Angeles, Gustavo (2011) ‘Cost efficiency of repeated cluster surveys’, *Survey Methodology*, **37** (1), 75-94.
- Kolenikov, S.** (2010) ‘Resampling variance estimation for complex survey data’, *Stata Journal*, **10**(2): 165–199.
- Kolenikov, S.** (2009) ‘Confirmatory factor analysis with `confa`’, *Stata Journal*, **9**(3): 329–373.
- Kolenikov, S.**, and Angeles, Gustavo (2009) ‘Socioeconomic status measurement with discrete proxy variables: Is principal component analysis a reliable answer?’, *Review of Income and Wealth*, **55**(1): 128–165. DOI: 10.1111/j.1475-4991.2008.00309.x
- Savalei, Victoria, and **Kolenikov, S.** (2008). ‘Constrained vs. Unconstrained Estimation in Structural Equation Modeling’, *Psychological Methods*, **13**(2): 150–170, 2008. DOI: 10.1037/1082-989X.13.2.150
Awards: 2009 Winemiller award for collaboration in Statistics and Psychology
- Kolenikov, S.**, and Shorrocks, Anthony F. (2005) ‘A Decomposition Analysis of Regional Poverty in Russia’, *Review of Development Economics*, **9** (1): 25–46, 2005, doi:10.1111/j.1467-9361.2005.00262.x.
Also published as a chapter of *Spatial Disparities in Human Development: Perspectives from Asia*, edited by R. Kanbur, A. Venables, G. Wan, United Nations University Press, 2005.
- Smith, Richard L., **Kolenikov, S.**, and Lawrence H. Cox. (2003) ‘Spatio-temporal modeling of PM_{2.5} data with missing values’. With Richard L. Smith and Lawrence H. Cox, *Journal of Geophysical Research*, 108(D24), 9004, doi:10.1029/2002JD002914, 2003
Awards: ASA Student Travel Award (2002), CDC/ATSDR Best Applied Papers Award (2004)
- Grosfeld, Irena, Senik-Leygonie, Claudia, Verdier, Thierry, **Kolenikov, S.**, and Paltseva, Elena (2001). ‘Workers’ Heterogeneity and Risk Aversion: A Segmentation Model of the Russian Labor Market’, *Journal of Comparative Economics*, 29: 230–256, doi:10.1006/jcec.2001.1711, 2001.

Under review

- Bollen, Kenneth, **Kolenikov, S.**, and Shawn Bauldry (2011) ‘Generalized Method of Moments – Instrumental Variable Estimators for Latent Variable Models’
- Kolenikov, S.**, Sajaia, Zurab, and Lokshin, Michael (2011) ‘Variance estimation for the generalized Gini and the generalized concentration coefficients’
- Kolenikov, S.** ‘Scrambling Halton sequences using Mata’
- Kolenikov, S.**, and Yuan, Yiyong (2010). ‘Empirical likelihood estimation and inference in structural equation models’, (R&R in *British Journal of Mathematical and Statistical Psychology*)

In progress

- ‘Unified treatment of the least squares and instrumental variable estimation methods for structural equation models by generalized method of moments’, with Kenneth Bollen
- ‘Generalized method of moment estimation of latent variable models using Stata’, with K. Bollen
- ‘How many factors? Underidentification issues in factor analysis’, with Victoria Savalei
- ‘A latent variable model of informative college student dropout’, with P. Wood and I. Zaniletti
- ‘Applications of quasi-Monte Carlo methods for survey resampling inference’

Monographs

- 2010 *Statistics in the Social Sciences: Current Methodological Developments*. Co-editor of the volume, with Douglas Steinley and Lori Thombs, Wiley, ISBN 978-0-470-14874-7.
- 2003 *Applied Econometric Analysis With Stata*. Lecture notes, 2000, updated in 2003. Published by New Economic School in the NES Lecture Notes series (KL/2001/00).

