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International Bibliometric Structures and Occupational Therapy Scholarship An Integrated Analysis of Research Performance, Journal Ecology, and Global Collaboration

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Abstract

This study develops a comprehensive and theoretically grounded bibliometric examination of occupational therapy and allied scientific domains by integrating classical scientometric frameworks, journal ecology, and international collaboration models. Drawing exclusively from foundational bibliometric and occupational therapy literature, this article positions occupational therapy scholarship within the broader architecture of science and technology indicators, research performance measurement, and global knowledge exchange. The work is rooted in the theoretical contributions of Moed, Van Raan, Okubo, and the National Science Foundation and is further contextualized by occupational therapy specific journal mapping studies by Ziviani, Reed, Potter, Rodger, Sainty, and Pearl. By merging these two bodies of literature, the article advances an integrated model explaining how disciplinary maturity, journal visibility, and international research collaboration interact to shape scholarly influence, research productivity, and policy relevance.

The abstract argues that occupational therapy as a discipline reflects a transitional phase in scientific institutionalization, moving from professional practice rooted literature toward a fully developed research intensive knowledge system. This transformation is captured through bibliometric indicators such as citation patterns, journal dispersion, and authorship collaboration structures. Using the conceptual tools of link indicators and citation based performance metrics, the study explains how occupational therapy journals have historically suffered from fragmented indexing coverage and limited international reach, while simultaneously gaining methodological sophistication and thematic diversity over time.

The methodology is conceptual and interpretive rather than statistical, employing systematic comparison of bibliometric theories and occupational therapy journal studies. It relies on detailed textual synthesis of citation analysis, database coverage evaluations, and longitudinal assessments of research output. The results demonstrate that occupational therapy journals occupy a peripheral but increasingly central position within interdisciplinary scientific networks, particularly in rehabilitation sciences and health outcomes research.

The discussion explores the implications of these findings for academic promotion systems, doctoral education, journal policy, and international research collaboration. It highlights structural barriers such as database bias, language dominance, and disciplinary boundary effects that continue to limit the global visibility of occupational therapy research. At the same time, it shows how evolving citation practices, cross disciplinary publication strategies, and policy driven research funding are gradually reshaping the bibliometric identity of the field.

Keywords: Bibliometrics, occupational therapy, research performance, scientific collaboration, journal impact, citation analysis.

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1. Introduction

The evaluation of scientific knowledge production has become one of the most influential forces shaping contemporary academia. Across disciplines, research is increasingly judged, funded, and legitimized through bibliometric indicators such as publication counts, citation impact, journal rankings, and international collaboration patterns. These indicators are not merely technical tools; they represent deeply embedded institutional logics that define what counts as valuable knowledge, who qualifies as a productive scholar, and which disciplines are recognized as scientifically legitimate. The foundations of this system were laid in the second half of the twentieth century through the work of organizations such as the National Science Foundation and the Institute for Scientific Information, as well as by pioneering bibliometricians such as Moed, Van Raan, and Okubo (Moed, 1989; Moed et al., 1983; National Science Foundation, 1972; National Science Board, 1989; Miquel and Okubo, 1994).

Within this global system of research evaluation, health and rehabilitation disciplines have occupied an ambiguous position. While medicine, biology, and psychology have long been integrated into citation indexed journals and international research networks, applied professions such as occupational therapy have historically been more rooted in national practice communities, professional magazines, and regionally oriented journals. This has produced a tension between professional relevance and scientific visibility that continues to shape the evolution of occupational therapy research (Ziviani et al., 1984; Reed, 1988; Roberts, 1992; Potter, 2010; Rodger et al., 2007).

Occupational therapy is fundamentally concerned with enabling individuals to participate in meaningful activities that support health, well being, and social inclusion. As Wilcock (2002) emphasized, occupation is not simply a set of tasks but a foundational determinant of human health. Yet translating this holistic and context sensitive philosophy into the standardized formats required by high impact scientific journals has been an ongoing challenge. This challenge is reflected in the bibliometric structure of the field, including the limited number of journals, their relatively low impact factors, and their uneven coverage in major indexing databases such as Web of Science, Scopus, and Google Scholar (Meho and Yang, 2007; Reed, 1988; Roberts, 1992).

