

# 41<sup>st</sup> EIBA ANNUAL CONFERENCE

## QUANTITATIVE RESEARCH METHODS WORKSHOP: MEASUREMENT & SCALING

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### Instructor

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### Course Objectives

The purpose of this intensive workshop is to provide a broad introduction to measurement theory and alternative approaches for developing and assessing multi-item scales. The workshop is designed for non-experts and the emphasis is on the steps associated with the development and validation of sound measures for use in empirical studies. Its target audience includes doctoral students and academic researchers involved in quantitative research. The workshop assumes previous knowledge of data analysis and basic multivariate statistics. Ideally, participants should have already completed an introductory structural equations modeling (SEM) course.

### Scope & Approach

The workshop seeks to familiarize participants with the various stages associated with the construction of sound measures for use in empirical research, highlighting key decisions and potential problems at each stage. Following an introduction of the key concerns of measurement theory, the conceptual underpinnings of alternative measurement perspectives – namely reflective and formative measurement – are discussed. These set the conceptual background for considering operational procedures for developing reflective scales and formative indices and for offering detailed guidelines for measure validation. To enable participants experience measure development “in action”, the various issues are illustrated with concrete examples of reflective scale development and formative index construction drawn from the literature.

Once participants have become familiar with basic measurement principles, more advanced topics will be addressed such as higher-order models, parceling strategies, and single-item measurement. Note that in several of the illustrations used, the LISREL program will be applied to estimate the relevant models and, therefore, it is highly desirable that participants are familiar with basic structural equations modeling (SEM) procedures.

The workshop will take the form of interactive workshop sessions, placing particular emphasis on audience participation. Participants are strongly encouraged to read widely on the subject (see Readings below) and would also benefit from having access to SEM software

such as the LISREL program (a free student version of the latter is available for downloading under [www.ssicentral.com](http://www.ssicentral.com)).

## Readings

*Readings marked with an asterisk "\*" should ideally be read prior to the workshop; the remainder are more technical/advanced and best tackled after attending the workshop. Readings denoted (A) involve applications/illustrations of measurement development procedures in substantive research situations and can be consulted at any time.*

Bollen, K. A. 2011. Evaluating effect, composite, and causal indicators in structural equation models. *MIS Quarterly*, 35(2): 359-372.

Bollen, K.A. and Bauldry, S. 2011. Three Cs in measurement models: Causal indicators, composite Indicators, and Covariates. *Psychological Methods*, 16(3): 265-284.

\*Bollen, K. A. and Lennox, R. 1991. Conventional wisdom on measurement: A structural equation perspective. *Psychological Bulletin*, 110: 305-314.

Cenfetelli, R. T. and Bassellier, G. 2009. Interpretation of formative measurement in information systems research. *MIS Quarterly*, 33(4): 689-707.

\*Churchill, G. A. 1979. A paradigm for developing better measures of marketing constructs. *Journal of Marketing Research*, 16: 64-73.

\*Danes, J. E. and Mann, K. O. 1984. Unidimensional measurement and structural equation models with latent variables. *Journal of Business Research*, 12(3): 337-352.

Diamantopoulos, A. 2005. The C-OAR-SE procedure for scale development in marketing: A comment. *International Journal of Research in Marketing*, 22: 1-9.

Diamantopoulos, A. 2006. The error term in formative measurement models: Interpretation and modeling implications. *Journal of Modelling in Management*, 1(1): 7-17.

Diamantopoulos, A. 2011. Incorporating formative measures into covariance-based structural equation models. *MIS Quarterly*, 35(2): 335-358.

Diamantopoulos, A. 2013. MIMIC models and formative measurement: some thoughts on Lee, Cadogan & Chamberlain. *Academy of Marketing Science Review*, 3(1): 30-37.

Diamantopoulos, A. and Papadopoulos, N. 2010. Assessing the cross-national invariance of formative measures: guidelines for international business researchers. *Journal of International Business Studies*, 41(2): 360-370.

Diamantopoulos, A. and Riefler, P. 2011. Using formative measurement in international marketing models: A cautionary tale using consumer animosity as an example. *Advances in International Marketing*, 22: 11-30.

