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Workshop report: 28th Nordic workshop on bibliometrics and research policy, October 11–13, 2023, Gothenburg, Sweden

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Abstract

The Nordic workshop on bibliometrics and research policy has been an annual event for almost three decades, rotating between the Nordic countries. It is a forum for the bibliometrics community to discuss contemporary research practices and policies. The 28th edition of the workshop took place in Gothenburg, Sweden. Featuring 27 oral and 15 poster presentations authored by 104 individuals, this event attracted 119 attendees from 19 countries. The event helped the participants to enhance their knowledge and engage with their peers. This workshop report offers insights into the pre-workshop sessions and provides an overview of the oral presentations across eight thematic sessions, keynote speeches, panel discussions, and poster sessions. Additionally, it includes references with links to presentations, posters, the book of abstracts, recording of keynote speeches and panel discussion.

Introduction

The 28th Nordic workshop on bibliometrics and research policy (NWB2023) was hosted by the Department of Communication and Learning in Science at Chalmers University of Technology in Gothenburg, Sweden, from October 11 to 13, 2023. NWB2023 was a platform for exchanging innovative ideas and fostering intellectual discourse among researchers, academics, and practitioners in bibliometrics and research policy. NWB2023 received an impressive total of 64 abstract submissions, the highest number in NWB's 28-year history, indicative of the workshop's growing significance in the scholarly community. The rigorous peer-review process featured 27 oral and 15 poster presentations, with an acceptance rate of 66%, collectively authored by 104 individuals. The multifaceted nature of the contributions highlighted the depth and breadth of the scholarly community's contemporary issues. Notably, NWB2023 attracted an international audience, with 119 participants representing 19 countries (NWB, 2023b). The geographical diversity of attendees enhanced the workshop's global perspective, providing a unique opportunity for cross-cultural collaboration and knowledge exchange. The success of NWB2023 can be attributed not only to the quality of the submissions and the rigorous review process but also to the collaborative spirit and engagement of the diverse community that met in Gothenburg. The workshop provided a unique opportunity for researchers to network and collaborate with colleagues in the field of bibliometrics, making it a must-attend event for anyone interested in this area of research.

In this report, we, the organizing committee members, endeavour to review the significant moments, contributions, and results of NWB2023, highlighting its impact on the discourse surrounding bibliometrics and research policy. We outline a brief history of NWB, offer insights into the pre-workshop sessions, and subsequently provide an overview of the oral presentations conducted within eight thematic sessions, poster session, along with highlights from the keynote speeches and panel discussion.

A brief history of NWB

The NWB is an annual event initially established in 1996 by Professors Olle Persson, Peter Ingwersen and Terttu Luukkonen (Åström et al., 2009; Larsen, Nykyri, et al., 2023). From 1996 to 2001, the 'Nordic workshop on bibliometrics' was held to provide a forum for researchers and practitioners to exchange knowledge on bibliometrics. Following the success of the initial gatherings, Professor Gunnar Sivertsen proposed adding '...and research policy' to the workshop name to emphasize the research policy aspects. Hence, it has been renamed as the 'Nordic workshop on bibliometrics and research policy' since the 2002 workshop in Oslo (personal communication with Professor Birger Larsen, February 9, 2024). This expanded forum covers bibliometrics and addresses broader research policy issues such as evaluation and impact assessment (NWB, 2023a).

The NWB has been held every year for nearly three decades, rotating between Denmark, Finland, Iceland, Norway, and Sweden and attracting a diverse audience who gather to share knowledge and expertise in a friendly and open environment. This series of workshops has been providing a forum for the bibliometrics community to discuss various research policies and practices, fostering collaboration among Nordic countries. The workshop is conducted entirely in English and is open to participants from all over the world. There is no registration fee to attend, but attendees must cover their travel and accommodation expenses.

The annual workshops are coordinated by a steering group comprising one representative from each of the five Nordic countries. The host organization, in turn, forms the organizing committee each year, which takes on the responsibility of organizing the workshop. Once the workshop is over, the host organization hands the baton to the following country in the rotation.

