



## **Chapter II**

# **Validating IS Positivist Instrumentation: 1997-2001**

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## **ABSTRACT**

*Research quality depends on appropriate statistical validity, a major aspect of which is appropriate instrumentation. This survey examines the quality of IS instrumentation in five leading journals for a five-year period and concludes that much has been done to improve IS research quality through better instrument validation since the last two benchmark studies. Additional recommendations dealing with the current weak spots are discussed.*

## **INTRODUCTION**

The issue of rigor has been the subject of much discussion among information systems (IS) scholars. It has been argued that IS lacks the distinctiveness and rigor usually associated with scientific disciplines and remains institutionally weak (Avgerou,

2000). A specific area where rigor should be improved is the extent of instrument validation, as demonstrated in the work conducted by Straub and his colleagues (e.g., Boudreau, Gefen, & Straub, 2001; Straub, 1989). In Straub's article, it was reported that 19% of the articles in three IS journals over a three-year period had utilized either a pretest or a pilot test, 17% had reported reliability of their scales, 14% had validated their constructs, and only 4% had assessed content validity. These disappointing findings compelled Straub to issue a call for rigorous instrument validation, which was reassessed about a decade later. Boudreau et al.'s study, which expanded the number of sampled articles through the inclusion of additional journals, determined that "some real progress has been made in validating IS research." Indeed, their study showed that 47% of the sampled articles used a pretest or a pilot test, 63% reported reliability, 37% validated their constructs, and 23% assessed content validity. Although such improvements are considerable, Boudreau and her colleagues believed that these percentages were insufficient, and that "the field still has ground to make up to reach more comfortable levels of validation."

Enhancing instrument validation, we argue, will improve the overall process of conducting quantitative research because it is an elementary building block of statistical validity without which the results of any research are questionable (Cook & Campbell, 1979). In that spirit, this study seeks to provide an up-to-date assessment of the extent to which instrument validation is done rigorously. Our goal is to verify if IS researchers, considering their most recent publications, better validate their research instruments than they did before. We believe that in the past two years many researchers and journal editors have responded to the challenge of rigor in instrument validation as they now better understand its importance. This up-to-date assessment considers the same five journals as in Boudreau et al.'s (2001) work but extends the period of coverage to include five full years (i.e., from January 1997 to December 2001). The findings resulting from this inquiry lead us to highlight our strengths and weaknesses, which should be considered by IS researchers, reviewers, and journal editors. The basic premise of this evaluation is that the quality of research design directly manifests itself in the importance of the research findings and that without good design the conclusions may be unwarranted.

## METHOD

The method used in the current research replicates the one used in Boudreau et al. (2001). Accordingly, articles were sampled from the same five journals: *MIS Quarterly*, *Information Systems Research*, *Journal of Management Information Systems*, *Management Science*, and *Information & Management*. Although the original journal selection was mainly based on Nord and Nord's (1995) study, it is consistent with more recent rankings (i.e., Mylonopoulos & Theoharakis, 2001; Whitman, Hendrickson, & Townsend, 1999), which consider these five publishing outlets as being important ones within the field of MIS.

### Sampling and Coding Procedures

Articles from these five journals were reviewed, read, and coded for a period of inquiry starting in January 1997 and ending in December 2001. As in Straub (1989) and in Boudreau et al. (2001), the qualifying criteria for the sample were that the article

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