JungWon Yoon, Abebe Rorissa, Nayon Kim and EunKyung Chung*

Characteristics of OA Diamond Journal Publishing in Non-English-Speaking Countries

https://doi.org/10.1515/libri-2024-0026
Received February 29, 2024; accepted October 10, 2024;
published online February 21, 2025

Abstract: Although global scholarly communication should include regional diversity it has been centered on English-language journals published in Western countries that wield strong economic power. Intending to reduce epistemological disparity, this study examined the characteristics of OA diamond journals (OADJ) published in non-English speaking countries (NESC). This study analyzed the OA Diamond Journals Study Dataset which cOAlition S commissioned. From the dataset 1,496 journals from 84 countries were assessed in terms of the official language of the journal's publication country, the regions of the publication country, the country's GDP, and the journal's language. More than 80 % of OADJ were published in NESC and European countries, with Latin America and high-income countries as the main regions. OADJ in Latin America tended to be registered in Latin American index systems and considered international readers less important. Among OADJ published in Africa, Asia, and Eastern Europe, and those published in English, the intention of moving away from OADJ was stronger and journal impact and international readership were highly regarded. Based on the findings of this study the potential of OADJ was discussed, as were suggestions for enhancing the OADJ environment.

Keywords: scholarly communication; scholarly journals; regional journals; open access diamond journals; knowledge disparity

***Corresponding author: EunKyung Chung**, Department of Library and Information Science, Ewha Womans University, Ewha-POSCO Building (Social Sciences) #418, 52, Ewhayeodae-gil, Seodaemun-gu, Seoul 03760, South Korea, E-mail: echung@ewha.ac.kr. https://orcid.org/0000-0001-9896-8623

JungWon Yoon, Department of Library and Information Science, Jeonbuk National University, Jeonju-si, South Korea, E-mail: jyoon@jbnu.ac.kr. https://orcid.org/0000-0003-2579-7688

Abebe Rorissa, School of Information Sciences, University of Tennessee, Knoxville, TN, USA, E-mail: arorissa@utk.edu. https://orcid.org/0000-0002-5300-617X

Nayon Kim, Department of Library and Information Science, Ewha Womans University, Seoul, South Korea, E-mail: nykim105@gmail.com. https://orcid.org/0000-0003-1993-7322

1 Introduction

Given the rapid growth of global connectivity regional issues often impact worldwide, either directly or indirectly; as such, it has become more vital to include regional research in global scholarly communication (Khelifa, Amano, and Nuñez 2021). For instance, recent threats to humanity, such as the COVID-19 outbreaks and climate change-related natural disasters, have emphasized the importance of global scholarly communication (Márquez and Porras 2020; UNESCO 2021). Although international scholarly communication should embrace unique and valuable knowledge from geographically diverse areas it nonetheless tends to be centered on research conducted in Western regions with strong economic power (Ford and Alemneh 2022; Sin 2011). In addition, English, which is considered an official academic language, dominates international scholarly journals (Márquez and Porras 2020; O'Neil 2018; Steigerwald et al. 2022). In contrast, regional journals, particularly those from non-English speaking countries (NESC), tend to have lower visibility in international academic communication systems and are thus marginalized (Yoon, Kim, and Chung 2023). Although steady reductions in such disparities have been observed (O'Neil 2018), a dearth of "equity, diversity, and inclusion in science" (Khelifa, Amano, and Nuñez 2021, 109) is still of concern in academia.

One of the main barriers to the global dissemination of regional research is language but recently machine translation techniques have been used to attempt to overcome such impediments (Amano et al. 2021a; Angulo et al. 2021; Steigerwald et al. 2022). Open access (OA) can also foster equitable access to and the sharing of scholarly knowledge (Paquet, van Bellen, and Larivière 2022; UNESCO 2021), primarily by facilitating the international dissemination of local journals. Compared to subscription-based journals OA journals, by nature, provide universal accessibility to scholarly articles as well as readership and citations (Pearce 2022). However, Demeter and Istratti (2020) and Tennant et al. (2019) raise an important issue, namely that the OA model—in which authors pay an Article Processing Charge (APC)—can expand epistemological disparities by disadvantaging under-resourced researchers, women (Larivière et al. 2013), scholars in the social sciences and humanities and those from middle- and lower-income

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nations, and early career researchers (Cole, Reichmann, and Ross-Hellauer 2023). In this context, OADJs (also called OA platinum journals), which publish manuscripts without APC, have advantages. For example, OADJ can alleviate the burden on academics with insufficient research funds for APC and prevent predatory journal practices that misuse OA models to pursue profits only. Dalton, Tenopir, and Björk (2020) argue that predatory journals undermine OA journals' credibility. According to Pearce (2022), the increase in the number of OADJ has been faster than that of scholarly journals or OA journals; furthermore, a large-scale survey of OADJ (Bosman, Frantsvåg, and Kramer 2021) reports that the ratio of OADJ in non-English-speaking countries (NESC) was higher than their counterparts.

Within this context this research aims to examine the characteristics of OADJ published in NESC to provide evidence for OADJ's potential to improve the international dissemination of scholarly journals published in NESC. The following research questions guide this study:

- RQ1: How different are OA diamond journals' characteristics published in non-English-speaking countries from those published in English-speaking countries?
- RQ2: What are the characteristics of OA diamond journals published in non-English-speaking countries regarding the region of publication countries?
- RQ3: What are the characteristics of OA diamond journals published in non-English-speaking countries regarding the GDP of publication countries?
- RQ4: What are the characteristics of OA diamond journals published in non-English-speaking countries in terms of journal languages (English only, English and other languages, non-English journals)?

2 International Dissemination of NESC Journals

As a main effort related to the global dissemination of journals from NESC there are studies that measure the internationality of their country's journals and then make recommendations for enhancing their international visibility. These studies are interested in positioning their journals as "international" and having a worldwide reputation and visibility. Such research adopts various attributes for measuring international scope such as the global composition of authors and editorial boards, listings in international databases, language, access modes, and impact. For instance, Ren and Rousseau (2002) examine the international visibility of Chinese scientific journals covered by the Web of Science (WoS) regarding authors, editorial board composition, and citation trends. They find that even those articles published in internationally-indexed journals remain fairly local and thus have a minor global presence. Zainab (2008) evaluates the internationalization features of two Malaysian journals in terms of the ratio of foreign and Malaysian authors, the distribution of the national affiliation of editors and reviewers, and the geographical distribution of authors who cite the journals' articles. Shin, Choi, and Seo (2015) assess the internationality of Korean journals in terms of editorial board composition, publication of English language manuscripts, journal impact factor, online accessibility, accessibility of journal websites, journal title (inclusion of "international"), OA status, and indexation in international databases. They reported an insufficiency of these international factors in Korean journals and recommended reinforcing such attributes to increase their global visibility and reputation as international journals. Navas-Fernández, Abadal, and Rodrigues (2018) attempt to identify international characteristics by analyzing 445 Spanish journals indexed in WoS Core Collection and Scopus and find that subject areas, access modes, and publisher type are factors that determine the degree of internationality. They also report that articles with international collaborations had a higher impact and that of foreign authors accompanies the presence of foreign members on editorial committees.

Whereas the above studies were conducted internally (i.e., by NESC themselves) there are also efforts led by external or international agencies. Over the last decade international academic databases such as WoS Core Collection and Scopus have tried to increase the proportion of non-English journals by reflecting the growing number of excellent journals among NESC. Gazni and Ghaseminik (2016), using the citable documents (articles, reviews, and proceeding papers) indexed in WoS between 1991 and 2014, examine the trends of journal internationality. They find that older journals are more global than newer journals and that journals became increasingly international four to six years after being indexed by WoS. Moreover, they observed that journals produced by multinational publishers continue to be more global than those produced by national publishers. Within the context that WoS had added approximately 1,600 regional journals to their database to enhance the visibility of high-quality local studies, Purnell and Quevedo-Blasco (2013) evaluate the influence that adding Spanish regional journals to WoS has had on the publishing and citation trends of Spanish researchers. Regarding the internationalization of Scopus, as stated by Elsevier (2020, 19): "[T]tiles from all geographical regions are covered, including non-English titles [… and] approximately 22 % of

titles in Scopus are published in languages other than English, adding up to 40 local languages."