NWB2023 (<https://nwb2023.lib.chalmers.se>) marked the first occasion for Gothenburg to serve as the host city for this esteemed workshop. Previous workshops in the series

were held in Helsinki (1996, 2012, 2017), Stockholm (1997, 2001, 2005, 2009, 2013), Oslo (1998, 2002, 2006, 2015, 2020), Copenhagen (1999, 2007, 2016), Oulu (2000), Aalborg (2003, 2011), Turku (2004, 2022), Tampere (2008), Bergen (2010), Reykjavik (2014, 2019), Borås (2018) and Odense (2021).

Four pre-workshops on day one

Diverse and thought-provoking discussions unfolded during the four pre-workshop sessions on day one. The sessions provided a unique platform for experts and practitioners to share insights, methodologies, and perspectives on the evolving landscape of bibliometrics and research assessment.

The first pre-workshop session, titled 'Impact beyond academia,' was led by Nick Godwin (Elsevier, UK) and Ju Chen (Elsevier, the Netherlands). They presented the capabilities offered by the SciVal tool, which provides a comprehensive set of indicators and insights to understand research impact beyond the conventional metrics. By integrating peer review and expert knowledge, they highlighted the importance of taking a comprehensive and multi-dimensional approach to assessing research impact. They emphasized the significance of utilizing a range of indicators and factors to gain a complete understanding of the impact of research (Godwin & Chen, 2023).

The second pre-workshop session, organized by Ivar Ternsell Torgersen (Sikt – Norwegian agency for shared services in education and research) and Gustaf Nelhans (University of Borås, Sweden), focused on the establishment of a Nordic network for advanced bibliometrics. The initiative wants to employ tools such as algorithmic classification, machine learning, citation context analysis, linked data, APIs (Application programming interfaces), and data visualization methods to enhance the understanding of scholarly communication, research impact, and knowledge dynamics. With these tools, the network aims to efficiently analyse complex data sets, identify patterns, and provide insights to inform decision-making and improve outcomes in the academic and

research fields. This initiative aims to foster collaboration among researchers and practitioners in Nordic countries, promoting the development and application of innovative bibliometric techniques and collaborative learning (Torgersen & Nelhans, 2023).

In the third pre-workshop session, Ross W. K. Potter (Clarivate, UK) presented 'Rankings and the future of research assessment.' Over time, there has been an increasing need to go beyond measuring a university's impact and excellence based solely on its scientific output. Nowadays, universities are expected to generate a broader impact, including their contribution to society and the economy, the support and guidance they offer students as they progress in their careers, and their commitment to equity, inclusion, and diversity. The discussion emphasized the importance of creating new indicators that could be used to rank universities based on their overall impact and contributions. Using multiple data sources, universities could be ranked based on their success in various areas, providing a more comprehensive picture of their impact and excellence (Potter, 2023a).

The fourth and final pre-workshop, contributed by Tim C. E. Engels and Raf Guns (University of Antwerp, Belgium), provided insights into 20 years of performance-based research funding (PRFSs) in Flanders, Belgium. The presentation was centred around the evolving nature of Flemish PRFSs since 2003, with participants sharing their observations on the gradual changes. They highlighted the possible implications of these changes on the university support offices, considering the challenges they may face in adapting to the new circumstances. The discussion focused on the complexities of data collection, curation, transparency, and validation of each process (Engels & Guns, 2023).

By bringing together diverse perspectives and expertise, these pre-workshops contributed to the ongoing dialogue surrounding bibliometrics and research assessment methodologies.

Insights from eight oral presentation sessions

NWB2023's oral presentations were delivered across eight thematic sessions covering various topics, showcasing the interdisciplinary nature of contemporary research efforts. There were 27 papers presented at the event, with Sessions I, II, and VII featuring four papers each, while the remaining sessions had three papers each.

Session I, 'Research evaluation,' was an insightful session where researchers showed the connections between metrics, research quality, and the research process. The session included an innovative performance framework at the institutional level that could help assess and improve research quality across various academic disciplines. Additionally, the presenters covered a comprehensive assessment of the research competitiveness specific to Nordic countries (Piro & Aksnes, 2023). This session also emphasized a cross-national comparison of co-authorship practices in Social Sciences and Humanities (SSH), highlighting the differences and similarities in collaborative research practices across different countries (Engels et al., 2023). There were thoughts about several metrics and indicators that could be used to evaluate research quality and impact, which could help researchers, academic institutions, and policymakers make informed decisions about research funding and resource allocation (Larsen, Bennike, et al., 2023). Finally, there was an overview of the research landscape in the Nordic countries, including the strengths, weaknesses, opportunities, and threats to the research ecosystem in the region (Abramo & D'Angelo, 2023).

