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Data Article

Data on the interaction between thermal comfort and building control research

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ABSTRACT

This dataset contains bibliography information regarding thermal comfort and building control research. In addition, the instruction of a data-driven literature survey method guides readers to reproduce their own literature survey on related bibliography datasets. Based on specific search terms, all relevant bibliographic datasets are downloaded. We explain the keyword co-occurrences of historical developments and recent trends, and the citation network which represents the interaction between thermal comfort and building control research. Results and discussions are described in the research article entitled "Comprehensive analysis of the relationship between thermal comfort and building control research – A data-driven literature review" (Park and Nagy, 2018).

Specifications Table

Subject area	*Engineering*
More specific subject area	*Thermal comfort and building control*
Type of data	*Text file and table*
How data was acquired	1. *Downloaded from Web of Science bibliographic database* 2. *Processed using VOSviewer software*

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Data format	*Raw and analyzed*
Experimental factors	*N/A*
Experimental features	*N/A*
Data source location	*N/A*
Data accessibility	*Data is with this article*

Value of the data

- The bibliographic information for thermal comfort and building control research articles (5536 papers)
- keywords co-occurrences for describing the historical development and recent trend for both thermal comfort and building control research
- Citation network for investigating the interaction between thermal comfort and building control research
- Instruction to reproduce our data-driven literature review method

1. Data

The dataset contains 3 folders: 1) The first folder is all the bibliographic information for thermal comfort and building control research. The total number is 5536 articles, and the publication range is from 1970 to 2016. Table 1 summarizes general information about the publications for the two different search periods. The bibliographic information is summarized by multiple text files. 2) The co-occurrences among keywords are described. Firstly, the keywords are extracted from the title and abstract text and they are further filtered by pre-defined thesaurus words. Subsequently, the keywords are clustered based on research topics. Finally, the co-occurrences among keywords are normalized as distances among them. The files contain each keyword and its coordinate for the two periods. For the visualization of this two, the figures can be found in the original research paper [1]. Tables 2 and 3 explain keyword analysis for historical developments and recent trends, respectively. 3) The papers essentially are classified by their research theme (i.e., thermal comfort, building control, both), and their citation relationship is tabulated by matrix form in the data. Table 4 describes the citation relationship among the three themes (i.e., thermal comfort, building control, intersection). Note that only 3572 papers build the citation relationship. This citation relationship is also visualized in the original research paper [1].

2. Methods

2.1. Data collection

For the publication collection, we selected Thomson Reuters' Web of Science bibliographic database [2]. We used the following logical combinations of search terms to collect relevant publications: For thermal comfort research related to buildings, we use the search term

(thermal comfort) AND (building*)

On the other hand, the search term for building control research related to energy efficiency was

(building* automation*)	OR (building* energy management*) OR (building* control*) OR (HVAC control*)