Among NESC, research has attempted to transition from non-English journals to English journals and examine the impact of these transitions. Dinkel et al. (2004) analyze the transition of two German-language journals to English-language ones. They find that the transition to English-language journals increased the number of foreign authors and domestic researchers' citations. Moreover, they note that switching to English as its publishing language would expand a journal's internationalization and worldwide dissemination. Using the WoS, Kirchik, Gingras, and Larivière (2012) examine the impact of translating Russian-language articles into English. For Russia's international scientific visibility they conclude that publishing original English-language articles in English-language journals is a more effective internationalization approach than translating local publications. They also suggest that if a country aims to enhance international awareness of its scientific work efforts should be made to promote publishing in reputable English-language journals.

With the development of machine translation technologies recent efforts have been made to adopt such technology for internationally disseminating research. Steigerwald et al. (2022) argue that machine translation techniques can indeed be a solution for attaining a greater degree of global dissemination and suggest that individuals and institutions could support multilingual scholarly communities. They conclude that machine translation can "transform a monolingual scientific hub into a more distributed, multilingual scientific network" (1). Amano et al. (2021a) analyze the contribution of non-English journal manuscripts to the field of global diversity conservation and report that incorporating non-English research expands the field's geographical coverage. Moreover, they urge the disciplines to incorporate non-English studies to overcome the lack of local evidence and face global challenges. They also discuss how machine translation can help to expand English-centered scholarly communication and propose methods for writing scholarly papers that can be machine-translated effectively.

As reviewed thus far, the international dissemination of NESC journals has received attention among researchers and machine translation has been used recently to overcome language barriers. In addition to language issues, accessibility to multilingual scholarly journals is another problem for multilingual scholarly communication. However, a dearth of studies examine OA journals published in NESC. Thus, in this context, this study examines the characteristics of OADJ published in NESC.

3 Research Methods

This study analyzed the OA Diamond Journals Study Dataset (Bosman, Frantsvåg, and Kramer 2021a), commissioned by cOAlition S.[1] OA Diamond Journals Study (OADJS) was a large-scale study on OADJ to provide "an analysis of the global landscape of OA diamond journals and platforms, identify their current funding models and their technical and organizational challenges" (Bosman, Frantsvåg, and Kramer 2021a, 6). The data was collected from June 2020 to February 2021 by a consortium of ten organizations who published two reports which are freely available in the *OA Diamond Journals Study, Part 1: Findings* (Bosman, Frantsvåg, and Kramer 2021a) and *OA Diamond Journals Study, Part 2: Recommendations* (Becerril et al. 2021).

The OADJS online survey, which was used to collect the OADJS dataset, was prepared in six languages (English, French, German, Italian, Spanish, and Portuguese) and disseminated to diamond journals identified in the Directory of Open Access Journals (DOAJ), 30 mailing lists, nine hosting platforms and aggregators, ten partners and community websites, and several personalities and social media accounts, to be shared worldwide. The dataset includes 1,619 journals (Bosman et al. 2021b). The current study utilized the OADJS dataset (and survey instrument) and two supplementary datasets, as described below. First, since the current study focuses on OA diamond journal publishing in NESC 123 journals whose publication countries were not identified were excluded from 1,619 journals for the current study. For this exclusion process Q14 of the OADJS survey instrument asking journal publication countries (OADJS Q14) was used and as a result 1,496 journals from 84 countries were thus selected for this current study. Second, in accordance with RQ1–RQ4, four variables should be identified: the official language of the journal's publication country (RQ1), the regions of the journal's publication country (RQ2), the GDP of the journal's publication country (RQ3), and the journal's language (RQ4). For RQ1, based on the journal publication countries (OADJS Q14), their official languages were identified using *Encyclopedia Britannica*'s website.[2] The OADJS dataset includes the regions of the journals' publication countries, which were processed from OADJS Q14, with these data used for RQ2. For RQ3, based on the journals' publication countries (OADJS Q14), GDP (2020 data)

1 cOAlition S is an initiative that aims to make full and immediate Open Access for research publications a reality (https://www.coalition-s.org/about/).

2 https://www.britannica.com/ (accessed June 15, 2022).

Table 1: Income levels of countries in the OADJS and World Bank datasets.

Income level	OADJS		World Bank	
	#	%	#	%
High income	35	41.67	79	36.41
Upper-middle income	24	28.57	55	25.35
Lower-middle income	20	23.81	55	25.35
Low income	3	3.57	27	12.44
N/A	2	2.38	1	0.46
Total	84	100.00	217	100.00

and income levels were identified using the World Bank's data.[3] Table 1 shows a comparison of the ratios of income levels between countries in the OADJS dataset and those in the World Bank's dataset. Overall, countries included in OADJS have a relatively higher income level than those recorded in the World Bank data. Because only three countries were in the low-income level category the current study combined lower-middle and low-income levels for further analysis. For RQ4 the journal's language was obtained from the OADJS dataset (OADJS Q18).

To examine the characteristics of journal publishing in the current study, the study's authors systematically selected the questions shown in Table 2. The OADJS survey instrument has a section entitled "Challenges" which includes a set of questions asking the participant to rate the level of challenges that a journal faces in six areas (peer-review management, editorial workflow, dissemination, indexation and visibility, skills and competencies, and sustainability and funding). Because the current study's authors regarded these six areas as important in sustaining and operating OADJ, they selected 18 questions related to them. Next, these questions were classified into three categories, as shown in Table 2. In addition, six questions demonstrating the general characteristics of journals were also selected.

Table 2: Selected questions from the OADJS survey instrument.

Category	Questions
General characteristics	– Main discipline covered by the journal (Q40) – Who owns the journal? (Q34) – Average number of published articles each year during the last three years (Q16) – Approximate share of authors from outside the country where the publisher is based (Q37)
Challenges[a]	– Peer-review management (Q82) – Dissemination (Q84) – Indexation and visibility (Q85) – Editorial workflow (Q83) – Skills and competencies (Q86) – Sustainability and funding (Q87)
Peer review, editorial, and competences	– How is the peer-review process managed by the journal?[b](Q48) – Does the journal have a trained copy editor? (Q49) – What is the size of paid staff for editing and operational work for the journal (in full-time equivalent (FTE))? (Q67) – For editorial management does the journal use an external publisher or publishing service to perform certain functions? This includes commercial or non-commercial services.[b] (Q24) – Do you use volunteers? (Q69)
Dissemination, indexation, visibility	– What is the type of dissemination host or platform? (Q58) – Is the journal readership more important in numbers outside of the journal's country? (Q80) – List of directories and indexes where the journal is indexed[b] (Q81)
Sustainability	– Are you thinking of moving away from this model to another? (Q76) – If you are reconsidering this model what are the reasons for doing so? [b] (Q77)

[a]Question asking about the challenges regarding each of the six areas (1 corresponds to low concern, 5 corresponds to very significant concern). [b] Multiple choice question

4 Findings

RQ1: How different are the characteristics of OA diamond journals published in non-English-speaking countries from those published in English-speaking countries?

In the dataset 264 (17.64 %) journals were published in countries using English as their official language (ESC), and 1,232 (82.4 %) were produced in countries using a language other than English as their official language (Non-English-Speaking Countries: NESC). General characteristics between these two categories of journals were compared (Table 3). Statistically significant differences were shown in all variables. In both categories approximately 90 % allowed reuse/remixing. Regarding journal disciplines the humanities and social sciences (HSS) comprise the largest fields in both ESC and NESC. However, the percentages for medicine and multidisciplinary topics were higher among ESC journals whereas those for science were higher

3 https://data.worldbank.org/indicator/NY.GDP.MKTP.CD (accessed June 15, 2022).

Table 3: A comparison of journal characteristics between English-speaking countries and non-English speaking-countries.

