

# A Scientometric Approach to Determine and Analyze Productivity, Impact and Topics Based upon Personal Publication Lists

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With the aim of an empirical scientometric case study of information science institutes in Graz (Austria), a publication analysis was held based on the methodological approach of Friedländer (2014) and Hilbert et al. (2015), namely the use of comprehensive (personal or institutional) publication lists instead of applying data from commercial information services (like *Web of Science*, *Scopus* or *Google Scholar*). We determined and analyzed the publications for three institutes in Graz in terms of their productivity (publication output), impact (coverage and citation count) and topics (based on the publication's titles). For our study, we exclusively worked with complete (or manually completed) personal publication lists which were created from the personal websites of the authors and in consultation with the institutes. With the help of these lists as empirical data basis, it is possible to get very precise informetric results. Similar to our approach, Kirkwood (2012) used publication checklists. For the productivity it is – among other things – necessary to clarify what should be defined as a *publication* and as *one* publication (Stock, 2000). Regarding to the impact, the publications coverage in selected databases was checked. Before counting the citations in these databases, we

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split the document types of all publications into “relevant for citations” and “not relevant,” based on Garfield’s “citable items” (Garfield, 1972). Moreover the h-index (Hirsch, 2005) for the institutes and top-5 authors was determined. The topical analysis is composed of a set of rules to define topics. The creation of topical matrices is based on the approach by Stock (1990) as well as the creation of the topical maps using the Single Linkage method (Sneath & Sokal, 1973). Furthermore a survey with elements of the SWOT-Analysis (Meffert, Burmann, & Kirchgeorg, 2008) was conducted to obtain background information for a deeper interpretation of the results. We conducted in-depth interviews with representative of all analyzed institutions. The approach can be used for any aggregation of scientific institutions (single scientist, institute, city, region, etc.).

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