Diamantopoulos, A. and Temme, D. 2013. MIMIC Models, Formative indicators and the joys of research. *Academy of Marketing Science Review*, 3(3):160-170.

Diamantopoulos, A.; Riefler, P. and Roth, K. P. 2008. Advancing formative measurement models. *Journal of Business Research*, 61(12): 1203-1218.

\*Diamantopoulos, A., Sarstedt, M., Fuchs, C., Wilczynski, P. and Kaiser, S. 2012. Guidelines for choosing between multi-Item and single-Item scales for construct measurement: a predictive validity perspective. *Journal of the Academy of Marketing Science*, 40(3), pp. 434-449.

\*Diamantopoulos, A. and Sigauw, J. A. 2006. Formative versus reflective indicators in organizational measure development: A comparison and empirical illustration. *British Journal of Management*, 17(4): 263-282.

\*Diamantopoulos, A. and Winklhofer, H. 2001. Index construction with formative indicators: An alternative to scale development. *Journal of Marketing Research*, 37: 269-277.

(A)Foedermayr, E.; Diamantopoulos, A. and Sichtmann, C. 2009. Export segmentation effectiveness: Index construction and link to export performance. *Journal of Strategic Marketing*, 17(1): 55-73.

\*Fuchs, C. and Diamantopoulos, A. 2009. Using single-item measures for construct measurement in management research. *Die Betriebswirtschaft*, 69(2): 195-210.

\*Gerbing, D. W. and Anderson, J. C. 1988. An updated paradigm for scale development incorporating unidimensionality in its assessment. *Journal of Marketing Research*, 25: 186-192.

Jarvis, C. B.; MacKenzie, S. B. and Podsakoff, P. M. 2003. A critical review of construct indicators and measurement model misspecification in marketing and consumer research. *Journal of Consumer Research*, 30: 199-218.

\*Law, K. S.; Wong, C.-S. and Mobley, W. H. 1988. Toward a taxonomy of multidimensional constructs. *Academy of Management Review*, 23(4): 741-755.

MacKenzie, S. B.; Podsakoff, P. M. and Podsakoff, N. P. 2011. Construct measurement and validation procedures in MIS and behavioral research: Integrating new and existing techniques. *MIS Quarterly*, 35(2): 293-334.

Mowen, J. C. and Voss, K. E. 2008. On building better construct measures: Implications of a general hierarchical model. *Psychology & Marketing*, 25(6): 485-505.

\*Netemeyer, R. G., Bearden, W. O. and Sharma, S. 2003. *Scaling Procedures*, Sage Publications.

Noar, S. M. 2003. The role of structural equation modeling in scale development. *Structural Equation Modeling*, 10(4): 622-647.

(A)Oberecker, E. and Diamantopoulos, A. 2011. Consumers' emotional bonds with foreign countries: Does consumer affinity affect behavioral intentions? *Journal of International Marketing*, 19(2): 45-72.

Petter, S., Straub, D. and Rai, A. 2007. Specifying formative constructs in information systems research. *MIS Quarterly*, 31(4): 623-656.

Ping, R. A. Jr. 2004. On assuring valid measures for theoretical models using survey data. *Journal of Business Research*, 57(2): 125-141.

(A)Riefler, R. P., Diamantopoulos, A. and Siguaw, J. 2012. Cosmopolitan consumers as a target group for segmentation. *Journal of International Business Studies*, 43: 285-305.

(A)Schoefer, K. and Diamantopoulos, A. 2008. Measuring experienced emotions during service recovery encounters: Construction and assessment of the ESRE scale. *Service Business*, 2: 65-81.

\*Spector, P. E. (1992): *Summated Rating Scale Construction: An Introduction*, Sage Publications.

\*Steenkamp, J. B. E. M. and van Trijp, H. C. M. 1991. The use of LISREL in validating marketing constructs. *International Journal of Research in Marketing*, 8: 283-299.

Temme, D., Diamantopoulos, A. and Pfgfeidel, V. 2014. Specifying formatively-measured constructs in endogenous positions in structural equation models: caveats and guidelines for researchers. *International Journal of Research in Marketing*, 31(2): 309-316.