		ESC		NESC		X^2	*P*
		N	%	N	%		
Main discipline	HSS	122	46.2	608	49.4	38.977	0.000
	Science	17	6.4	213	17.3		
	Medicine	32	12.1	91	7.4		
	Multidisciplinary	57	21.6	145	11.8		
	Other	26	9.8	117	9.5		
	N/A	10	3.8	58	4.7		
	Total	264	100.0	1,232	100.0		
Journal ownership	Government agencies	4	1.5	75	6.1	121.038[a]	0.000
	Learned society	55	20.8	153	12.4		
	University	63	23.9	543	44.1		
	University press	6	2.3	64	5.2		
	Other research org.	11	4.2	111	9.0		
	Other non-profit publisher	27	10.2	50	4.1		
	For-profit publisher	3	1.1	10	0.8		
	Individual	32	12.1	36	2.9		
	Other	60	22.7	155	12.6		
	Unknown	2	0.8	6	0.5		
	N/A	1	0.4	29	2.4		
	Total	264	100.0	1,232	100.0		
Avg. # of published articles/yr. (Past 3 yrs)	0–4	14	5.3	29	2.4	33.522[a]	0.000
	5–9	45	17.0	102	8.3		
	10–24	99	37.5	504	40.9		
	25–49	52	19.7	317	25.7		
	50–99	22	8.3	118	9.6		
	100–499	10	3.8	25	2.0		
	≥ 500	1	0.4	0	0.0		
	N/A	21	8.0	137	11.1		
	Total	264	100.0	1,232	100.0		
Share (%) of authors from outside the publication country	0	21	8.0	82	6.7	41.300	0.000
	25	46	17.4	457	37.1		
	50	70	26.5	291	23.6		
	75	80	30.3	255	20.7		
	100	14	5.3	49	4.0		
	NA	33	12.5	98	8.0		
	Total	264	100.0	1,232	100.0		

[a]Fisher's exact test; others are chi-square tests. Statistically significant differences between journals in ESC and NESC were found for five of the challenges: Peer-review management (X^2 [5, n = 1,496] = 23.641, p = .000); Editorial workflow (X^2 [5, n = 1,496] = 26.310, p = .000); Dissemination (X^2 [5, n = 1,496] = 23.576, p = .000); Indexation and visibility (X^2 [5, n = 1,496] = 17.245, p = .004); and Skills and competencies (X^2 [5, n = 1,496] = 29.208, p = .000) (Figure 1). Journals in NESC had more pronounced concerns than those in ESC in these five areas. The percentages of pronounced concerns (i.e., the combination of ratings 4 and 5) among NESC journals were: Indexation and visibility (49.3 %), Peer-review management (41.2 %), Sustainability and funding (33.5 %), Dissemination (32.0 %), Editorial workflow (28.6 %), and Skills and competencies (20.2 %).

in NESC. As for journal ownership, for those in ESC, universities (23.9 %) and learned societies (20.8 %) were the two most common types of ownership, however, for journals in NESC, universities (44.1 %) were dominant, followed by learned societies (12.4 %). Overall, the number of published articles per year was higher among NESC journals. The share of authors from foreign countries was higher for the journals in ESC.

Questions related to these challenging areas were analyzed (Supplementary Table 1). Regarding the type of dissemination platform, institutional (37.2 %) and international (22.7 %) were popular for both ESC and NESC journals, however, international platforms were more prevalent among ESC while institutional platforms were more common among NESC [X^2 (6, n = 1,496) = 108.986, p = 0.000]. Regarding the question of whether they were thinking of moving away from the OA diamond model, 66.2 % indicated that they were not considering this; the ratio of those not intending to move away was higher among ESC journals [X^2 (4, n = 1,496) = 13.734, p = 0.008].

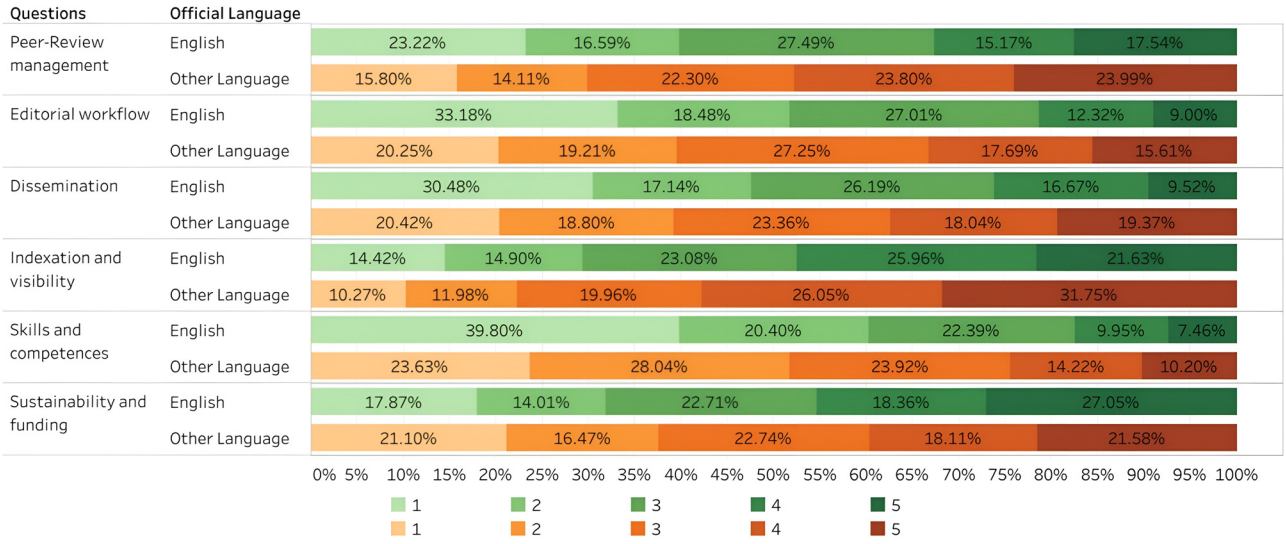


Figure 1: Challenges in six areas: a comparison of OA diamond journals in English-speaking countries and non-English speaking-countries (1: low concern; 5: significant concern).

The analysis of multiple responses is detailed in Supplementary Table 2. For both ESC and NESC journals, email (42.0 % of ESC, 55.3 % of NESC) and OJS (42.4 % of ESC, 46.4 % of NESC) were the most popular ways for processing peer reviews. As for the question on their use of external publishing services for editorial purposes, 45.7 % of ESC journals and 52.4 % of NESC journals reported not using them. DOAJ (71.8 % of ESC, 77.7 % of NESC) and Google Scholar (73.5 % of ESC, 69.8 % of NESC) were the most popular indexes in which the journals were registered and indexed. Among ESC journals the main financial supporters were libraries (31.7 %), research organizations/universities (24.3 %), and publishers (23.0 %). In contrast, among NESC journals the primary sources of support came from research organizations/universities (34.7 %), national/government funding agencies (23.8 %), and publishers (22.4 %). Among NESC journals, libraries and foundations/trusts provided noticeably lower support than they did for ESC journals. The main expenses and support provided for ESC journals were hosting (45.2 %), copyediting (44.3 %), and technical support (35.5 %). For NESC, however, the primary expenses were editing (43.1 %) and copyediting (33.0 %). Regarding reasons for reconsidering the OA diamond model, economic viability (57.7 % of ESC, 40.4 % of NESC) and long-term feasibility (43.6 % of ESC, 45.3 % of NESC) were mentioned the most.

RQ2: What are the characteristics of OA diamond journals published in non-English-speaking countries regarding the region of publication countries?

The regional distributions of NESC journals are as follows: Western Europe (47.4 %), Latin America (25.9 %), Eastern Europe (18.6 %), Asia (5.2 %), Middle East (1.9 %), and Africa (1.1 %). According to the Chi-square test results all variables of the general journal characteristics showed statistically significant differences (Table 4). Regarding disciplines, HSS was the most dominant in all regions but Western European journals comprised a higher percentage of HSS disciplines (57.4 %). Journals in Africa, Asia, and the Middle East contained higher percentages of articles in Science (23.1 %, 26.6 %, and 30.4 %, respectively) and Medicine (15.4 %, 18.8 %, 13.0 %, respectively); for Eastern Europe, the percentage was higher for Science (27.1 %). Regarding journal ownership universities are the dominant owners in all regions. In Latin America the percentage of universities owning journals was remarkably higher (70.8 %) than in other regions. Africa and Asia had relatively higher percentages of learned societies than their own journals (23.1 % and 21.9 %, respectively) while the Middle East showed relatively higher ownerships by other non-profit publishers and individuals (17.4 % for each). In the diversity of authorships category African journals had more international authors. However, journals in the Middle East, Latin America, and Asia had fewer international authors.

