Scientific Metrics

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Agenda

Problem

Assessing the quality and impact of research outputs is necessary

Every Metric has its limitations

No easy way exists to measure scientific performance

The initial goal of scientific publishing was to facilitate the sharing of scientific results, ideas, and discussions within the academic community for more effective scientific achievements.

Influence of a publication is used for

Allocation of funding resources

Industrial and economic growth priorities

Education policies

The hiring of personnel academics

Bibliographic Databases

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What is a bibliographic database?

A bibliographic database is a storage of bibliographic records.

They are built on the fact that citations in science serve as linkages between similar research items, and lead to related scientific literature

Frequently used biomedical databases include

    Web of Science

    Scopus

    Google Scholar

Bibliographic Databases: advantages and disadvantages

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Types of Research Metrics

Journal-level metrics are used to determine the impact a journal has on the scientific community

> Impact Factor

Article Metrics and Altmetrics are used to quantify the impact of published articles-how published papers are being discussed and shared.

> Citation Counts

> Attention Score

Author-level metrics assess the impact an author makes on the scientific community or field of the study.
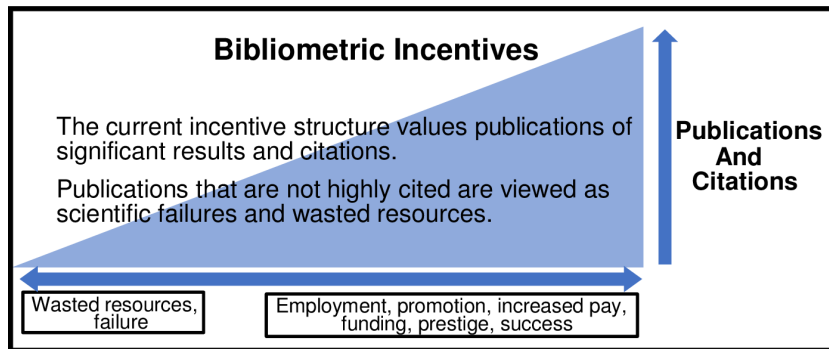
> H-Index

> G-Index

Figure 2: Bibliometric incentives model. [1]

Altmetric Attention Score

What is Altmetric Attention Score?

The Altmetric Attention Score is an automatically calculated, weighted count of all of the attention a research output has received

It is calculated using data collected from research articles such as mentions on social media, news outlets, blogs, patents, etc.

The Colors of the Donut

- Policy documents
- News
- Blogs
- Twitter
- Post-publication peer-reviews
- Facebook
- Sina Weibo
- Syllabi
- Wikipedia

- Google+
- LinkedIn
- Reddit
- Research highlight platform
- Q&A (Stack Overflow)
- Youtube
- Pinterest
- Patents

Figure 3: The colors of different sources of attention

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- ✗ Not telling the whole story
- ✗ People can artificially raise the altmetrics for their research
- ✗ Altmetrics are relatively new

References I