Session II, 'Patent analysis and research funding,' was a highly informative session that explored the strategic use of patent analysis for gaining foresight, insights, and evaluating methodologies. The session included several practical applications of knowledge in technological development for patenting within university contexts (Martini & John, 2023). The audience was presented with a comprehensive overview of the patent analysis process and its importance in achieving

business goals (Ding & Herbert, 2023). The session also contained an overview of several organizations that contribute to funding Nordic research initiatives, which was beneficial for those seeking research funding (Potter, 2023b). The last presentation of this session centred on bibliographic coupling, which was conceptualized as a 'sleeping beauty,' and an innovative similarity measure was also used. Moreover, it focused on the identification of underutilized research and the development of new research areas (Demaine, 2023). Overall, the session provided a thorough understanding of different aspects of patent analysis and research funding.

In session III, 'Research integration and policy citation,' the first presentation stated how scientific literature plays a vital role in shaping policies, especially in Swedish governmental reports. It emphasized that the scholars who aim to influence policy may need to broaden their publishing channels beyond English-language peer-reviewed journals and focus on local language (Salö et al., 2023). The second presentation demonstrated the influence of Nordic scientific publications on policy formulation, utilizing regional scientific knowledge. It offered insights into the integration of scientific research from Nordic countries into policy-making processes and suggested ways to enhance this integration for the advancement of scientific endeavours in the region (Maleki & Holmberg, 2023). Furthermore, the last presentation of this session showed a comprehensive analysis that covered various aspects of the research-policy ecosystem. This included a detailed examination of the actors involved, such as scientists, policymakers, and stakeholders, as well as their motivations and interests contributing to the dynamic interplay within the research-policy ecosystem (Hart et al., 2023). Overall, the session illuminated the complex nature of science-policy interactions, highlighting the importance of effective communication and collaboration between the scientific community and policymakers for evidence-based decision-making.

During session IV, 'Information retrieval and bibliometric analysis,' we discovered the

challenges associated with understanding the vast domain of scholarly journals. The first presentation focused on the persistent gaps in our knowledge of scholarly landscapes, spanning several disciplines and highlighted the importance of collaborative efforts to bridge these gaps. The discussion provided insights into the various tools and techniques used for information retrieval and bibliometric analysis and how they can be employed for effective scholarly communication (Laakso & Pölönen, 2023). During this session, the importance of a rigorous approach to crafting extensive cross-disciplinary bibliometric searches was discussed, along with proven strategies for formulating new search queries and refining existing ones that have been successfully employed in the past. The presenters integrated insights from experts, scientific papers, and policy documents to define the search terms or combinations necessary for initiating the search query development process with precision (Overballe-Petersen, 2023). The session also explored scholarly misconduct and the potential repercussions for authors involved in such practices. Participants gained insights into the ethical and professional standards that researchers are expected to uphold, along with strategies to steer clear of the pitfalls associated with misconduct (Sharma & Mukherjee, 2023). Overall, the session was informative and provided insights into the complex world of scholarly communication.

In session V, 'Scholarly publishing and peer review,' participants learned about the numerous challenges inherent in the peer review process. These challenges included the scarcity of available peer reviewers and the significance of upholding research quality in publications. Furthermore, the discussion encompassed potential strategies and solutions to enhance the efficiency of the peer review process, such as utilizing technology for automation and fostering a more collaborative approach to peer review (Nelhans & Wien, 2023). The session also focused on the significance of trade publications in disseminating research outcomes to professionals such as engineers, clinicians, architects, and other experts in their respective

fields. It explored their reading patterns, engagement with the content, trust level, and influence of the information presented in these publications (Dobre et al., 2023).

