Two-Day Hands-On Workshop on WarpPLS: Structural Equation Modeling Fundamentals with Linear and Nonlinear Applications

Instructor:

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Location and dates:

Our Lady of the Lake University
San Antonio, Texas
6-7 January 2012 (Fri-Sat), 8 am–5 pm

Goal

The main goal of this workshop is to give participants a practical understanding of how to use the software WarpPLS to conduct variance-based structural equation modeling (SEM). The workshop is very hands-on and covers linear and nonlinear applications.

Preparation for the workshop

Each workshop participant must: (a) bring a portable computer (e.g., a laptop) to the workshop with WarpPLS installed on it; (b) bring one (or more) datasets for analysis; and (c) read the three readings that will be discussed in the workshop (provided by the instructor).

Day 1 of workshop

- Overview of workshop and formation of teams
- Overview of web resources: Video clips, blog, publications, spreadsheets, and templates
- Overview of steps 1 to 5 of a complete SEM analysis
- Hands-on exercise: Steps 1 to 5 of a complete SEM analysis
- Resampling as shuffling multiple decks of cards
- Choosing the right resampling method
- Hands-on exercise: Changing the resampling method
- Choosing the right warping (i.e., nonlinear) algorithm
- Viewing plots of linear and nonlinear relationships
- Hands-on exercise: Changing the warping algorithm and viewing plots

- Charting non-standardized data
- Hands-on exercise: Charting non-standardized data
- Reading discussion: Kock (2011) – WarpPLS 2.0 User Manual

Day 2 of workshop

- Testing a mediating effect using the Baron & Kenny approach
- Hands-on exercise: Testing a mediating effect using the Baron & Kenny approach
- Testing a mediating effect using the Preacher & Hayes approach
- Hands-on exercise: Testing a mediating effect using the Preacher & Hayes approach
- Reading discussion: Kock et al. (2009) – Communication flow orientation article
- Testing a moderating effect
- Hands-on exercise: Testing a moderating effect
- Adding control variables into an analysis
- Conducting a multi-group analysis
- Conducting a full collinearity test
- Reading discussion: Zhang et al. (2010) – Organizing software testing article
- Hands-on exercise: Team project using participant's own data
- Presentation of results from team project

Readings for discussions

The readings below are provided online by the instructor and must be read prior to the workshop. They will be discussed in the workshop.

- Kock, N. (2011). *WarpPLS 2.0 User Manual*. Laredo, Texas: ScriptWarp Systems.
- Kock, N., Verville, J., Danesh, A., & DeLuca, D. (2009). Communication flow orientation in business process modeling and its effect on redesign success: Results from a field study. *Decision Support Systems*, 46(2), 562-575.
- Zhang, X., Dhaliwal, J., & Gillenson, M.L. (2010). Organizing software testing for improved quality and satisfaction. *Journal of Information Technology Management*, 11(4), 1-12.

Participant teams

At the beginning of the workshop, participants will contact other prospective team members of their choice, create teams, and define a team leader. Teams are expected to have between 3 and 7 members.

Team project and presentations

Participant teams will analyze data with WarpPLS, either using the dataset provided by the instructor for the workshop, or a dataset brought by one of the team members. (The latter is strongly encouraged.) Ideally the dataset should contain at least 100 cases, and the model should contain at least: 3 latent variables, and 1 block where two or more predictor variables point at a criterion variable.