Additional questions related to these challenging areas were analyzed (Supplementary Table 3). Among NESC journals 63.1 % had a trained copyeditor, with Latin America having the highest percentage of journals with a trained copyeditor (74.9 %) and Asia having the lowest percentage (54.7 %) [p = 0.000, Fisher's Exact Test, FET]. Regarding the type of dissemination platform an institutional platform was more common among Latin American journals (56.4 %), with international and national platforms more prevalent for

Table 4: A comparison of OA diamond journal characteristics in non-English-speaking countries in terms of region.

		Africa		Asia		Europe (Eastern)		Europe (Western)		Latin America		Mid. East		X^2	P
		N	%	N	%	N	%	N	%	N	%	N	%		
Main discipline	HSS	5	38.5	24	37.5	97	42.4	335	57.4	137	42.9	10	43.5	88.137[a]	0.000
	Science	3	23.1	17	26.6	62	27.1	72	12.3	52	16.3	7	30.4		
	Medicine	2	15.4	12	18.8	22	9.6	22	3.8	30	9.4	3	13.0		
	Multidisciplinary	2	15.4	6	9.4	25	10.9	68	11.6	44	13.8	0	0.0		
	Other	0	0.0	2	3.1	12	5.2	65	11.1	37	11.6	1	4.3		
	N/A	1	7.7	3	4.7	11	4.8	22	3.8	19	6.0	2	8.7		
	Total	13	100.0	64	100.0	229	100.0	584	100.0	319	100.0	23	100.0		
Journal ownership	Government agencies	0	0.0	9	14.1	4	1.7	50	8.6	11	3.4	1	4.3	231.421[a]	0.000
	Learned society	3	23.1	14	21.9	21	9.2	93	15.9	20	6.3	2	8.7		
	University	4	30.8	22	34.4	80	34.9	205	35.1	226	70.8	6	26.1		
	University press	0	0.0	2	3.1	15	6.6	26	4.5	20	6.3	1	4.3		
	Other research org.	2	15.4	2	3.1	37	16.2	57	9.8	11	3.4	2	8.7		
	Other non-profit publisher	0	0.0	5	7.8	14	6.1	26	4.5	1	0.3	4	17.4		
	For-profit publisher	0	0.0	0	0.0	6	2.6	4	0.7	0	0.0	0	0.0		
	Individual	1	7.7	1	1.6	5	2.2	21	3.6	4	1.3	4	17.4		
	Other	3	23.1	6	9.4	40	17.5	87	14.9	17	5.3	2	8.7		
	Unknown	0	0.0	1	1.6	0	0.0	5	0.9	0	0.0	0	0.0		
	N/A	0	0.0	2	3.1	7	3.1	10	1.7	9	2.8	1	4.3		
	Total	13	100.0	64	100.0	229	100.0	584	100.0	319	100.0	23	100.0		
Avg. # of published articles/yr. (Past 3 yrs)	0–4	0	0.0	7	10.9	6	2.6	16	2.7	0	0.0	0	0.0	93.489[a]	0.000
	5–9	1	7.7	6	9.4	19	8.3	62	10.6	11	3.4	3	13.0		
	10–24	5	38.5	25	39.1	101	44.1	249	42.6	116	36.4	8	34.8		
	25–49	0	0.0	9	14.1	53	23.1	131	22.4	115	36.1	9	39.1		
	50–99	4	30.8	4	6.3	23	10.0	43	7.4	41	12.9	3	13.0		
	100–499	0	0.0	1	1.6	7	3.1	15	2.6	2	0.6	0	0.0		
	≥ 500	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0		
	N/A	3	23.1	12	18.8	20	8.7	68	11.6	34	10.7	0	0.0		
	Total	13	100.0	64	100.0	229	100.0	584	100.0	319	100.0	23	100.0		
Share of authors from outside the publication country	0	0	0.0	14	21.9	13	5.7	29	5.0	22	6.9	4	17.4	73.847[a]	0.000
	25	6	46.2	18	28.1	85	37.1	183	31.3	155	48.6	10	43.5		
	50	2	15.4	12	18.8	52	22.7	151	25.9	71	22.3	3	13.0		
	75	3	23.1	11	17.2	56	24.5	130	22.3	52	16.3	3	13.0		
	100	1	7.7	3	4.7	11	4.8	31	5.3	3	0.9	0	0.0		
	N/A	1	7.7	6	9.4	12	5.2	60	10.3	16	5.0	3	13.0		
	Total	13	100.0	64	100.0	229	100.0	584	100.0	319	100.0	23	100.0		

[a]Fisher's exact test; others are chi-square tests. Statistically significant differences among journals in six regions were found in six areas of challenges: Peer-review management [p = 0.037, Fisher's Exact Test], Editorial workflow [p = 0.036, Fisher's Exact Test], Dissemination [p = 0.008, Fisher's Exact Test], Indexation and visibility [p = 0.001, Fisher's Exact Test], Skills and competencies [p = 0.001, Fisher's Exact Test], and Sustainability and funding [p = 0.001, Fisher's Exact Test] (Figure 2). Among NESC journals those in Asian countries reported more concerns regarding peer-review management (51.5 %), editorial workflow (32.8 %), and skills and competencies (32.8 %). Journals in Latin America reported more concern in their editorial workflow (35.4 %), dissemination (40.1 %), and indexation and visibility (55.5 %). In Africa, journals reported greater concern for skills and competencies (30.8 %).

African and Middle Eastern journals [p = 0.000, Fisher's Exact Test, FET]. Thirty-two percent of NESC journals indicated that their international readership was important but this was noticeably lower for those in Latin America [p = 0.000, Fisher's Exact Test, FET]. Among NESC journals 64.5 % answered that they were not considering moving away from the OA diamond model, with the ratio that is thinking of doing so was much higher in Africa (23.1 %) [p = 0.000, Fisher's Exact Test, FET].

The analysis of multiple responses was reported in Supplementary Table 4. Regarding processing peer reviews using OJS was much more frequent among Latin American journals (74.8 %) and email was the preferred method in Africa (69.2 %) and Eastern Europe (61.9 %). Using publishers' systems was noticeable (30.0 %) for the Middle Eastern journals. Although DOAJ and Google Scholar were the most popular indexes among NESC journals some unique characteristics were found depending on the region. For

