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PSYCHOMETRIC SOCIETY

EDITORIAL

Introduction to the September, 2026 Issue

Dear Psychometrika Readers,

Welcome to the fourth Psychometrika issue of 2026. It was a pleasure to meet so many of you at IMPS2026 in Seoul, Korea, in July, and I am grateful to everyone who made the meeting such a stimulating one. I also hope that those who attended liked the two IMPS2026 sessions celebrating 90 years of Psychometrika.

This issue begins with eight "Theory and Methods" section articles. In the first, Sun-Joo Cho and Sophia Mueller embed extreme gradient boosting within a linear mixed model and propose a group-aware permutation importance measure and a combined-group cross-validation strategy for multilevel cross-classified continuous outcomes. In the second, Baoqun Chang, Jing Lu, and Jiwei Zhang propose a Bootstrap-CUSUM method for detecting test speededness which, unlike most existing methods, does not rely on distributional assumptions such as lognormality of the response times. The third, by Jochen Ranger, Sören Much, Niklas Neek, Anett Wolgast, Augustin Mutak, José Luis Gaviria Soto, and Steffi Pohl, proposes a latent trait model for responses and response times in which a diffusion process races against a censoring process, thereby separating a test taker's capability from his or her persistence. In the fourth, Jianbin Fu and Patrick Kyllonen propose a genetic algorithm, the array histogram-based sampling algorithm, for the automated assembly of linear multidimensional forced-choice questionnaires. The fifth, by Jing Wu, Zhihua Ma, and Ming-Hui Chen, adopts a Bayesian hierarchical framework that jointly models item responses, response times, and both not-reached and omitted behaviors, and develops a decomposed pseudo-marginal likelihood criterion for assessing the fit of the missing data models. In the sixth, Yvonnick Noel introduces a statistical implication index that captures asymmetric, one-way dependence between binary events and supports a dimensional reading of the resulting implication graphs. The seventh, by Jan Bauer, shows that computing Revelle's beta is conceptually equivalent to divisive hierarchical clustering, which reduces the number of candidate split-halves to a quadratic problem and finally makes this 45-year-old reliability measure computable in practice. In the eighth and last "Theory and Methods" article, Trung Le, Steven Culpepper, and Jeff Douglas derive identifiability conditions for three longitudinal designs used with diagnostic models and provide a general hidden Markov model and Gibbs sampler for the multiple-group longitudinal design.

This issue then includes six "Application and Case Studies" section articles. In the first of these, Sun-Joo Cho, Autumn Kujawa, Corinne Carlton, Yinru Long, and Rachel Marlowe specify a Bayesian selection model for rare events and nonmonotone nonignorable missingness in binary time-series daily diary data, and apply it to 90 days of data from adolescents assessed after discharge from acute psychiatric treatment. In the second, Fei Gu, Piyawong Punjatewakupt, Mahachai Sattayathamrongthian, Suppanut Sriutaisuk, Mike Cheung, Sunthud Pornprasertmanit, and Yao Zheng propose a simple analytic approach that integrates the covariance structure model and the delta method to obtain standard errors for standardized regression coefficients as well as for unstandardized coefficients of products of Z-scores. The third, by Karel Veldkamp, Raoul Grasman, and Dylan Molenaar, extends amortized variational inference to discrete latent variable models such as latent class analysis, the generalized DINA model, and mixture item response theory models. In the fourth, Esther Ulitzsch, Steffen Nestler, Sverre Urnes Johnson, Therese Ruud Snuggerud, and Oliver Lüdtke introduce a hierarchical time-varying coefficient formulation of the multivariate normal distribution that captures change in levels, variability, and couplings across persons and time in intensive longitudinal data. In the fifth, Kazuhiro Yamaguchi,

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Haruhiko Mitsunaga, Shun Saso, and Yuri Uesaka develop a random-effect diagnostic classification model for multilevel growth curves and use it to examine how attribute mastery in the second grade relates to the growth of mathematics ability through the sixth grade. The sixth of these articles, which belongs to the "Software Development" category that is new to the "Application and Case Studies" section, is by Patrícia Martinková, Jan Netík, and Adéla Hladká, who present the new "SIA modules" feature of the ShinyItemAnalysis package that allows researchers to disseminate new analytic methods as add-on extensions to the interactive application.

The last article of this issue is a "Literature Review" by Edgar C. Merkle, who synthesizes popular approaches to Bayesian estimation of psychometric models that rely on the multivariate normal distribution, including point estimation of posterior central tendency, Gibbs sampling, and Hamiltonian sampling.

Hope you enjoy the issue.

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