

A Quantitative Analysis of Diamond Open Access Publishing in Italy

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Abstract

Diamond Open Access (DOA) is a non-commercial model of scholarly publishing that removes financial barriers for authors and readers. While international studies have outlined the global uptake of DOA, this paper investigates the presence and characteristics of the DOA landscape in Italy. We conducted a quantitative analysis on the 168 Italian journals classified as Diamond by EZB, and we studied their publishing volume, disciplinary distribution and citation impact by integrating information from the following open resources: DOAJ, OpenAIRE, ROAD, SCImago Journal Rank, and the ANVUR classification used in the Italian Research Assessment Framework (VQR). Key findings include the significant growth of DOA journals, particularly in the social sciences and humanities. The study also highlights challenges such as the need for better indexing and comprehensive data to fully capture the DOA landscape.

Keywords

Diamond Open Access, Open Science, Open Research Information, Open Science, Scholarly Knowledge Graphs,

1. Introduction

Scholarly communication has undergone a profound transformation since the early 2000s, challenging the traditional subscription-based publishing model—a system rooted in the limitations of print and characterised by the transfer of copyright to publishers. Although early bottom-up initiatives leveraged the nascent capabilities of digital distribution and the Internet [1] to offer promising alternatives, the structural issues persisted. Specifically, the escalating expenditure on journal subscriptions sparked the “serial pricing crisis”, limiting access for academic libraries [2]. This scenario catalysed the emergence of the Open Access (OA) movement, formalised in landmark declarations such as Budapest [3], Bethesda [4], and Berlin [5].

The OA paradigm, often described as an “access revolution” aimed at eliminating reading costs, led to a radical transformation of the economic model. Commercial publishers quickly incorporated OA through strategies like transformative agreements and, crucially, Article Processing Charges (APCs) [6]. However, the significant and sustained rise in APC costs has created a new financial paywall [7], shifting the financial burden from libraries to authors, often exacerbating the unsustainability of expenditure and perpetuating significant inequalities among institutions and researchers. The emergence of the Hybrid model, which combines APCs and subscriptions (potentially leading to double-dipping), further raised concerns about the system’s sustainability and fairness [8].

Against this backdrop of persistent inequity and financial burden, there is an emerging need for a publishing model that moves beyond dependence on high access costs, whether for readers or authors. The Diamond Open Access (DOA) model is gaining increasing attention as a fair and sustainable

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alternative. DOA is a scholarly publishing model that ensures free access to research for both readers and authors, eliminating financial barriers derived from APCs or journal subscriptions and promoting equitable and inclusive dissemination of knowledge. In recent years, initiatives at both research and policy levels have sought to foster a more collaborative and equitable scholarly ecosystem, and specifically to observe, understand, and promote the DOA model [9, 10, 11, 12, 13, 14, 15]. In Italy, this commitment was reinforced by the National Plan for Open Science (PNSA) [16], which, while not explicitly mentioning the DOA model, emphasises the importance of adopting non-commercial publishing systems. More recently, the Italian Diamond Capacity Hub was launched [17] to strengthen DOA practices, assess compliance with standards, and develop strategies for sustainable implementation within the European framework.

To assess the uptake of DOA and inform targeted policies, an in-depth analysis within a specific national context is essential, as it offers granular insights that can strengthen local contributions to broader initiatives such as the European Diamond Capacity Hub (EDCH). This paper briefly introduces the results presented in [18], which has been resubmitted after minor revisions to the journal *Quantitative Science Studies* (QSS). The study aims to analyse the uptake and characteristics of the DOA model in Italy, using quantitative indicators on DOA journals and their published articles. The research questions seek to establish: (RQ1) the presence and uptake of Italian DOA journals; (RQ2) their publication volume; (RQ3) their citation impact and international standing; and (RQ4) their technical and legal characteristics, with a focus on publisher types, licences, and preservation policies.

2. Related works

Research on scholarly communication models has consistently positioned DOA as a distinct alternative to OA. Early studies primarily focused on the economic and ethical sustainability of OA [19, 20, 21, 22, 11]. Subsequent research has sought to map the structural and operational features of DOA. The seminal DOA Journals Study [9, 10], conducted during 2020–2021, found that DOA journals are approximately 29,000, predominantly present in Europe and Latin America, and focused on the Humanities and Social Sciences. This paper also highlighted that the majority of DOA journals are small-scale, affiliated with research institutions, heavily rely on volunteer labour, and face ongoing challenges related to technical sustainability (e.g., relying on OJS), adequate indexation, and modest operational budgets.

