

# ACM-SIGMIS DATA BASE for Advances in Information Systems

## Call for papers

### Using advanced PLS-SEM methods to further the understanding of MIS phenomena

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#### **Scope of the special issue**

Partial least squares structural equation modeling (PLS-SEM) has gained considerable attention in management information systems (MIS) research (Hair et al. 2017; Ringle et al. 2012; Petter 2018). Many theoretical models highly relevant to MIS (e.g., TAM, UTAUT, and derivatives) and the broader management field (e.g., the American customer satisfaction index) have relied heavily on PLS-SEM in their development. As a composite-based approach to SEM, PLS-SEM aims at maximizing the explained variance in dependent constructs in the path model (e.g., technology adoption and use) and allows researchers to simultaneously estimate interrelationships involving a variety of constructs and indicators (Petter 2018). As such PLS-SEM is perfectly suited for today's data-driven economy, where MIS researchers seek to support decision makers by extending or generating theories and assessing their practical utility to assist policy decisions.

A main objective of MIS research is to create theories that offer both explanation and prediction of the phenomena of interest (Gregor 2006; Grover et al. 2008). While theoretical development in MIS research has been predominantly driven by an explanation-oriented focus (e.g., model fit,  $R^2$ ), few or no benchmarks of the actual (out-of-sample) predictive performance of MIS models currently exist (Shmueli and Koppius 2011). Ignoring the out-of-sample properties means that there is a lack of evidence regarding whether the models will fit other datasets well (Petter 2018). Prediction-oriented assessments can aid theory generation and enhancement via comparison, relevance assessment, improvement in measures, and benchmarking the predictability of MIS phenomena (Hofman, Sharma and Watts 2017).

Furthermore, the profusion of model alternatives and the lack of model comparisons have resulted in fragmented theoretical development (Gray & Cooper 2010; Sharma et al. 2019). For example, Grover (2013, p. 277) questions monistic theorization in MIS research, where "the same phenomenon (e.g., IT outsourcing) might be examined using five different theoretical perspectives in five different papers by five different teams. This blocks vibrancy of discourse, consolidation of knowledge, and innovation." In light of these issues, MIS theorists have long called for model comparisons to create holistic theory, such as Roberts and Grover (2009, p. 89) who, in their review of SEM techniques in

MIS research, note that, "...specifying alternative models, is useful in theory building because it gives the researcher alternative perspectives concerning the focal phenomena."

The latest methodological developments in PLS-SEM seek to address this empirical imbalance in MIS research. New avenues have been opened for improvements in existing - and the creation of new - measures and theories, in particular, via out-of-sample predictive assessments and comparisons (Shmueli et al. 2016; Sharma et al. 2018, Sharma et al. 2019). Model assessments and comparisons using the prediction-oriented lens can help cohesive theoretical development by exploring the tension among theories (Grover 2013), benchmarking their predictive strengths relative to each other, and providing better understanding of the limits of how well the models fit real-world data (Gray and Cooper, 2010; Shmueli and Koppius 2011).

Similarly, novel PLS-SEM-based complementary methods allow researchers to assess the robustness of their models (Sarstedt et al. 2019). Such robustness checks are fundamental for theory testing and development and have become common in regression-based studies, where researchers examine "how certain 'core' regression coefficient estimates behave when the regression specification is modified in some way, typically by adding or removing regressors." (Lu and White 2014, p. 194). Examples include methods that allow assessment of nonlinear effects (Sarstedt et al. 2019), endogeneity (Hult et al. 2018), and unobserved heterogeneity (Schlittgen et al. 2016).

This special issue focuses on the application of advanced techniques now available in PLS-SEM to stimulate innovative and fresh investigation of core MIS phenomena, and promote novel theoretical development. Topics include, but are not limited to:

1. Extending or consolidating MIS models and theories by connecting them with insights from related disciplines,
2. Model comparisons to further the understanding of core aspects of MIS research, and generate novel theory,
3. Exploring the interplay between explanation and prediction in MIS model assessments,
4. Reconsidering the performance of prominent MIS models from a balanced explanation and prediction perspective,
5. Robustness checks of prominent MIS models, e.g., presence of nonlinear effects, endogenous factors, prediction-oriented segmentation analysis to identify and treat unobserved heterogeneity, measurement invariance of composite models, boundary testing,
6. Applications of latent class procedures to understand group-related differences in MIS-related perceptions and behaviors.

### **Submissions**

The special issue is tied to the 2020 International Conference on Partial Least Squares Structural Equation Modeling ([www.pls2020.org](http://www.pls2020.org)) to be held March 17-19, 2020 in Beijing, China. Outstanding papers presented at this conference will be invited for submission. These papers will then go through the regular journal review process. The guest editors will allow for a maximum of two revisions after which a final editorial decision will be made. The special issue is scheduled to appear in the second half of 2021. The submission deadline is **April 30, 2020**.

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