

What is a discipline? The conceptualization of research areas and their operationalization in bibliometric research

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What is a discipline?

There are many definitions and operationalizations of what an academic discipline is (Krishna, 2009; Sugimoto & Weingart, 2015). In this paper I argue that *institutional manifestation* is the most distinctive criteria: “[di]sciplines are the institutional mechanisms for regulating the market relations between consumers and producers of knowledge.” (Lenoir 1997, p. 47) Importantly, the institutional dimension separates ‘discipline’ from related concepts such as field, domain, area, subject etc. Yet, this crucial distinction is often overlooked when the concept is used in bibliometric research.

How is the concept used in bibliometrics?

Two common uses of ‘discipline’ in bibliometric research is exemplified below in specimens from recent articles in *Scientometrics*.

Example 1. Treating ‘discipline’ as synonymous to subject categories

... all *subject categories* in the tables have a significant connection to the practical use of scientific results (e.g. Primary Health Care, Allergy, or Business, Finance). These are *disciplines* where a more significant societal impact is understandable. (Scientometrics (2017) 110:1209–1216, *italics added*).

Example 2: Using ‘discipline’ as a scalable unit in a larger classificatory structure

The data covers 23 ASJC *top level disciplines* and 251 ASJC *sub-disciplines*. In addition, the GRBS includes a higher level of broad categories that groups the 23 All Science Journal Classification (ASJC2) top level disciplines into the following 15 *broad disciplinary areas*.” (Scientometrics (2017) 110:217–241, *italics added*).

The argument in brief:

- (1) bibliometric research often use the concept of ‘discipline’ vaguely, and without providing proper definition;
- (2) outside the field of bibliometrics disciplines are often viewed as specific social and organizational units that are historically situated;
- (3) this understanding of disciplines is not always in agreement with its use in bibliometrics;
- (4) the vague and sometimes inaccurate use of concepts in bibliometrics have consequences for the ability to build on previous knowledge and communicate finding clearly.

Consequently, even more advanced algorithms, larger datasets and refined mapping techniques can never hide fundamental imprecision in defining and conceptualizing the object under study.

But, cannot conceptual vagueness be seen as a strength? Indeed, vagueness can be productive and foster creativity (Strunz, 2012), and vagueness might serve as ‘boundary object’ allowing multiple interpretations (Sugimoto & Weingart, 2015). Yet, reflexive and deliberate vagueness is something different than conceptual impreciseness.

Literature

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