The DIAMAS project survey (2023) [23], reinforced these findings within the European Research Area, noting high editorial standards but persistent issues with small scale and reliance on voluntary contributions. The survey identified 455 Italian journals without APCs in DOAJ, though our study's more restrictive definition (APC-free plus community-owned) yielded a lower number, highlighting the methodological complexity in accurately defining the DOA landscape.

Other studies have provided valuable comparative and country-specific insights that consistently confirmed the small size and strong disciplinary focus on SSH within national DOA ecosystems [24, 25, 26, 27]. These studies also underscored methodological challenges in accurately identifying genuinely national DOA journals due to the limitations of geographic metadata.

To the best of our knowledge, a comprehensive quantitative analysis specifically focused on the Italian DOA landscape is currently lacking. Building on these previous works, our study adopts a more nuanced approach, drawing upon indicators explored in broader studies like DIAMAS, to provide a detailed, multifaceted characterisation of the Italian DOA ecosystem that goes beyond mere APC-free counting.

3. Data and methods

This study aims to understand the presence and impact of DOA in Italy, using a set of quantitative indicators about DOA journals and their published articles. We analysed the landscape of DOA publishing in Italy through a set of quantitative metrics spanning multiple dimensions. These include presence, disciplinary coverage, institutional involvement, international reach, publication volume, scholarly

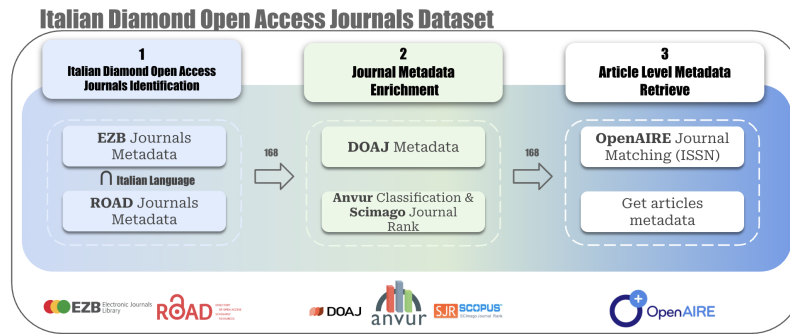


Figure 1: Dataset Building Pipeline

impact, and technological infrastructure. To calculate such metrics, a rich and informative dataset is required. To build this dataset, we combined data from multiple sources, as detailed in Figure 1, which outlines the pipeline used to generate the dataset.

The list of DOA journals is extracted from the Electronic Journals Library (EZB) and intersected with ROAD to get the publisher’s country and journal disciplines, obtaining a dataset of 168 journals referring to Italian publishers. The dataset was enriched to include: *other organisation* (when the journal is managed by multiple organisations), *journal licensing*, *preservation services*, and whether *authors retain copyright without restriction* obtained from DOAJ. The dataset was manually annotated with the type of publisher based on the following categories: institutional, government, company, facility, non-profit, and for-profit. The categories “company” and “for-profit” are included because DOA journals may be managed by a non-commercial entity using services of a commercial publisher. An example is the journal with ISSN 2282-2054, which is managed by the Academy of Emergency Medicine and Care, while being technically supported by the services of PAGEPress Publications.

To perform bibliometric analyses and fully address **RQ1** and **RQ2**, we included article-level metadata from the OpenAIRE Graph [28]. For the 168 Italian DOA Journals indexed in OpenAIRE, we obtained a set of 57.5K articles published from 2000 to 2024. For each article the persistent identifiers (e.g., DOI), author affiliations and countries, publication date, and citation count information was collected. Data from ANVUR (available for 128 journals) and from SCImago (available for 81 journals) are added to address **RQ3**. **RQ4** was addressed by leveraging DOAJ and EZB data.

4. Results

In this section, we summarise the results of our analysis following the order of the suggested RQs.

RQ1: What is the presence and uptake of Italian DOA journals? Among the 168 DOA journals in Italy (including quiescent or discontinued ones), 118 have published at least one article in 2024. This number represents a 12-fold increase in the observed period (i.e., 14 DOA journals in 2000), highlighting a substantial growth. The number of Italian DOA journals has been on a rising trend from the early 2000s until the peak of 2018, with a slight decline in recent years, which may be linked to challenges like sustainability and shifts in funding models.

