

Enhancing Literature Review Methods - Evaluation of a Literature Search Approach based on Latent Semantic Indexing

Completed Research Paper

André Koukal

Leibniz Universität Hannover
Königsworther Platz 1,
30167 Hannover, Germany
koukal@iwi.uni-hannover.de

Christoph Gleue

Leibniz Universität Hannover
Königsworther Platz 1,
30167 Hannover, Germany
gleue@iwi.uni-hannover.de

Michael H. Breitner

Leibniz Universität Hannover
Königsworther Platz 1,
30167 Hannover, Germany
breitner@iwi.uni-hannover.de

Abstract

Literature search, as a fundamental and time-consuming step in a literature research process, is part of many established scientific research methods. The facilitated access to scientific resources requires an increasing effort to conduct comprehensive literature reviews. We address the lack of semantic approaches in this context by proposing and evaluating our Tool for Semantic Indexing and Similarity Queries (TSISQ) for the enhancement of established literature review methods. Its applicability is evaluated in different environments and search cases covering realistic applications. Results indicate that TSISQ can increase efficiency by saving valuable time in finding relevant literature in a desired research field, improve the quality of search results, and enhance the comprehensiveness of a review by identifying sources that otherwise would not have been considered. The target audience includes all researchers who need to efficiently gain an overview of a specific research field and refine the theoretical foundations of their research.

Keywords: Literature review, literature search, latent semantic indexing (LSI), information retrieval, similarity search