At the same time, occupational therapy has undergone a remarkable transformation over the past four decades. The field has expanded its theoretical foundations, adopted rigorous quantitative and qualitative research methods, and developed a growing cadre of doctoral trained scholars (Pages and Persch, 2016; Scott et al., 2013). Journals have become more selective, international, and research oriented, and funding agencies increasingly expect occupational therapy researchers to demonstrate measurable impact through citation metrics and policy relevance (Sainty, 2013; Rodger et al., 2007).

Despite this progress, there remains a significant gap in our understanding of how occupational therapy fits into the broader structure of global science. Existing studies have examined journal coverage, publication trends, and citation patterns within the field, but they have rarely been integrated with the theoretical frameworks of scientometrics and international collaboration developed by scholars such as Moed and Okubo. This has resulted in a fragmented literature in which occupational therapy is analyzed in isolation from the larger dynamics of knowledge production and evaluation.

The purpose of this article is to bridge that gap by developing an integrated bibliometric framework that situates occupational therapy within the global scientific system. Drawing exclusively from the references provided, this study synthesizes theories of research performance measurement, database coverage, journal ecology, and international collaboration with empirical studies of occupational therapy literature. In doing so, it seeks to answer three fundamental questions. First, how is occupational therapy research structured and evaluated within the international bibliometric system. Second, how do journal visibility and database coverage shape the perceived quality and impact of occupational therapy scholarship. Third, how does international collaboration influence the development and recognition of the field.

By addressing these questions, this article contributes to both scientometric theory and occupational therapy scholarship. For bibliometrics, it offers a case study of how

a professional health discipline navigates the pressures of citation based evaluation. For occupational therapy, it provides a strategic analysis of how research practices, journal policies, and collaboration networks can be aligned to enhance scientific legitimacy and social impact.

2. Methodology

The methodological foundation of this study is qualitative and conceptual rather than statistical. This approach is consistent with the nature of the available data, which consists of theoretical works, policy documents, and bibliographic analyses rather than raw citation datasets. The objective is not to calculate new metrics but to construct a coherent analytical framework that integrates multiple strands of existing knowledge.

The primary sources include three major categories of literature. The first category consists of foundational bibliometric and scientometric works, including those by Moed (1989), Moed et al. (1983), Miquel and Okubo (1994), Thomson Reuters (2008), and the National Science Foundation and National Science Board (1972, 1989). These texts provide the conceptual tools for understanding how research performance, citation impact, and international collaboration are measured and interpreted.

The second category consists of occupational therapy journal and literature mapping studies, including those by Ziviani et al. (1984), Reed (1988), Roberts (1992), Mountain (1997), Potter (2010), Pearl et al. (2014), and Rodger et al. (2007). These studies offer detailed insights into the structure, content, and evolution of occupational therapy scholarship.

The third category includes policy and professional development sources such as Wilcock (2002), Scott et al. (2013), Sainty (2013), Pages and Persch (2016), and Patterson (2010), which contextualize research production within the broader institutional and historical development of the profession.

The analytical procedure involved several stages. First, the bibliometric theories were examined to identify key concepts such as citation indicators, database coverage, journal hierarchies, and international collaboration links (Moed, 1989; Miquel and Okubo, 1994; Thomson Reuters, 2008). Second, the occupational therapy literature was analyzed to identify patterns in journal development, publication practices, and research themes (Ziviani et al., 1984; Potter, 2010; Pearl et al., 2014). Third, these two bodies of literature were systematically compared to identify points of convergence and divergence.

For example, Okubo and Miquel's link indicator model of international collaboration was used to interpret the relatively national orientation of many occupational therapy journals and the gradual emergence of transnational authorship networks. Similarly, Moed's work on citation based performance evaluation was applied to understand how occupational therapy journals are positioned within citation databases and how this affects their perceived impact.

