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Springer Handbook of Science and Technology Indicators

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- Includes state-of-the-art descriptions of the wide variety of indicators and methods used for research and innovation assessment
- Represents a timely and up-to-date reference, taking into account recent technological developments and their impact on the field of science and technology studies
- Offers an invaluable resource for practitioners, scientists and policy makers alike

This handbook presents the state of the art of quantitative methods and models to understand and assess the science and technology system. Focusing on various aspects of the development and application of indicators derived from data on scholarly publications, patents and electronic communications, the individual chapters, written by leading experts, discuss theoretical and methodological issues, illustrate applications, highlight their policy context and relevance, and point to future research directions. A substantial portion of the book is dedicated to detailed descriptions and analyses of data sources, presenting both traditional and advanced approaches. It addresses the main bibliographic metrics and indexes, such as the journal impact factor and the h-index, as well as altmetric and webometric indicators and science mapping techniques on different levels of aggregation and in the context of their value for the assessment of research performance as well as their impact on research policy and society. It also presents and critically discusses various national research evaluation systems. Complementing the sections reflecting on the science system, the technology section includes multiple chapters that explain different aspects of patent statistics, patent classification and database search methods to retrieve patent-related information. In addition, it examines the relevance of trademarks and standards as additional technological indicators.
Springer Handbook of Science and Technology Indicators – Table of Contents


PART A: Analysis of Data Sources and Network Analysis
1. V. Larivière, C.R. Sugimoto: The Journal Impact Factor: A brief history, critique, and discussion of adverse effects
2. M. Zitt, A. Lelu, M. Cadot, G. Cabanac: Bibliometric delineation of scientific fields
3. R. Rousseau, I. Zhang, X. Hu: Knowledge Integration: Its meaning and measurement
5. D. Torres-Salinas, N. Robinson-Garcia, H.F. Moed: Disentangling open access
6. K. Borner, S. Milojević: Science Forecasts: Modeling and communicating developments in science, techn. and innovation
8. K. Boyack, R. Klavans: Creation and analysis of large-scale bibliometric networks
9. B. Thijs: Science mapping and the identification of topics: Theoretical and methodological considerations

PART B: Advancement of Methodology for Research Assessment
10. A. van Raan: Measuring science: Basic principles and application of advanced bibliometrics
11. L. Waltman, N.J. van Eck: Field normalization of scientometric indicators
12. A. Schubert, G. Schubert: All along the h-index-related literature: A guided tour
13. W. Glänzel, B. Thijs, K. Debackere: Citation classes: A distribution-based approach for evaluative purposes
14. L. Wildgaard: An overview of author-level indicators of research performance
15. M. Lenzerini, C. Daraio: Challenges, approaches and solutions in data integration for research and innovation
16. L. Leydesdorff, I. Ivanova, M. Meyer: Synergy in innovation systems: Redundancy in the triple helix of university-industry-government relations

PART C: Science Systems and Research Policy
17. K. Debackere, W. Glänzel, B. Thijs: Scientometrics shaping science policy, science policy shaping scientometrics: Experience from the ECOOM case
18. S. Hinze, L. Butler, P. Donner: Different processes, similar results? A comparison of performance monitoring in the UK, Australia and Germany
20. Z. Ma: The relevance of national journals from a Chinese perspective
21. G. Halevi: Bibliometric studies on gender disparities in science
22. E. Pallari, G. Lewison, I. McAllister: How biomedical research can inform both clinicians and the general public
23. L. Bornmann: Societal impact measurement of research papers
24. C. Daraio: Econometric approaches to the measurement of research productivity
25. G. Sievertsen: Developing Current Research Information Systems (CRIS) as data sources for studies of research

PART D: New Indicators for Research Assessment
26. P. Wouters, Z. Zahedi, R. Costas: Social media metrics for new research evaluation
27. A. Zuccala, N. Robinson-Garcia: Reviewing, indicating, and counting books for modern research evaluation systems
28. S. Haustein: Scholarly Twitter metrics
29. E. Mohammadi, M. Thelwall: Readership data and research impact
30. J. Bar-Ilan: Data collection from the Web for informetric purposes
31. K. Kousha: Web citation indicators for wider impact assessment of articles
32. E.A. Henneken, M. Kurtz: Usag bibliometrics as a tool to measure research activity
33. M. Thelwall: Online indicators for non-standard academic outputs

PART E: Advancement of Methodology for Patent Analysis
34. C.K.-S. Leung, W. Lee, J.J. Song: Information technology-based patent retrieval methods
35. R. Frietsch, P. Neuhäusler: The role of patent attorney in the filing process
36. I. Gialampoukidis, A. Moumtzidou, S. Vrochidis, I. Kompatsiaris: Exploiting images for patent search
37. U. Schmoch, M. Khan: Methodological challenges for creating accurate patent indicators
38. B. van Looy, T. Magehrmaner: Similarity of patents and publications

PART F: Patent System, Patents and Economics
41. P. Neuhäusler, R. Frietsch: Computer-implemented inventions in Europe
42. S. Mendonça, U. Schmoch, P. Neuhäusler: Interplay of patents and trademarks as tools in economic competition
43. C.-Y. Wong, H.-N. Fung: Post catch-up science and techn. trajectories: Publish. and patenting activities of China and Korea
44. K. Blind: Standardization and standards as science and innovation indicators