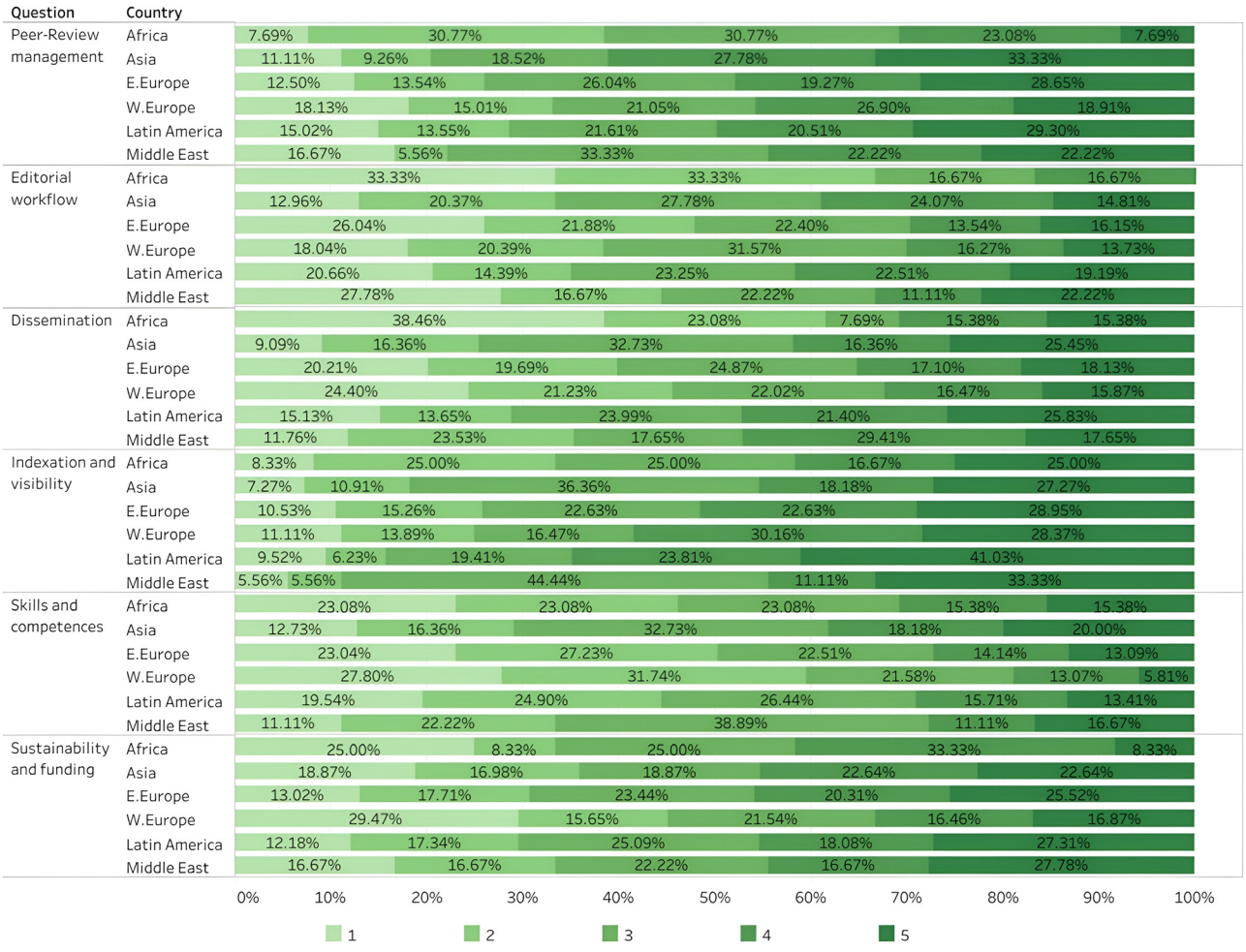


Figure 2: Challenges in six areas: comparison among OA diamond journals in six regions (1: low concern; 5: significant concern).

instance, DOAJ was the preferred database for over 90 % of journals in Africa and the Middle East whereas Google Scholar was listed for over 90 % of Asian journals. Furthermore, those from Asia, Eastern Europe, and the Middle East also had more listings in SCOPUS. Latin American journals were indexed in Latin American indexing systems such as the Latindex catalog, Redalyc, and Scielo. Moreover, the type of financial supporters varied depending on the region. In Africa and the Middle East there were higher percentages of journals supported by publishers. For Eastern Europe, publishers and national funding/government agencies were the predominant supporters while in Latin America and Western Europe financial support from research organizations/universities was more common. Regarding the rationales for reconsidering the OA diamond model, Asian and Eastern European journals considered journal impact factors (JIF) more significant while Asian and Latin American journals cited economic viability.

RQ3: What are the characteristics of OA diamond journals published in non-English-speaking countries regarding the GDP of publication countries?

Among NESC journals the distributions in terms of GDP of their respective regions were as follows: high-income countries (64.0 %), upper-middle-income countries (31.7 %), and lower-middle and lower-income countries (4.3 %; hereafter, only lower-income will be used to signify both categories). Thirteen journals were published in two countries for which the income levels were unavailable in the World Bank's data so those journals were excluded from the analysis. Statistically significant differences were found for all general characteristics among these three categories (Table 5). Regarding journal disciplines HSS was dominant, however, the percentages for HSS were relatively higher in high-income-country journals whereas the percentages for science were greater in upper-middle- and lower-income countries. The percentages for medicine were relatively

Table 5: A comparison of OA diamond journal characteristics in non-English-speaking countries in terms of GDP.

		High income		Upper-middle income		Lower-middle/ Lower income		X^2	P
		N	%	N	%	N	%		
Main discipline	HSS	415	53.2	167	43.3	23	43.3	22.263[a]	0.012
	Science	120	15.4	80	20.7	11	20.8		
	Medicine	43	5.5	38	9.8	7	13.2		
	Multidisciplinary	91	11.7	43	11.1	7	13.2		
	Other	75	9.6	39	10.1	2	3.8		
	N/A	36	4.6	19	4.9	3	5.7		
Total		780	100.0	386	100.0	53	100.0		
Journal ownership	Government agencies	59	7.6	12	3.1	4	7.5	110.809[a]	0.000
	Learned society	123	15.8	22	5.7	7	13.2		
	University	267	34.2	242	62.7	24	45.3		
	University press	38	4.9	23	6.0	2	3.8		
	Other research org.	88	11.3	21	5.4	1	1.9		
	Other non-profit publisher	37	4.7	12	3.1	1	1.9		
	For-profit publisher	9	1.2	1	0.3	0	0.0		
	Individual	23	2.9	10	2.6	3	5.7		
	Other	114	14.6	31	8.0	10	18.9		
	Unknown	5	0.6	1	0.3	0	0.0		
	N/A	17	2.2	11	2.8	1	1.9		
Total		780	100.0	386	100.0	53	100.0		
Avg. # of published articles/yr. (Past 3 yrs)	0–4	28	3.6	0	0.0	1	1.9	68.741[a]	0.000
	5–9	81	10.4	18	4.7	3	5.7		
	10–24	330	42.3	147	38.1	23	43.3		
	25–49	174	22.3	134	34.7	4	7.5		
	50–99	64	8.2	45	11.7	7	13.2		
	100–499	18	2.3	5	1.3	2	3.8		
	≥ 500	0	0.0	0	0.0	0	0.0		
	N/A	85	10.9	37	9.6	13	24.5		
Total		780	100.0	386	100.0	53	100.0		
Share of authors from outside the publication country	0	46	5.9	28	7.3	8	15.1	38.958[a]	0.000
	25	252	32.3	182	47.2	20	37.7		
	50	195	25.0	81	21.0	10	18.9		
	75	175	22.4	68	17.6	8	15.1		
	100	38	4.9	8	2.1	2	3.8		
	N/A	74	9.5	19	4.9	5	9.4		
Total		780	100.0	386	100.0	53	100.0		

[a]Fisher's exact test; others are chi-square tests. Statistically significant differences among journals in high, upper-middle, and lower-income countries were found in three areas of challenges: Editorial workflow [X^2 (10, n = 1,219) = 21.262, p = 0.019], Skills and competencies [X^2 (10, n = 1,219) = 30.830, p = 0.001], and Sustainability and funding [X^2 (10, n = 1,219) = 21.266, p = 0.019] (Figure 3). Journals in lower-income countries reported more concern regarding skills and competencies (39.7 %) and sustainability and funding (37.8 %). For those in upper-middle-income countries there was a greater concern for editorial workflow (33.7 %) and sustainability and funding (35.8 %). Overall, journals in high-income countries expressed fewer concerns in all areas.

higher in lower-income countries. Regarding journal ownership 62.7 % of journals in upper-middle income countries were owned by a university. However, for journals in high-income and lower-income nations two major owners were universities (34.2 % and 45.3 %, respectively) and learned societies (15.8 % and 13.2 %, respectively). Moreover, it was observed that journals in higher-income countries publish fewer articles with authors from more diverse countries.