Both the disciplinary distribution (Figure 2a) and the diachronic analysis (Figure 2b) show a strong concentration of Italian DOA journals in the *Social Sciences* and in the *Humanities and the Arts*, where the number of journals has grown steadily over time. In contrast, *Engineering and Technology* remains the least represented field and shows only modest growth, indicating a more limited shift toward the DOA model. This limited uptake in *Engineering and Technology* could be attributed to the field’s stronger alignment with commercial and hybrid publishing models, where funding mechanisms (e.g., from industry or grant agencies) may more readily support APC-based journals.

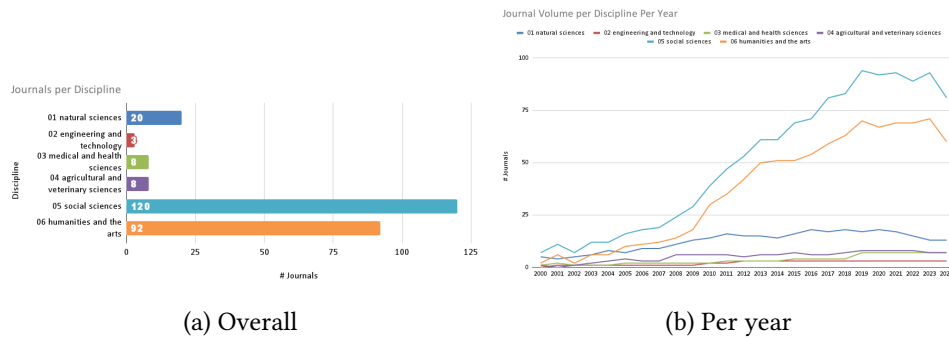


Figure 2: Distribution of Italian DOA journals by discipline.

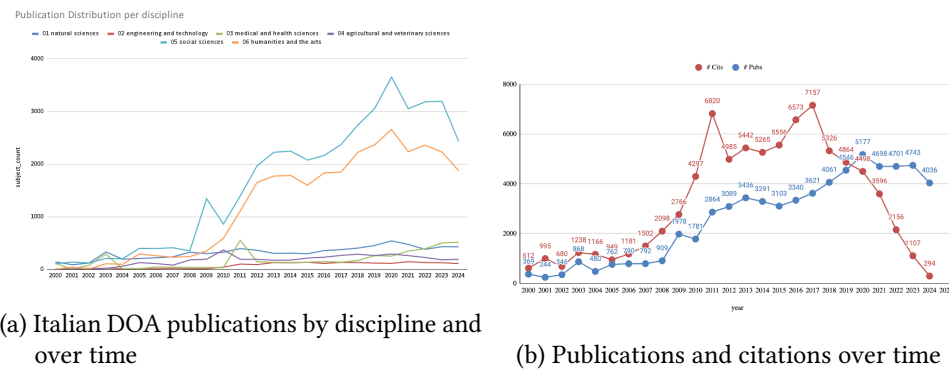


Figure 3: Diachronic view of the number of publications by discipline and overall citations.

RQ2: What is the publication volume of Italian DOA journals? Italian DOA journals are predominantly small-scale in terms of publishing volume. Most of these journals publish on average between 10 and 24 articles per year. Only a few exceed 100 annual publications, and no mega journals were identified. However, in the past two years (2022–2024), they appear to be expanding in size, with most journals publishing between 25 and 49 articles per year. The metrics used to assess this aspect is the average number of articles published per year by each journal over a defined time range. This approach allows for the classification of journals based on their typical publishing output, smoothing out year-to-year fluctuations, therefore providing a more stable basis for comparison.

The share of papers published in Italian DOA journals, compared with all Italian publications indexed in OpenAIRE, shows a general upward trend. This number increased from 3.8% in 2000 to a peak of 17.5% in 2012. With an overall share of 9.39% of DOA articles, the Italian landscape is comparable to the estimation provided in [9] (i.e., 8–9%).

In terms of publication volume by discipline, *Social sciences*, along with *Humanities and the Arts*, account for the highest number of publications in DOA journals, as reported in Figure 3a.

RQ3: How are articles in Italian DOA journals being cited, and how are the journals placed internationally in citation-based rankings? While the overall volume of publications is increasing, citations currently appear to be declining: a trend that could be influenced by the accumulation of citation advantage over time (Figure 3b).

