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Artifact validity: A missing element of IS rigor

Roman Lukyanenko, HEC Montreal roman.lukyanenko@hec.ca; Kai R. Larsen, University of Colorado kai.larsen@colorado.edu

An important element of rigor in the information systems (IS) discipline are research validities. Broadly, validity deals with the quality of scientific research and dependability of scientific findings. Research validities provide procedural templates to collect and analyze evidence and justify the arguments and conclusions of a research study. The IS discipline builds upon an established tradition of validity and validation from sociology, psychology, marketing and statistics and focuses on validity (e.g., internal, construct) in psychometric behavioral studies (e.g., Boudreau et al. 2001; Lukyanenko et al. 2019). Yet, another integral part of IS research has been almost completely neglected – validities dealing with information technology artifacts. It is time to begin filling this void.

To begin, we propose the scope for artifact validity corresponding to the main manifestations of artifacts in IS as (1) means to collect data, (2) objects of research (i.e., when properties of an artifact are of interest), and (3) as standalone research outcomes (i.e., when researchers develop novel IS). For example, when an artifact is used to collect data, its interaction with participants is likely to carry a set of biases, akin to observer effects. What is the nature of these biases, and how can they be mitigated? When a researcher is using an artifact as an antecedent in a theoretical model, the artifact typically operationalizes a level of a construct (e.g., high degree of personalization). This calls for a special kind of operationalization validity – coined recently as "instantiation validity" – which does not have established validation principles and appears to be performed in an ad hoc manner by researchers (Lukyanenko et al. 2014). An unchartered territory are the validities related to innovative artifacts (typical of design science research, DSR in IS). What does it mean for a novel solution to be scientifically valid? Traditionally, DSR focused on utility of innovative artifacts. Yet, the scientific component of DSR poses a question of whether one can conceptualize validity for these types of artifacts.

The standard procedures of quality and rigor - i.e., research validities - in IS continue to emphasize the behavioral aspect of the discipline and under-represent "artifact validities". With this work we hope to begin the efforts within our discipline to address this critical gap.

References

Boudreau, M.-C., Gefen, D., and Straub, D. W. 2001. "Validation in Information Systems Research: A State-of-the-Art Assessment," *MIS Quarterly* (25:1), pp. 1–16.

Lukyanenko, R., Evermann, J., and Parsons, J. 2014. "Instantiation Validity in IS Design Research," in *DESRIST 2014, LNCS 8463*, Springer, pp. 321–328.

Lukyanenko, R., Larsen, K. R., Parsons, J., Gefen, D., and Mueller, R. M. 2019. "Toward Creating a General Ontology for Research Validity," in *International Conference on Conceptual Modeling (ER 2019)*, Salvador, Brazil, pp. 133-137.