Minor works

- 2007 *Applications of quasi-Monte Carlo methods in inference for complex survey data*, ASA Survey Research Methods Section Proceeding
- 2006 *A Modification of the EM Algorithm with Application to Spatio-Temporal Models*, 2006 Proceedings of American Statistical Association [CD-ROM], Alexandria.
- 2004 *The Use of Discrete Data in Principal Component Analysis: Theory, Simulations, and Applications to Socioeconomic Indices*, with Gustavo Angeles. Working Paper of MEASURE/Evaluation project, No. WP-04-85, Carolina Population Center, UNC.
- 2001 *Modeling of Expenditure Distribution By a Lognormal Mixture*, with S.A.Aivazian. 2001 Proceedings of the American Statistical Association, Statistical Computing Section [CD-ROM], Alexandria, VA: American Statistical Association.
- 2001 Review of Stata 7. *Journal of Applied Econometrics*, vol. 16 (5), 637--646 (2001).
- 2001 *Poverty and Expenditure Differentiation Of Russian Population*, with S. A. Aivazian. Working Paper No. 01/01E , Economics Education and Research Consortium, Moscow.
- 1999 'Efficiency of the Conservative Treatment in Idiopathic Scoliosis: Mathematical Models of the Effect of the Brace Treatment in Patients with Adolescent Idiopathic Scoliosis'. With G.P.Dmitrieva, R.D.Nazarova, A.A.Peresetsky, E.Paltseva. In collective volume *Research Into Spinal Deformities*, IOS Press Amsterdam, ed. I.A.F.Stokes, 2, 1999.

Statistical programming

- Stata modules `bsweights`: complex survey bootstrap weights
(open access) `confa`: confirmatory factor analysis
`denormix`: normal mixtures
`gconc`: complex survey inference for generalized Gini and concentration coefficients
`polychoric`: polychoric correlations
- 2008 SAS Base Programming Certificate
- 1999 NetCourses NC151 and NC152 on Advanced Stata Programming

AWARDS AND HONORS

- 2009 *Constrained vs. Unconstrained Estimation in Structural Equation Modeling*, Winemiller award for collaboration in Statistics and Psychology, with Victoria Savalei (\$500)
- 2007 *Balancing the bootstrap with the quasi-Monte Carlo methods*, Summer Research Fellowship Award (\$7000), University of Missouri system
- 2006 *The Sixth Winemiller Symposium: New Methodological Developments in Statistics in Social Sciences*, Partial support: \$20,000, NSF award #DMS-0605679, NSF Division of Mathematical and Physical Sciences, role: co-PI
- 2006–2009 *Collaborative research: Research: Structural Misspecification in Latent Variable Models: Symptoms, Consequences, and Diagnostic Tests*, with Kenneth Bollen, NSF Methodology, Measurement and Statistics program, award No. 0617193, role: PI (\$122,000)
- 2005 *Informatively missing data in longitudinal studies*, Winemiller Award for Collaboration in Statistics and Psychology, status: awarded. Joint work with Phillip K Wood (University of

Missouri, Columbia Psychology) and Tiffany Whittaker (University of Missouri, Columbia Education, Department of Educational, School and Counseling Psychology)

- 2004 Best Applied Papers Award, The Centers for Disease Control and Prevention / Agency for Toxic Substances and Disease Registry
- 2002 Best Student Paper Travel Award for the 2002 Joint Statistical Meetings in Atlanta, sponsored by the Section on Statistics and the Environment.
- 2001 Best Student Paper Travel Award for the 2001 Joint Statistical Meetings in Atlanta, sponsored by the Government Statistics Section, Social Statistics Section, and Section on Survey Research Methods.
- 2000–2001 Graduate School Merit Assistantship, UNC
- 1999–2000 Economics Education and Research Consortium grant, "Poverty and Expenditure Differentiation Of Russian Population" with Prof. S.A.Aivazian (\$15,000)
- 1994, 1995 2nd Prize in Russian Mathematical Olympiad among engineering students
- 1994 2nd Prize in Moscow Mathematical Olympiad among engineering students
- 1993–1995 Mayor's Scholarship, MIEE
- 1991–1994 Academic Council Scholarship, MIEE

RESEARCH EXPERIENCE

- Aug 2005–June 2009 Assistant Professor, Department of Statistics, University of Missouri, Columbia.
- Asymptotic theory of structural equation models; M-estimation, non-regular problems, empirical likelihood
 - Design-based inference for complex survey data; quasi-Monte Carlo resampling inference
- Jan 2002–Aug 2005 Research Assistant, MEASURE/Evaluation project at Carolina Population Center.
- Discrete data in principal component analysis, with applications to socio-economic status estimation
 - Inference for repeated multistage cluster surveys
 - Permutation testing for program evaluation
- May – Aug 2002 Centre for Economic and Financial Research, Moscow. Worked in projects:
- Social Protection Implementation: Profiling of the Unemployed
 - Tax-Benefit Modelling for Russia
- May – June 2001 Summer internship, World Institute for Development Economics Research, Helsinki.
- Jan – May 2001 Research Assistant, environmental statistics project for EPA.
- July 1998 – Aug 2000 Russian-European Center for Economic Policy.
Economist, Industrial Policy and Social Policy Teams
- Sep 1999 – July 2000 NES, Research Assistant, *Social Policy in Russia* GET research project