Throughout the analysis, particular attention was paid to the issue of database coverage, drawing on Meho and Yang (2007), Reed (1988), and Roberts (1992). This allowed for a critical examination of how different indexing services construct different versions of scholarly reality.

The methodology is therefore best described as integrative and interpretive. It does not attempt to produce new numerical indicators but instead seeks to deepen understanding of how existing indicators function within a specific disciplinary context.

3. Results

The results of this integrated bibliometric analysis reveal several interrelated patterns that characterize the structure and evolution of occupational therapy scholarship within the global scientific system.

One of the most significant findings concerns the position of occupational therapy journals within the broader journal hierarchy. Early studies by Ziviani et al. (1984) and Reed (1988) demonstrated that occupational therapy literature was dispersed across a wide range of journals, many of which were not indexed in major biomedical or social science databases. This dispersion reflected the interdisciplinary nature of the field, drawing on psychology, medicine, education, and social science, but it also limited the visibility and citation impact of occupational therapy research.

Roberts (1992) confirmed this problem by comparing the coverage of occupational therapy journals across four bibliographic information services. He found substantial discrepancies in which journals were indexed and how comprehensively their contents were represented. This meant that an occupational therapy article might be highly visible in one database and almost invisible in another, creating an uneven landscape of scholarly recognition.

Mountain (1997) and Potter (2010) showed that over time, the core set of occupational therapy journals became more clearly defined and more consistently indexed. Potter's

update of the literature mapping demonstrated that journals such as the American Journal of Occupational Therapy and the British Journal of Occupational Therapy had become central nodes in the field's knowledge network. However, even these leading journals lagged behind major medical and psychological journals in terms of impact factors and citation counts.

This pattern can be interpreted through the lens of Moed's theory of citation based performance measurement. According to Moed (1989) and Moed et al. (1983), citation indicators reflect not only the quality of research but also the size, maturity, and communication practices of a field. Occupational therapy, being a relatively small and practice oriented discipline, naturally generates fewer citations than large basic science fields. This structural reality means that applying uniform bibliometric thresholds across disciplines can disadvantage occupational therapy scholars.

Meho and Yang (2007) further complicate this picture by showing that citation counts vary dramatically across databases. Their comparison of Web of Science, Scopus, and Google Scholar revealed that Google Scholar consistently produced higher citation counts, especially for disciplines with strong book and conference traditions. For occupational therapy, which has historically relied on professional publications and monographs, this suggests that traditional citation indexes may significantly underestimate scholarly impact.

Another important result concerns the thematic and methodological evolution of occupational therapy research. Pearl et al. (2014) conducted a content analysis of five occupational therapy journals from 2006 to 2010 and found a growing proportion of quantitative studies, more sophisticated statistical analyses, and increased attention to outcome measurement. This shift aligns with the broader trends in health research emphasized by the National Science Foundation and the National Science Board (1989), which have promoted evidence based practice and accountability.

Rodger et al. (2007) captured authors' perspectives on journal quality and impact, revealing that occupational therapy researchers are increasingly aware of the importance of publishing in journals with higher visibility and citation impact. This awareness reflects the internalization of bibliometric evaluation norms described by Thomson Reuters (2008), in which scholars strategically choose publication venues to maximize their professional standing.

International collaboration represents a third major pattern. Miquel and Okubo (1994) showed that international scientific collaboration can be measured through link indicators that capture coauthorship and cross border citation flows. Applying this framework to occupational therapy suggests that the field has historically been dominated by national research communities, particularly in countries such as the United States, the United Kingdom, and Australia. However, studies such as Rodger et al. (2007) and Sainty (2013) indicate a growing internationalization of authorship and readership.

The expansion of doctoral programs and research networks described by Pages and Persch (2016) and Scott et al. (2013) further supports this trend. As more occupational therapists pursue doctoral training and engage in international conferences and collaborations, the field's bibliometric profile is gradually becoming more global.

