

MISQ Archivist

Constructs and Indicators: An Ontological Analysis

Ron Weber

Abstract

Constructs and indicators are central to the efforts of many researchers who seek to build and test theories and articulate rich narratives about real-world phenomena. For this reason, an extensive discourse exists about their nature. Increasingly, this discourse has become fraught with controversy. Using Bunge's (1977, 1979) ontology, this article examines the nature of constructs and indicators as they are discussed in the extant literature. It defines these concepts precisely, disentangles conceptual from measurement issues, and points to ways that discourse about them could better proceed. The article shows that unidimensional constructs, multidimensional constructs, dimensions, and indicators are all properties in general of a class of things. It also shows that only three types of indicators exist: synonyms of the focal construct and succeeding or preceding properties in a pre-order of properties that includes the focal construct. The article examines ontologically the notions of content validity, convergent validity, discriminant validity, and internal-consistency reliability and shows their problematic nature. Two new concepts, scope validity and the level of concomitance of indicators, that have rigorous ontological foundations are introduced. Together, they provide a better foundation for assessing the construct validity of a set of indicators.

Keywords: Ontology, unidimensional constructs, multidimensional constructs, reflective indicators, formative indicators, convergent validity, discriminant validity, reliability, scope validity, level of concomitance

References

- Bunge, M. A. 1977. *Treatise on Basic Philosophy Volume 3: Ontology I—The Furniture of the World*, Dordrecht, The Netherlands: Kluwer Academic Publishers.
- Bunge, M. A. 1979. *Treatise on Basic Philosophy Volume 4: Ontology II—A World of Systems*, Dordrecht, The Netherlands: Kluwer Academic Publishers.