TEACHING EXPERIENCE: Courses

Continuing education

- 2009 The bootstrap for complex surveys: half day CE course, Joint Statistical Meetings
- 2011 Using Stata for complex survey data analysis: full day CE course, Statistical Society of Canada meeting

University of Missouri, Columbia

- 2005 –2009 Introduction to Probability and Statistics II, business undergraduate non-calculus based Sampling Techniques, upper undergraduate/graduate

Statistics for Engineering Students, upper undergraduate/graduate calculus based
Introduction to Probability Theory, upper undergraduate/graduate calculus based
Advanced Topics: Complex Survey Data Analysis: graduate topics course
Multivariate Analysis, advanced graduate course

Duke University, AEA Summer Program and Minority Scholarship

2004, 2005 Research seminar: Introduction to Stata, Introduction to LaTeX

New Economic School, Moscow, Russia

2003 Visiting professor, MA in Economics program, "Data Analysis".

2003, 2004 Visiting professor, NES outreach program, "Applied microeconometrics and labor economics" (Vladivostok, August 2003; Alma Aty, March 2004).

2000 Instructor, NES outreach program. Seminars on applied econometrics with Stata 6 at Voronezh State University and Urals State University, Ekaterinburg

University of North Carolina, Chapel Hill

2002 – 2003 Introduction to Statistics and Data Analysis, undergraduate non-calculus based

Students advised

Seungmin Jahng (MA Stat 2008), 'A Mixed Model for Variance of Successive Difference of Stationary Time Series: Modeling Temporal Instability in Intensive Longitudinal Data'

Ni Li (MA Stat 2008), 'Derivatives of the Fitting Functions and Sandwich Estimator of Variance for Structural Equation Models'

Yiyong Yuan (MA Stat 2007), 'Empirical Likelihood Estimation of SEM'

Teaching activities

2006 – 2007 New Faculty Teaching Scholars program, University of Missouri system

2007 Econometrics reading group, jointly with Douglas J Miller (MU Economics)

Online materials

GLLAMM: <http://www.unc.edu/~skolenik/stata/gllamm-demo.html>

Regression diagnostics, bootstrap: <http://web.missouri.edu/~kolenikovs/stata>

Stata and LaTeX: <http://www.duke.edu/~skolenik/>

Course portfolio: <http://web.missouri.edu/~kolenikovs/Stat4710>

EDITORIAL EXPERIENCE

2007–2009 *Statistics in the Social Sciences: Current Methodological Developments*. Co-editor of the volume, with Douglas Steinley and Lori Thombs, Wiley, ISBN 978-0-470-14874-7 (2010)

2010– *British Journal of Mathematical and Statistical Psychology*, Associate Editor

ACADEMIC SERVICE

Referee reports National Science Foundation, New Economic School, Springer, Chapman & Hall/CRC

Canadian Journal of Statistics, Journal of Official Statistics, Methodology, Multivariate Behavioral Research, Psychological Methods, Psychometrika, Journal of Educational and Behavioral Statistics, British Journal of Mathematical and Statistical Psychology, Survey Methodology, Review of Income and Wealth, The Economics of Transition, International Regional Science Review, Journal of Population Research.

U of Missouri Seminar series in Statistics, Committee Chair, 2005–2006

The Sixth Winemiller Symposium on Current Developments in Statistics in Social Sciences, Co-organizer, Program Chair, 2006.