In session VI, 'Multilingual scientific discourse and citation practices,' the first presentation compared the viability of Wikipedia as a source for bibliometric analyses with traditional publication data. It used the example of the circular economy to point out that new topics or recent trends need to be better covered in regular sources. It emphasized how using Wikipedia data adds value when looking at bibliometrics (Richter et al., 2023). The second presentation addressed the distinctive contribution of non-English Wikipedia to research literature, emphasizing numerous publications exclusively referenced in this linguistic variant. These observations suggest that each iteration of Wikipedia makes a unique contribution to the representation of knowledge within its specific stakeholder communities, featuring the importance of multilingualism in disseminating knowledge (Taylor et al., 2023). The third presentation introduced a metric that can be used to calculate the field affinity between any citing and cited fields. This metric can be utilized to determine the degree of interdisciplinarity present within the references of a particular publication. By measuring the level of affinity between each field pair, one can gain a deeper understanding of the interdisciplinary connections that exist within the publication (Karlstrøm & Aksnes, 2023).

Session VII, titled 'Research mobility and international collaboration,' the first presentation showed that the SSH encompasses several disciplines (history, literature, linguistics, etc.) that focus on human behaviour, society, and cultural complexities. The participants learned that SSH publications focus heavily on specific countries and regions rather than taking a more global approach. Furthermore, local-language publications are often geared toward addressing local societal issues and concerns rather than broader international topics (Guns et al., 2023). The second presentation highlighted the patterns of global collaboration, the impact of

geopolitical influences on science, and the various factors that shape scholars' movements in Nordic countries and the wider international scientific community. One contribution emphasized the importance of international collaboration in advancing research and emphasized the need for scholars to be accessible to move across borders to pursue their work (Sivertsen, 2023). The third presentation showed that in the Nordic region, most researchers have multiple affiliations with different institutions and tend to expand their initial list of affiliations by adding new institutions, thus broadening their network, and increasing collaboration opportunities. Sweden is a popular choice for Nordic researchers to relocate to, except for those from Denmark (Kovač & Potter, 2023). Finally, the session explained several factors that could potentially influence the number of scientific immigrants, such as the significance of social capital connections between countries and the impact of countries' economic and scientific strengths (Liu & Bu, 2023).

Lastly, session VIII, 'Open Science,' explored into the topic of creating an open science ecosystem to transform research and research evaluation. One contribution underlined that the Finnish Open Science and Research (OScaR) framework could be leveraged to develop knowledge-based management strategies and administrative services that enhance information systems and practices. The importance of evaluation indicators to ensure responsible decision-making was also discussed (Nykyri et al., 2023). Further, a comprehensive analysis investigated the correlation between income levels and publication trends based on the data obtained from the directory of open access journals (DOAJ) and highlighted that the Gold open-access model disadvantages non-high-income country researchers and argued for the support of diamond open-access to achieve better global equity and diversity in knowledge (Druelinger & Ma, 2023). The session also provided an overview of the citation advantage associated with open-access publishing in higher education institutions. The significance of open access in facilitating academic citation practices and promoting wider accessibility of

scientific research was also emphasized during this session (Johansson & Rabow, 2023).

Key insights from keynote speakers: causality in open science, AI in journal article quality assessment, and global science dynamics

The workshop featured three keynote speakers, the first of whom was Dr. Vincent A. Traag, senior researcher at the Centre for Science and Technology Studies (CWTS) of Leiden University. Traag's talk focused on the challenges posed by causality in open science. He emphasized the growing importance of open science in research methodologies and academic practices, highlighting the complexity involved in determining causal effects and the need to consider causality when interpreting indicators and discussing policies for open data. Traag distinguished between the impact of open science and the effect of openness on impact. In this regard, he explained that increasing access to open data does not necessarily result in more replicable research. Using simulation data, he concluded that while open data make research reproducible, methodological rigor—a key element in the peer assessment of new scientific knowledge—ultimately makes research even more reproducible. Traag's talk was insightful, informative, and thought-provoking, providing the audience with a clear understanding of the complexities and challenges of open science research methodologies (Traag, 2023b).

The second keynote speaker, recipient of the 2015 Price Medal, Professor Michael Thelwall from the University of Sheffield, discussed 'Estimating expert review quality scores for journal articles with bibliometrics and artificial intelligence.' Thelwall presented his recent research that delved into the potential of artificial intelligence (AI) in estimating the quality of journal articles, benchmarked against the assessment conducted for the UK's research excellence framework (REF) 2021 by humans. His team's approach involved testing several machine learning algorithms to predict

article quality scores. Despite achieving moderate accuracy, the results indicated that AI is not yet reliable enough to replace human expert reviews in academic evaluations. He showed that a high score given by the REF reviewers to individual journal articles did not always correlate with a corresponding high impact factor of the journal. Nevertheless, scientific research that had received higher scores was more likely to have been published in journals with higher impact factors (Thelwall et al., 2023).

