Chapter VII
Overview of Author Cocitation Analysis Procedures

ABSTRACT

The previous two chapters examined the two alternative approaches of retrieving cocitation counts using custom databases and cocitation frequency counts extraction systems. The cocitaion frequency counts are the inputs to the SAS or SPSS systems for multivariate statistical analysis. The primary purpose of this chapter is to overview several important steps in author cocitation analysis. ACA consists of the six major steps beginning with the selection of author sets for further analysis, then collection of cocitation frequency counts, statistical analysis of the cocitation frequency counts, and the validation and interpretation of statistical outputs.

INTRODUCTION

ACA consists of the assembling and interpretation of bibliographical statistics taken from the cited references which are taken from the selected citing articles. (See Figure 1).

1. Selection of Author
2. Collection of Cocitation Frequencies
3. Preparation of SAS Input Files

4.   Multivariate Statistical Analysis of Correlation Matrix
5.   Output Preparation
6.   Validation and Interpretation

SELECTION OF AUTHORS/COCITATION THRESHOLDS

The goal of ACA is to produce empirical maps of prominent authors in an academic discipline. The first step is to select the eminent scholars in the academic discipline. Basically, two approaches are available: starting a predetermined list of authors in a given field (the subjective approach), or compiling a set of authors from scratch (the objective approach). An important purpose of ACA is an overall examination of the intellectual structure of an academic discipline. Therefore, it is critical to establish a diversified list of authors. McCain (1990, p.433) states:

In the aggregate, this author set defines the scholarly landscape being mapped. If the authors are not chosen to capture the full range of variability in subject specializations, methodologies, political orientations, etc., these aspects of structure cannot be determined.

SUBJECTIVE (TOP-DOWN) APPROACH

The first approach may start with a pre-determined list of authors or with the selection of a list of authors to be searched as cited references in the ISI databases as discussed by McCain (1990). The predetermined list of authors can be compiled by:

•   Personal knowledge
•   Consultation with researchers in the area to be studied
•   Conducting surveys
•   Using directories
•   Organizational membership
•   Conference attendance rosters
•   Lists of awards, etc.

Compiling a predetermined list of authors inevitably involves subjective judgments. This approach can be efficient because no lengthy time is spent finalizing a list of authors for further analysis. A critical weakness of this approach is that it may often fail to identify emerging scholars in a given area of an academic discipline. The majority of previous research in this area has used the subjective

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