



Evidence Summary

Tracking Theory Building and Use Trends in Selected LIS Journals: More Research is Needed

A review of:

Kim, Sung-Jin, and Dong Y. Jeong. "An Analysis of the Development and Use of Theory in Library and Information Science Research Articles." Library & Information Science Research 28.4 (Sept. 2006): 548-62.

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Abstract

Objective - The authors measure theory incidents occurring in four LIS journals between 1984-2003 in order to examine their number and quality and to analyze them by topic. A third objective, only identified later in the text of the study, was to compare theory development and use between Korean and international journals. Research questions asked include whether LIS has its own theoretical base as a discipline, and what characteristics the theoretical framework has.

Design – Bibliometric study.

Setting – Journal issues selected from four

LIS journals for the time span from 1984 - 2003.

Subjects – Two international journals, *Journal of the American Society for Information Science and Technology (JASIST)* and *Library and Information Science Research (LISR)* were selected based on their high ranking in the *Social Sciences Citation Index (SSCI)* impact factors. Two Korean journals, *Journal of the Korean Society for Information Management (JKSIM)* and *Journal of the Korean Society for Library and Information Science (JKSLIS)* were selected.

Methods - After having determined a definition of theory, and identifying different levels of theory, the authors set up

rules for the identification of theory incidents, which are defined as “events in which the author contributed to the development or the use of theory in his/her own paper” (550).

Content analysis of 1661 research articles was performed to measure theory incidents according to working definitions. Interrater reliability was ensured by conducting independent coding for “subfield classification, identification of theory incidents, and quality measurement” (555), using a sample of 199 articles (random selection not specified), achieving 94-97% interrater reliability. Incidents, once identified, were evaluated for quality using Dubin’s “efficiency of law” criteria, involving measures of relatedness, directionality, co-variation, rate of change, and “profundity,” defined as the depth to which theory is incorporated into the research study.

Main Results - 21.79% (n=362) of the articles contained theory incidents that were analyzed and evaluated. Trend measurement indicated an overall increase, although a slight decrease was shown in the year range 1993-2003. International journals accounted for 61.33% of theory incidents, compared to 38.67% for the Korean journals. T-testing showed that differences in means between Korean and international journals were not statistically significant.

Topical theory areas were ranked by frequency. The top five areas were shown to be nearly identical between Korean and international journals. ANOVA was performed with significant results in the difference between efficiency ratings.

Conclusion – The authors find that the overall proportion of theory incidents including both theory development and use increased through the 20-year time span examined, and that LIS has established its

own theoretical framework based upon the frequency of incidents.

Commentary

Several significant flaws affect the applicability of an otherwise interesting and valuable study. The selection of journals for inclusion in this study is questionable on four different points. First, the authors chose *JASIST* and *LISR* based upon their high impact factor in *SSCI*, for LIS journals. The use of these impact factors to select the two international journals presents problems that are not discussed by the authors of this study, although it is possible that journal space limitations precluded a discussion of that nature. *SSCI* is known to index only 30 LIS journals, an issue that the authors make no attempt to address.

Second, the ranking of “top” journals by *SSCI* is not accomplished by any measure of research quality, but by citation frequency. According to Gorman and Calvert, “the fact that paper x is cited y times is not an indication of its quality – it is available, it is in a journal held by many libraries, the author (or publisher or editor) is particularly good at self promotion” (101). Even if we accepted the rankings, there is still no indication that the selected journals are representative of all international LIS journals. In fact, it is not proved whether the four journals are representative of their respective categories (international and Korean), yet Kim and Jeong claim generalizability from their results.

Third, *JKSIM* and *JKSLIS* were selected based upon their status as “top-ranked in Korean LIS society,” a statement which is not further clarified (553).

Fourth, the decision to sample issues of *JASIST* rather than to include the entire volume of publication for the year range chosen because of the comparatively large

output of that journal renders later statistical analysis problematic, and furthermore, may not be representative of the journal's publications. There is no apparent effort to consider whether that content, for example, may have included special issues or supplements. The decision is further questionable in light of the fact that the number of issues does not necessarily correlate with volume of research output, but the authors appear not to have considered this when making their selection decision.

The authors are careful in the literature review section to explain prior studies of theory use in disparate literatures, yet the same care is not carried over to the methodology section. The determination to identify theory incidents based upon whether the concept "has ever been named as a theory in any article in the sample" (553) might be interpreted to mean that concepts broadly accepted as theories, but merely not mentioned in the issues examined for this study, were rejected as theory incidents – possibly resulting in underreporting of data throughout the study.

The authors excel in clarifying concepts related to theory building and use, and in their literature review section in describing the context for this study. Unfortunately, there are no directly comparable studies because earlier efforts measure different elements or do not measure both construction and use of theory, as these authors do. To this reviewer, it appears that the authors overreach what can reasonably be achieved within the constraints of a brief research paper.

An additional problem that should be noted is the poor quality of editing for this paper: key statements are muddled by unclear phrasing. For example, the statement "There would be room for the intervention of other factors such as the productivity increase in

article publications, though," is grammatically awkward and sheds little light on a discussion about factors that may have influenced the apparent increase of theory incidents in LIS publication (560).

Due to insufficient data, some of the results are not reproducible. Providing data on theory incidents by individual journal title might have enlarged upon the usefulness of the study. In addition, including articles from the entire *JASIST* run would have given a more accurate accounting of theory incidents. As it is, the figures are not meaningful, and since the statistics are not broken out by journal title the reader cannot determine if any one of the journals diverges in any significant way from the others. In the discussion section the authors claim that a total of 41.4% of the 1661 articles engage in either theory building or use, yet no table or explanation of how this figure is derived is provided. Adding their own percentages for theory incidents (25.95% for theory use, and 21.79% for theory building) we arrive instead at 47.74%.

Additional data would also assist with comprehension of the ANOVA results. The authors provide an F statistic and overall p-value demonstrating significant results in the difference between efficiency ratings, but do not give individual p-values to verify the results. It is far from clear whether the differences being tested are those between international and Korean means, or between total means for each topical category. An additional column in Table 4 (557) would have greatly aided the reader.

This article is most useful in its well-constructed general methodology and categorization of theory topics, as well as in its careful explanation of theory research, and would assist researchers in constructing a more applicable study. The greatest weaknesses are in the selection of journals and in the explanation of the results,

damaging comprehensibility and applicability for readers. The authors would have strengthened their argument by acknowledging the flaws associated with the journal selection process. Because of these flaws, applicability of their findings is severely limited.

Work Cited

Gorman, G.E. and Philip J. Calvert. "Journal Quality in the Asian Region: Results of a Pilot Study for the IFLA Round Table of Library and Information Science Journals." Serials Librarian 41.1 (2001): 99-112.