As shown in Supplementary Table 5 high-income countries were less likely to have a trained copy-editor [p = 0.000, Fisher's Exact Test, FET] and fewer paid staff [p = 0.000, Fisher's Exact Test, FET]. Notably, this shows that high-income countries do not always have strong financial support for OADJ. Relying on volunteers was more common among lower income countries [p = 0.031, Fisher's Exact Test, FET]. Regarding the types of dissemination platform an institutional platform was relatively more prominent among

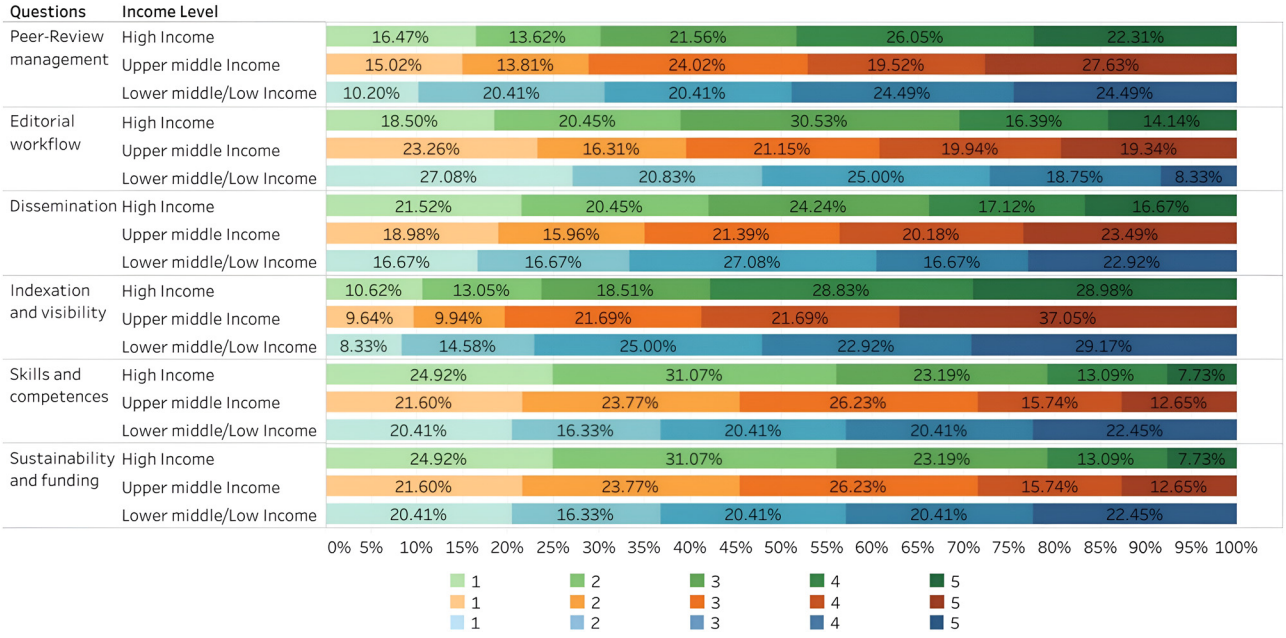


Figure 3: Challenges in six areas: a comparison among OA diamond journals in non-English-speaking countries in terms of GDP (1: low concern; 5: significant concern).

upper-middle income countries. In contrast, international platforms were more common for lower income countries [p = 0.000, Fisher's Exact Test, FET]. The perceived importance of a journal's international readership was much more vital among lower-income countries (64.2 %) than it was for high-income nations (32.9 %) and upper-middle-income (28.0 %) countries [X^2 (6, n = 1,219) = 37.028, p = 0.000]. As for whether they considered moving away from the OA diamond model, statistically significant results were not found.

The analysis of multiple responses is reported in Supplementary Table 6. Regarding how peer reviews were processed email was the most popular in all three categories but OJS was more common in upper-middle-income (61.9 %) and lower-income (60.8 %) countries than in high-income nations (37.9 %). Over half (54.1 %) of high income and 46.3 % of upper-middle income countries did not employ external resources for editorial services. The majority (80 %) of lower-income countries did not use those services. For the indexes in which the journals were registered, DOAJ (72.2 % of high income, 85.9 % of upper-middle-income, and 95.7 % of lower income) and Google Scholar (66.1 % of high-income, 74.4 % of upper-middle-income, and 91.3 % of lower income) were the most popular. Furthermore, the ratios were higher among lower income countries. Regarding financial supporters, among high income and upper-middle-income nations, research organizations/universities, national funding/government agencies, and publishers were the primary sources of financial resources. Among lower income countries publishers comprised the main source. When it came to the reasons for reconsidering the OA diamond model, economic viability, long-term feasibility, and the importance of the JIF were all listed as the main reasons in all three types of countries. However, JIF's importance was deemed more critical among upper-middle and lower income countries.

RQ4: What are the characteristics of OA diamond journals published in non-English-speaking countries in terms of journal languages?

As for languages, journals published in NESC fall into three categories: English journals (19.8 %), journals in English and other languages (55.9 %), and non-English journals (24.3 %). Regarding region and GDP the journals in Africa and Asia were predominantly in English. In contrast, more Latin American journals are published in non-English languages (Table 6).

Statistically significant differences were observed in all general characteristics (Table 7). Regarding journal discipline, English language journals— compared to those in other languages—published more in science and medicine fields than in HSS. Universities garnered the highest percentages regarding journal ownership, especially among non-English language journals. However, learned societies had ownership of more English language journals. The share of authors from foreign countries was more significant for English language journals. This result is understandable when considering the motivations behind publishing English language journals in NESC.

Supplementary Table 7 presents additional data on six challenging areas. Regarding types of dissemination

Table 6: Distribution of journal languages in terms of region and GDP.

		English		English and other languages		Non-English		X^2	P
		N	%	N	%	N	%		
Region	Africa	6	2.5	5	0.7	2	0.7	268.294[a]	0.000
	Asia	32	13.2	22	3.2	10	3.3		
	Europe (eastern)	78	32.1	137	19.9	14	4.7		
	Europe (Western)	107	44.0	371	53.9	104	34.8		
	Latin America	13	5.3	138	20.1	168	56.2		
	Mid. East	7	2.9	15	2.2	1	0.3		
	Total	243	100.0	688	100.0	299	100.0		
GDP	High	169	69.8	480	70.1	129	44.5	88.383	0.000
	Upper-middle	52	21.5	182	26.6	152	52.4		
	Lower middle/Lower	21	8.7	23	3.4	9	3.1		
	Total	242	100.0	685	100.0	290	100.0		

[a]Fisher's exact test; others are chi-square tests.

platforms the ratios of institutional platforms were higher among English and other language journals (39.4 %) and non-English language journals (51.5 %) [X^2 (12, n = 1,230) = 45.963, p = 0.000]. Whereas 60.5 % of English language journals replied that their international readerships were indeed important English and other language journals (28.1 %) and non-English journals (20.7 %) considered international readership as less vital [X^2 (6, n = 1,230) = 141.645, p = 0.000]. Notably, it was found that more English journals were thinking of moving away from the OA diamond model [X^2 (8, n = 1,230) = 25.331, p = 0.000].

The analysis of multiple responses is reported in Supplementary Table 8. Regarding methods employed for processing peer reviews, email and OJS were the most popular for all three groups. Nonetheless, it was noticeable that publisher systems were more prevalent among English language journals. Regarding indexes in which the journals were registered, DOAJ and Google Scholar were the most common. There were more English language journals in most indexes except for DOAJ and the Latindex Catalog. As for the rationale for reconsidering the OADJ model, economic viability, long-term feasibility, and JIF importance were cited most, whereas JIF was reported as the more critical for English language journals.

5 Discussion

Given the need for improved global scholarly communication (Márquez and Porras 2020; UNESCO 2021), as demonstrated by major threats to humanity including the COVID-19 pandemic and natural disasters, we set out to investigate the major issues and role of OA diamond journals (OADJ) in reducing disparities and enhancing global scholarly communication. We analyzed the characteristics of OA diamond journals (OADJ) published in NESC with an emphasis on these major issues and barriers including language (global scholarly communication has mainly been centered on English-language journals published in Western countries), resources available to authors and publishers (those in high and upper-middle-income nations have multiple sources of financial resources whereas those in lower income countries have a sole source – publishers), gender (women face more barriers; see for instance Larivière et al. 2013), discipline (scholars in the social sciences and humanities have fewer opportunities for support), country status (those in low and middle-income countries face serious barriers), and career stage (early career researchers have limited networks and opportunities).