To evaluate the national and international visibility and relevance of Italian DOA journals, we assessed their ranking in the ANVUR Classification and in the SCImago Journal & Country Rank (SJR), shown in Figure 4a and Figure 4b, respectively. 128 journals have been recognised as scientific journals (S-Class): 72 of them as top-ranked (A-Class) in at least one disciplinary area. Figure 4a shows the S-Class/A-Class classification across 6 disciplines, peer-reviewed by ANVUR experts. There is a clear concentration in the *Humanities and the Arts* and *Social Sciences*, particularly in areas 10 (Classical Studies, Philology,

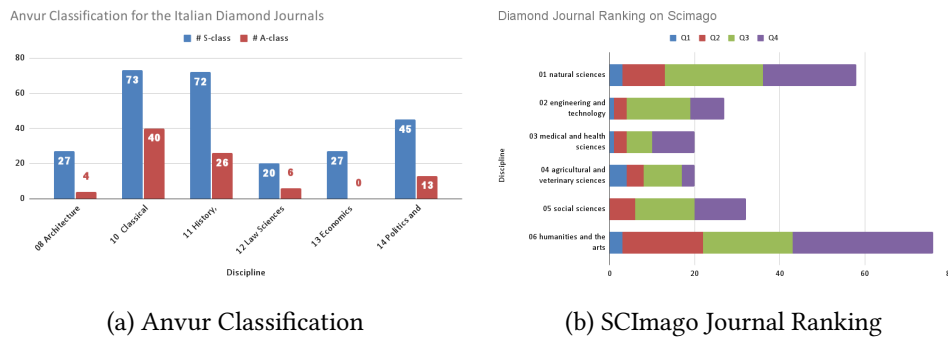


Figure 4: National & International DOA Journal Evaluations

Literature, and Art History) and 11 (History, Philosophy, Education, and Psychology). Area 10 also shows the highest number of A-class journals (40), followed by Area 11 (26) and Area 14 (13).

SCImago indexes 81 DOA journals; Figure 4b presents the quartile distribution across six broad disciplinary areas. 12 of them are in the top quartile (Q1), demonstrating that high-quality and high-impact journals can coexist with the DOA model.

RQ4: What are the technical and legal characteristics of Italian DOA journals, with a focus on publisher types, ORCID integration, author licence retention, licence types, and preservation policies? 57.7% of the publishers are institutional, 26.2% are managed by non-profit organisations, and the remaining 11.9% is distributed among companies, government bodies, research facilities, and for-profit publishers. For 4.2% of the publishers, we were unable to determine the type of organisation. In all the cases where a publisher is a company or a for-profit organisation, the journal is also co-managed by a non-commercial organisation, thus qualifying as DOA journal.

The integration with ORCID is not very widespread (26.7%), thus limiting the potential for author disambiguation, tracking, and interoperability.

The vast majority of journals (81.8%) applies policies supporting author copyright retention. However, a significant share (17.01%) still applies some form of limitation, potentially limiting the free sharing and reuse of authors' works. The licences adopted by journals are: CC-BY (42.9%), CC-BY-NC-ND (20.3%), non-standard licence (4.5%). While non-standard licences do not inherently prevent reuse, the absence of clear and complete information makes it difficult to determine whether reuse is permitted.

Information on the adoption of digital preservation services is shared by 35% of journals, with a clear preference for community-driven and open infrastructures, such as Public Knowledge Project Preservation Network (PKP PN) [29], and Lots of Copies Keep Stuff Safe (LOCKSS) [30]. This limited information underscores the need for richer, more consistent metadata and for stronger technological solutions to ensure sustainable, long-term management of DOA journals.

5. Conclusions

This study highlights key challenges and opportunities for DOA in Italy. Identifying DOA journals remains difficult due to the absence of an authoritative, comprehensive list. An additional issue is the risk of hidden or non-transparent fees, particularly when commercial service providers are involved.

Open-source, community-driven platforms (e.g., OJS, Janeway, Episciences.org) can help reduce costs and support sustainable non-profit models. Continuous monitoring is needed to track changes in journal funding models, copyright restrictions, and licensing practices. Policymakers should reinforce DOA through funding and by recognising it within research assessment systems. Encouragingly, many Italian DOA journals are already acknowledged in national classifications and indexing services, aligning with positive visibility results from the DIAMAS survey.

Data Availability Statement

The dataset supporting the findings of this study is openly available on Zenodo, without any restrictions on access or reuse [31]. The code used for this paper is available on GitHub¹ and Zenodo [32].

Declaration on Generative AI

During the preparation of this work, the author(s) used ChatGPT in order to: Grammar and spelling check, Paraphrase and reword. After using this tool/service, the author(s) reviewed and edited the content as needed and take(s) full responsibility for the publication's content.

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