The third keynote speaker, Professor Cassidy Sugimoto—Tom and Marie Patton school chair in the school of public policy at Georgia Institute of Technology and former president of the international society for scientometrics and informetrics (ISSI)—discussed the increasingly global nature of science and the importance of exchanging knowledge, resources, and researchers across borders. She used bibliometric data to explore the scientific output of different nations, their development trajectories, and the impact of scientific mobility, global funding, and collaboration on national science portfolios. She also addressed challenges that hinder promoting a fair global science system—including the dominance of English as a single *lingua franca*, gender inequalities, isolationism, and the exploitation of lower-income countries for data collection with little or no involvement from local scientists and no benefit for the local community. The epistemic consequences of these issues, such as systemic biases in prioritizing research topics, were also emphasized. However, science diplomacy, collective infrastructure, and science observatories backed by scientometrics research were presented as promising mitigations to these issues (Sugimoto, 2023b).

You can find the recorded keynote speeches on the 28th NWB's YouTube channel (Sugimoto, 2023a; Thelwall, 2023; Traag, 2023a).

Panel discussion: responsible research assessment – with or without the Nordic bibliometric indicator

NWB2023 included a panel discussion on 'Responsible research assessment – with or without the Nordic bibliometric indicator' (Pölönen et al., 2023b). The panel comprised experts in research assessment and bibliometrics from five Nordic countries: Marianne Gauffriau (IT University of Copenhagen) from Denmark, Laura Niemi (University of Turku) from Finland, Baldvin Zarioh (University of Iceland) from Iceland, Gunnar Sivertsen (NIFU – Nordic Institute for Studies in Innovation, Research, and Education) from Norway, and Björn Hammarfelt (University of Borås) from Sweden. Janne Pölönen (Federation of Finnish Learned Societies, Finland) moderated the discussion. The panel addressed three questions from national and institutional perspectives: i) What are the most important recent changes in using the Nordic bibliometric indicator in your country or institution? ii) What have been the main concerns about the uses of the indicator concerning the RRA (Responsible research assessment) agenda and the CoARA (Coalition for advancing research assessment) agreement? iii) What is the role of journal evaluation (by citation metrics or experts) in addressing predatory, questionable, deceptive, and low-quality publishing practices? The recording of the panel discussion is available on the 28th NWB's YouTube channel (Pölönen et al., 2023a).

Poster session

The poster session was a significant event, featuring a total of 15 posters. The session started with an exciting poster minute madness, where each presenter was given one minute to pitch their poster and describe their research. Participants were impressed with the diversity and quality of the presentations. Two posters stood out from the rest and were jointly declared the winners of the Best Poster Award, chosen by the participants' votes. The first poster, titled 'The SDGs and publications of the University of Helsinki: Tracking contributions

responsibly?' was presented by Petri Turunen, Tuula Huuskonen, and Terhi Sandgren from the Helsinki University Library in Finland. It highlighted the responsible tracking of contributions towards sustainable development goals (SDGs) through publications of the University of Helsinki (Turunen et al., 2023). The second poster, titled 'Collecting author affiliation data for Flemish non-web of science SSH publications: Process, results, and lessons learned,' was presented by Peter Aspeslagh from the University of Antwerp in Belgium. This poster focused on the challenges and lessons learned from collecting author affiliation data for Flemish non-web of SSH publications (Aspeslagh, 2023).

Closing remarks and future endeavors

The Book of Abstracts (<https://nwb2023.lib.chalmers.se/book-of-abstracts>) of the NWB2023 is available in two convenient formats: Flipbook and PDF. The Book of Abstracts, presentation slides and posters are available open access. Readers can easily navigate the corresponding abstracts, presentation slides, and posters from the program page (<https://nwb2023.lib.chalmers.se/program>) too. Tweets about the presentations and posters are available on the X platform (<https://twitter.com/nwb2023>). The photos

are available on Instagram (<https://www.instagram.com/nordicworkshop2023>).

NWB2024 is scheduled to take place in Reykjavik, Iceland, in November 2024. The workshop will be co-convened by the University of Iceland and the National and University Library of Iceland.

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