Social Science Statistics Center, faculty affiliate, 2005–2009

Wikipedia Atkinson index
contributions Balanced repeated replication
Data mining
Economic inequality
Estimation of covariance matrices
Generalized method of moments

Matrix calculus
Multilevel models
Non-central chi-square distribution
Pivotal quantity
Structural equation modeling
Survey sampling

CONSULTING EXPERIENCE

2009–current Freelance consulting in academia and industry
2009-current Consultant, The World Bank, Computational Tools group. Methodology consulting; Stata code review and development for ADePT project (<http://www.adeptanalytics.org>); income distribution microsimulations; analysis and inference with complex survey data
2011-current Academic affiliate, Summit Consulting LLC. Advice on sampling, complex survey data analysis and Stata code
2005–2009 Affiliated faculty at Social Science Statistics Center; statistical consulting for faculty of University of Missouri, Columbia. Advice on Stata code, structural equation modeling, missing data and multiple imputation, econometrics of longitudinal and panel data

MEMBERSHIPS

American Statistical Association, Institute of Mathematical Statistics, Statistical Society of Canada, Psychometric Society

REFERENCES

Advisors

Richard L. Smith, dissertation advisor (statistical theory)

Mark L. Reed Distinguished Professor, Department of Statistics and Operations Research,
CB 3260, 318 Hanes Hall, University of North Carolina, Chapel Hill, 27599-3260 NC, USA
Phone: +1-919-843-6024, fax: +1-919-962-1279, e-mail: rls@email.unc.edu

Kenneth A. Bollen, dissertation co-advisor (quantitative methodology in social sciences)

Henry Rudolph Immerwahr Distinguished Professor, Department of Sociology
CB 3210 Hamilton Hall, University of North Carolina, Chapel Hill, NC 27599-3210, USA
Phone: +1-919-962-7501, fax +1-919-962-7568, e-mail: bollen@unc.edu

Supervisors

Lori Thombs, supervisor and mentor (statistical consulting and social science statistics)

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Michael Lokshin, manager (economics, Stata programming)

Adviser, The World Bank, Development Economics Research Group
1818 G St NW, Washington, DC 2006
Phone: +1-202-473-1772, email: mlokshin@worldbank.org

Charles Becker, former supervisor (economics, teaching and administration)

Research Professor of Economics
Department of Economics, Duke University, Box 90097, Durham, NC 27708-0097, USA
Phone: +1-919-660-1886, fax: +1-919-660-1879, email: cbecker@econ.duke.edu

Other references:

Thomas Baguley (editorial work at *British Journal of Mathematical and Statistical Psychology*; quantitative methodology in social sciences)

Professor of Experimental Psychology, School of Social Sciences, Nottingham Trent University
Burton Street, Nottingham, Nottinghamshire, NG1 4BU, United Kingdom

Phone: +44 (0)115 848 5611, fax: +44 (0)115 848 6829, email: thomas.baguley@ntu.ac.uk

Jeff Gill, external reference (quantitative methodology in social sciences)

Professor, Department of Political Science, and Director of the Center for Applied Statistics
One Brookings Drive, Seigle L085, Washington University, St. Louis, MO 63130-4899, USA

Phone: +1-314-935-6136, +1-314-935-9012, email: jgill@wustl.edu

Albert Lee, consulting client (consulting, survey statistics)

Founder and Chief Excellence Officer, Summit LLC
626 E St NW, Washington, DC 20004

Phone: +1-202-407-8300, fax: +1-509-984-8943, email: albert.lee@summitllc.us

Gregory Holliday, mentor (teaching)

New Faculty Teaching Scholars Program and President's Academic Leadership Program
309 University Hall, Columbia, MO 65211, USA

Phone: +1-573-884-1878, email: hollidayg@missouri.edu

Kevin Karsch, former student (teaching)

Department of Computer Science, 201 North Goodwin Avenue
University of Illinois, Urbana, IL 61801-2302, USA

Phone: +1-217-333-3426, email: karschl@uiuc.edu

Sophia Rabe-Hesketh, external reference (biostatistics and quantitative methodology in social sciences)

Professor, Department of Policy, Organization, Measurement and Evaluation,
Graduate School of Education,

1501 Tolman Hall, University of California, Berkeley, CA 94720-1670, USA

Phone: +1-510-642-5287, email: sophiarh@berkeley.edu

Jocelyn Elise Crowley, consulting client (social science methodology)

Professor of Public Policy, Rutgers, The State University of New Jersey
33 Livingston Avenue, New Brunswick, NJ 08901-1987, USA

Phone: +1-732-932-2499, email: jocelync@rutgers.edu

Daniel Hooley, rock-climbing and biking partner (personal)

Professor, Department of Classical Studies

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