Finally, the results highlight the role of policy and funding frameworks in shaping research output. The Frascati Manual of the OECD (2002) defines research and development in ways that prioritize systematic investigation and innovation. As occupational therapy aligns its research agenda with these definitions, it becomes more eligible for competitive funding and more integrated into national and international science indicators.

4. Discussion

The findings of this study have profound implications for how occupational therapy scholarship is understood, evaluated, and developed. At the most fundamental level, they demonstrate that bibliometric indicators are not neutral reflections of scholarly quality but are deeply shaped by disciplinary structures, database practices, and institutional incentives.

Moed (1989) emphasized that citation indicators must be interpreted within their proper context. For occupational therapy, this context includes a strong tradition of practice based knowledge, a relatively small research community, and a history of publication in professional rather than purely academic outlets. When these factors are ignored, bibliometric evaluations risk systematically undervaluing the field.

The database coverage issues identified by Reed (1988), Roberts (1992), and Meho and Yang (2007) further illustrate how the infrastructure of information systems shapes scholarly reputation. If key occupational therapy journals are not indexed or are poorly represented, their articles will generate fewer citations, which in turn affects impact

factors, university rankings, and funding decisions. This creates a feedback loop in which limited visibility leads to lower perceived quality, which then discourages authors from submitting their best work to these journals.

International collaboration offers a potential pathway out of this cycle. Miquel and Okubo (1994) showed that international links increase the visibility and citation impact of research. For occupational therapy, expanding cross national research networks can help integrate the field into broader scientific conversations, attract diverse perspectives, and increase citation flows. However, this requires overcoming barriers such as language, funding disparities, and differing professional standards.

The increasing emphasis on quantitative methods and outcome measurement described by Pearl et al. (2014) and Sainty (2013) reflects another strategic adaptation. By producing research that aligns with the evidence based paradigms of medicine and public health, occupational therapy can more effectively compete for space in high impact journals and policy forums. Yet this also raises concerns about preserving the holistic and client centered philosophy that defines the profession (Wilcock, 2002).

Doctoral education and curriculum design play a crucial role in navigating these tensions. Scott et al. (2013) argued that fostering scholarship productivity requires embedding research skills, publication strategies, and bibliometric literacy into occupational therapy education. Pages and Persch (2016) similarly emphasized the importance of preparing new scholars to engage with the academic publishing system.

There are also important limitations to this analysis. Because it is based on secondary literature rather than original citation data, it cannot provide precise quantitative measures of change over time. Moreover, the references themselves are concentrated in English speaking countries, which may obscure developments in other regions. This reflects the broader problem of language bias in bibliometric databases noted by Moed (1989) and Meho and Yang (2007).

Future research could build on this framework by conducting empirical citation network analyses of occupational therapy journals, mapping international collaboration patterns, and comparing the field's bibliometric profile with those of related disciplines such as physical therapy or speech language pathology. Such studies would further illuminate the structural position of occupational therapy within global science.

5. Conclusion

This article has demonstrated that occupational therapy scholarship can only be fully understood when it is situated within the broader system of bibliometric evaluation, journal ecology, and international collaboration. Drawing on the theoretical foundations of scientometrics and the empirical literature on occupational therapy journals, it has shown that the field occupies a dynamic and evolving position in the global knowledge economy.

While occupational therapy has historically been marginalized in citation based rankings due to limited database coverage and a strong practice orientation, it is increasingly adopting the research practices, collaboration strategies, and publication norms that characterize mature scientific disciplines. This transition offers both opportunities and challenges. It can enhance the visibility, credibility, and policy impact of occupational therapy research, but it also requires careful attention to the values and purposes that define the profession.

Ultimately, bibliometric indicators should be used not as blunt instruments of evaluation but as tools for strategic reflection. For occupational therapy scholars, editors, and educators, understanding how these indicators work is essential for shaping a future in which the field's contributions to health and society are both scientifically recognized and socially meaningful.

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