In a related work, Ford and Alemneh (2022) establish a framework for identifying the obstacles faced by low- and middle-income countries which explains these hurdles leading to epistemic injustice in three dimensions: consuming (accessing), producing, and sharing. We also argue that OADJ can facilitate reducing barriers pertaining to these three classifications. Our analysis showed that 82.4 % of OADJ were published in countries using non-English as an official language. NESC publishing OADJ could be categorized into two groups: one group where the OADJ model is actively practiced and the other group where OADJ has not gained traction. Western Europe, Latin America, Eastern Europe, and high income countries are in the former group. In contrast, Asia, the Middle East, Africa, and lower-middle and low income countries are in the latter. OADJ distribution among NESC is: Western Europe (47.4 %), Latin

Table 7: A comparison of OA diamond journal characteristics in non-English-speaking countries in terms of journal language.

		English		English and others		Non-English		X^2	*P*
		N	%	N	%	N	%		
Main discipline	HSS	76	31.3	374	54.4	157	52.5	112.786	0.000
	Science	86	35.4	106	15.4	21	7.0		
	Medicine	32	13.2	36	5.2	23	7.7		
	Multidisciplinary	21	8.6	81	11.8	43	14.4		
	Other	15	6.2	63	9.2	39	13.0		
	N/A	13	5.3	28	4.1	16	5.4		
Total		243	100.0	688	100.0	299	100.0		
Journal ownership	Government agencies	11	4.5	47	6.8	17	5.7	57.400[a]	0.000
	Learned society	44	18.1	82	11.9	27	9.0		
	University	79	32.5	293	42.6	170	56.9		
	University press	11	4.5	37	5.4	16	5.4		
	Other research org.	22	9.1	69	10.0	20	6.7		
	Other non-profit publisher	18	7.4	20	2.9	12	4.0		
	For-profit publisher	4	1.6	6	0.9	0	0.0		
	Individual	8	3.3	22	3.2	6	2.0		
	Other	37	15.2	96	14.0	22	7.4		
	Unknown	2	0.8	3	0.4	1	0.3		
	N/A	7	2.9	13	1.9	8	2.7		
Total		243	100.0	688	100.0	299	100.0		
Avg. # of published articles/yr. (Past 3 yrs)	0–4	4	1.6	22	3.2	3	1.0	46.903[a]	0.000
	5–9	26	10.7	65	9.4	11	3.7		
	10–24	103	42.4	276	40.1	125	41.8		
	25–49	46	18.9	189	27.5	82	27.4		
	50–99	28	11.5	67	9.7	23	7.7		
	100–499	11	4.5	11	1.6	3	1.0		
	≥ 500	0	0.0	0	0.0	0	0.0		
	N/A	25	10.3	58	8.4	52	17.4		
Total		243	100.0	688	100.0	299	100.0		
Share of authors from outside the publication country	0	7	2.9	46	6.7	29	9.7	209.087	0.000
	25	32	13.2	280	40.7	145	48.5		
	50	56	23.0	167	24.3	68	22.7		
	75	99	40.7	122	17.7	33	11.0		
	100	35	14.4	12	1.7	2	0.7		
	NA	14	5.8	61	8.9	22	7.4		
Total		243	100.0	688	100.0	299	100.0		

[a]Fisher's exact test; others are chi-square tests. Statistically significant differences among journals in English, English and other languages, and non-English were found in two areas of challenges: Editorial workflow [X^2 (10, n = 1,230) = 27.360, p = 0.002] and Skills and competencies [X^2 (10, n = 1,230) = 28.070, p = 0.002] (Figure 4). In both areas non-English journals reported more concerns.

America (25.9 %), Eastern Europe (18.6 %), high income countries (64.0 %), Asia (5.2 %), the Middle East (1.9 %), Africa (1.1 %), and lower-middle and low income countries (4.3 %). This distribution is also consistent with the average number of OADJ per country in each region (Western Europe [38.93 journals per country], Latin America [21.27 journals per country], Eastern Europe [14.31 journals per country], Asia [6.4 journals per country], the Middle East [5.74 journals per country], and Africa [2.17 journals per country]. The relationships between regions and GDP are reported in Supplementary Table 9.

Among the NESC in which the OADJ model is actively practiced it was found that, in general, foreign readership was perceived as less critical. However, the share of foreign authors was higher (particularly among high income countries). In addition, certain unique characteristics were observed by specific regions. For instance, OADJ from Latin America, primarily upper-middle income countries, yielded high percentages for publishing in non-English languages and being registered in Latin American index systems. Because both Spanish and Portuguese are the dominant languages used in Latin America (The Columbia

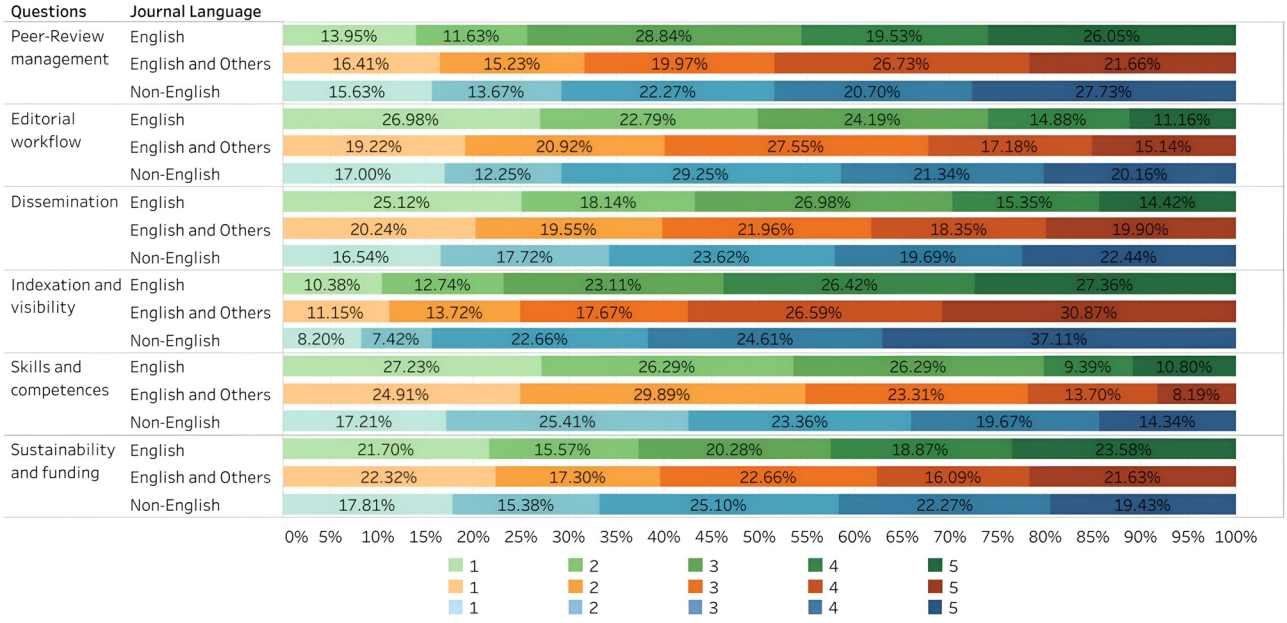


Figure 4: Challenges in six areas: a comparison of OA diamond journals in non-English-speaking countries in terms of journal languages (1: low concern; 5: significant concern).

Encyclopedia 2023), and given that Spanish is the second most widely spoken first language in the world (Central Intelligence Agency 2023), it appears that they have established their own scholarly community centered around their languages. Among European journals, the ratios for English and other languages were higher than for other regions. Journals from Latin America and Western Europe showed higher usage of institutional platforms for dissemination and hosting. They also reported that research organizations and national funding/government agencies were their main financial sources. Although these countries indicated stronger intentions for staying within the OADJ model the main barriers regarding model sustainability differed. Latin America cited economic viability, Eastern Europe reported economic viability and JIF, and Western Europe—which is comprised mainly of high income countries—listed longer term feasibility. Overall, high income countries expressed lower levels of concern for operating within the OADJ model.

