

INDEX CONSTRUCTION WITH FORMATIVE INDICATORS: AN ALTERNATIVE TO SCALE DEVELOPMENT

Adamantios Diamantopoulos, Loughborough University, England
Heidi M. Winklhofer, The University of Nottingham, England

ABSTRACT

While the methodological literature is replete with advice concerning the development and validation of multi-item scales based upon reflective measures (e.g., Churchill 1979; Peter 1979, 1981; Böcker 1988; Gerbing and Anderson 1988; Steenkamp and Trijp 1991). The issue of index construction using formative measures has received little attention. Specifically, existing measure development guidelines are based on "conventional wisdom" (c.f. Bollen and Lennox 1991), whereby items (i.e., observed variables) comprising a scale are seen as reflective (effect) indicators of an underlying construct (i.e., latent variable). In fact, classical test theory (Lord and Novick 1968) and the domain-sampling model (e.g., Nunnally and Bernstein 1994) underpin practically all measure development texts (e.g., DeVellis 1991; Spector 1992; Traub 1994).

The present paper focuses on an alternative measurement perspective based on the use of formative (cause, causal) indicators and provides specific guidelines on the construction of indexes based on such indicators. Given that conventional notions of internal consistency (reliability) and convergent and discriminant validity are not applicable to formative measures (Bollen 1989; Bogazzi 1994) alternative procedures are considered for assessing measurement quality. In particular, based upon the dispersed literature on formative indicators, four issues are identified as being critical to successful index construction: content specification, indicator specification, indicator collinearity, and external validity. Each of these issues is discussed in conceptual terms and also illustrated using empirical data. In doing so, the use of the LISREL program in fitting models involving formative measures is also demonstrated. Finally some thoughts are offered regarding the utilization of indexes in marketing studies.

For further information contact:
A. Diamantopoulos
Marketing and Business Research
Loughborough University Business School
Loughborough
Leicestershire LE11 3TU
England, United Kingdom
Phone: +44 1509 223123
FAX: +44 1509 223145
E-Mail: a.diamantopoulos@lboro.ac.uk