Some common characteristics were also found among the group for whom OADJ has not gained traction; notably, this segment of countries are the regions in which, according to Ford and Alemneh (2022), researchers have additional barriers to consuming, producing, and sharing research outputs. Journals from Africa and the Middle East relied more on volunteers for the journal's operation, used national and international platforms for dissemination/hosting more often, and received more financial support from publishers. Differences in funding sources were noticed among ESC, high income NESC, and low income NESC. Compared to OADJ in ESC, NESC journals had remarkably rare levels of support from libraries and foundation/trust; among OADJ in higher income NESC, national/government funding was more prevalent. However, among OADJ lower income NESC, publishers were the more common funding source. The importance of foreign readership was common among OADJ from Africa, Asia, and the Middle East. For the journals from these regions economic viability, JIF, and longer-term feasibility were cited as obstacles to sustainability. In contrast, the percentage of those considering moving away from the OA model was much higher in Africa.

5.1 Practical Implications and Recommendations

To improve OADJ practices suggestions need to be discussed differently, depending on the characteristics of said practices. Countries belonging to the former group seem to have relatively stable OADJ operating systems and those in Latin America have established their scholarly communities in their languages. Therefore, for this group, future efforts should be centered on promoting the engagement of scholarly communication at the international level. In addition to registering their journals in international indexes, various accommodations and language translations should be made to overcome language barriers so that international readers can access and use journals published in diverse countries. Steigerwald et al. (2022) and Amano et al. (2021b) suggest

using machine translation which is now fairly reliable. Yoon, Kim, and Chung (2023) recommend making accommodations that can assist readers facing language barriers. Examples they discussed were providing an online navigational interface and including key components of manuscripts in English, such as article titles, author names, references, abstracts, keywords, key points (or key implications, highlights), captions, and labels for tables and figures and headings and subheadings.

In the latter group there was a higher level of dependence on volunteers, a lack of substantial funding, and concern over skills/competencies and sustainability/funding. To facilitate OADJ operations well-established systematic support should be provided at national and international levels. For countries and regions with economic difficulty or where national support is insufficient, platforms, open sources, and best practices should be developed at the international level. Pearce (2022) suggests utilizing open source software (i.e., OJS), open access repositories, AI for copy-editing, and templates. It was also found that these countries valued international visibility and JIF and that JIF was a primary factor influencing a journal's sustainability. Although it was reported that OADJ tends to be more internationally distributed than APC-based or subscription-based journals (Bosman, Frantsvåg, and Kramer 2021a; Yoon, Kim, and Chung 2023) the increase of their JIF (Pearce 2022) and the over- and misuse of JIF for research performance evaluation discourage the adoption of the OADJ model. OA principles, such as DORA and the Leiden manifesto, raised serious concerns about the misuse of bibliometric indexes for research performance evaluation. However, in reality, bibliometric-based research evaluation has been widely adopted in scholarly communication. Therefore, continuous discussions about and efforts for research evaluation reflecting disciplinary and regional diversity should be conducted. Finally, the usefulness of the OADJ model can be discussed productively based on the findings of previous studies on predatory journals. According to Macháček and Sroholec (2022) this group includes countries with a higher proportion of predatory journals at the national level despite the small size of the research sector. Given how OA journals are viewed in these countries, Regier (2018) reported that new journals published in South Asia, the Middle East, and Africa are often misunderstood as predatory journals. Macháček and Sroholec (2022) interpret their results as increased expectations for research performance but the immaturity of the research system in those countries. Notably, OADJ can be an ideal model for solving predatory journals' problems which abuse the OA journal system.

The findings of this study have several implications for promoting the OADJ publishing landscape. By identifying the distinct characteristics and challenges OADJ publishing in NESC faces we provide a foundation for targeted interventions to support these journals. This includes developing policies that offer tailored financial and technical support to various journals operating in various contexts, ensuring they can sustain their operations and enhance their visibility. Also, addressing the over-reliance on bibliometric indicators such as the JIF is crucial for fostering a more equitable and diverse scholarly communication system. By advocating for alternative metrics and inclusive evaluation practices we can better recognize and support the contributions of OADJs to global knowledge production.

5.2 Limitations and Future Research

In addition to this study's key insights there are also some limitations to address. First, there were notable confines to the OADJS dataset itself although an attempt was made to collect the data comprehensively by utilizing diverse resources. In their report, Bosman, Frantsvåg, and Kramer (2021a) point to biased geographical distribution and motivation on the journals' part to participate in the survey (i.e., participating journals may emphasize the need for additional support). Additionally, the six specific languages used in the survey instrument may have caused bias. They specifically noted an overrepresentation of Western European and US/Canadian journals (32). Therefore, it is essential to approach the interpretation and generalization of the results from the current study with caution. Second, to grasp a profound understanding of OADJ practices, each country's research and scholarly communication environments should be reflected. However, this study analyzed only a few factors such as a nation's official language, region, and GDP.

Based on the discussions and study limitations there are several areas for future research in the field of OA diamond journal practices. First, although OADJS utilized diverse sources to collect data on OADJ there are still limitations and biases in the dataset. Bosman, Frantsvåg, and Kramer (2021a) addressed that there were 11,200 diamond journals listed in DOAJ, of which 1,100 responded to the survey, however, there were an additional 500 diamond journals that participated in the survey but were not listed in DOAJ. They mentioned that it is uncertain whether the distribution of this latter category (journals in the survey but not in DOAJ) is due to biases or actual geographical differences among OA diamond journals. Future research should aim to create a more comprehensive and representative dataset of OADJ

worldwide. Second, to enhance our understanding of OA diamond journal publishing future research should reflect the research environments of each country and region. It should identify the barriers and facilitators for adopting and maintaining OA diamond journal practices, including factors such as economic status, national support for OA, research evaluation systems, technical infrastructure, and researchers' perceptions of OA. By considering these contextual factors it would be possible to gain insights into the specific challenges different regions face and develop strategies to promote OA diamond journal publishing. Third, developing practical guidelines is crucial for ensuring the sustainability of OA diamond journals and advancing global scholarly communication. These guidelines should address various aspects including economic viability (business model), journal visibility and dissemination, research evaluation metrics and culture, multilingual scholarly communication interfaces, technical platforms, human resources and training, and related policy development. This can involve studying successful cases and learning from the experiences of journals that have effectively operated within the OA diamond journal model. Guidelines should address the specific challenges different regions face, offering tailored recommendations for overcoming barriers and ensuring long-term feasibility. In conclusion, future research in the field of OA diamond journals should aim to overcome the current study's limitations and delve into new areas of investigation. It will ultimately promote global scholarly communication.

6 Conclusion

Although global scholarly communication should include regional diversity it has unfortunately been centered on English-language journals published in Western countries with significant economic power. To reduce epistemological disparity the current study examined the characteristics of OADJ published in NESC. More than 80 % of OADJ were published in NESC; European countries, Latin America, and high income nations were the leading regions publishing OADJ. However, approximately 76 % of NESC OADJ were published in English or English and other languages. Among NESC journals produced in low and lower-middle income countries the publisher was cited as the primary funding source. In contrast, for NESC journals produced in higher income nations, the national/government category was reported as the primary source of financial support. As for intentions to stay with the OADJ model, these were higher among NESC journals than ESC journals. However, among NESC journals, the ratios of those moving away from the model were higher among African, Asian, Eastern European, and English language journals which all highly regard the importance of JIF. Regarding the indexes in which the journals were registered, DOAJ and Google Scholar were the most popular among NESC journals. DOAJ was more dominant in Africa and the Middle East and Google Scholar was the more common choice for Asian journals. Latin American journals were indexed in the Latindex catalog, Redalyc, and Scielo. Notably, high income countries showed lower indexing rates but lower income countries had higher numbers in this category. When it came to NESC journals 32.7 % answered that international readership is essential; this was particularly vital for those from low and lower-middle income countries, whereas the importance of international readership was much lower among Latin American journals.

Suggestions for enhancing the environment of OADJ practices were also discussed. Countries actively publishing OADJ seem to have relatively stable OADJ operating systems. Those in Latin America have established their scholarly communities in their own languages. Therefore, for this group, recommendations for promoting the engagement of scholarly communication at the international level were considered. For the countries that did not gain traction on OADJ well-established systematic support at the international level was advised. Finally, this study demonstrated OADJ's potential for reducing epistemic disparity and enhancing global scholarly communication and future research agenda.

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Supplementary Material: This article contains supplementary material (https://doi.org/10.1515/libri-2024-0026).