

Is ‘Diamond’ Open Access an Appropriate Publishing Model for Asian Countries? A Case Study from Latin America

Hanna Shmagun
Korea Institute of Science
and Technology
Information (KISTI)
hanna.shmagun@gmail.com

Jangsup Shim*
Korea Special Library
Association (KSLA)
sjshl1it@gmail.com

Charles Oppenheim
Robert Gordon
University
c.oppenheim@rgu.ac.uk

Neus Torres Tubau
Robert Gordon
University
n.torres-tubau@rgu.ac.uk

Yujung Sim
Korea Special Library
Association (KSLA)
sims88@korea.kr

Jaesoo Kim
Korea Institute of
Science and Technology
Information (KISTI)
jaesoo@kisti.re.kr

Abstract

The Coronavirus pandemic has highlighted the need to reinforce Open Access policies and practices around the world by moving away from commercial publisher-owned journals towards alternative methods of publication with no charges for authors and readers. Our paper aims to identify the main Open Access trends in Latin America – a region with a long tradition of publicly funded, scholar-led publishing infrastructures streamlining and sustaining the ‘Diamond’ (non-commercial) Open Access model. In particular, the paper explores the key initiatives and the current status of Open Access in Argentina (the leading country in the region in this regard) highlighting its strengths and remaining challenges. The Latin American model is compared with the Korean approach to Open Access publishing. We believe our research offers fresh insights for Korean and other Asian agencies and research communities to cooperate and possibly drive a new, more efficient business model for non-for-profit Open Access publishing.

Keywords: Open Access, Diamond (Gold no-APC) Open Access publishing model, Latin America, Argentina, Korea

1. Introduction

The COVID-19 pandemic has showed the critical importance of unfettered access to scholarly information. For example, the UN Conference on Open Science, organised in July 2021 by the UN Dag Hammarskjöld Library and the UN Department of Economic and Social Affairs¹,

* Corresponding author

¹ <https://www.un.org/library/OS21>

demonstrates the considerable interest Open Science has recently attained because of the pandemic and calls on different (inter)national stakeholders to reinforce their Open Science policies and practices, such as Open Access (OA).

The OA movement emerged in the 1990s and was popularised in the mid-2000s (Moore, 2020). It has been driven by advances in computer and networked technologies and such motivations as the taxpayer argument and accountability to citizens who pay for research via taxes (Suber, 2003), ‘free culture’ in the world of computer software (open source) and within technological disciplines (e.g., arXiv project of the high-energy physics community) coupled with the decline of library budgets due to expensive journal subscriptions (Eve, 2014), etc. The 2002 Budapest OA Initiative Declaration has been considered as a catalyst for the OA movement. The Declaration defines OA to peer-reviewed research literature as its “free availability on the public internet, permitting any users to read, download, copy, distribute, print, search, or link to the full texts of these articles, crawl them for indexing, pass them as data to software, or use them for any other lawful purpose, without financial, legal, or technical barriers other than those inseparable from gaining access to the internet itself. The only constraint on reproduction and distribution, and the only role for copyright in this domain, should be to give authors control over the integrity of their work and the right to be properly acknowledged and cited” (“Budapest Open Access Initiative,” 2002).

There are various different models of OA, the best known of which are the ‘Green’ and ‘Gold’ OA models. According to a leading theorist of OA and one of the pioneers of the OA movement, Suber (2012), OA delivered by journals, regardless of the journal’s business model, is called Gold OA and OA delivered by repositories is called Green OA or self-archiving. Some other researchers provide a more detailed classification of OA models, dividing them into ‘Green’, ‘Gold’, ‘Hybrid’, and ‘Bronze’ (Robinson-Garcia et al., 2020), while others include the ‘Diamond’ (also known as ‘Gold no-APC’) model into the classification as well (Ghent University, 2021; Johnson et al., 2017). According to Fuchs & Sandoval (2013, p. 438), in the Diamond OA model, not-for-profit, non-commercial organisations, associations or networks publish material that is made available online in digital format, is free of charge for readers and authors and does not allow commercial and for-profit re-use. In other words, the Diamond OA is a form of Gold OA (immediate OA publishing of articles by a journal/publication platform with Creative Commons licences) that does not impose article processing charges (APCs) on authors. To avoid confusion and articulate clear differences among OA models, Fuchs & Sandoval (2013, p. 438) recommended categorising all OA models as ‘Diamond’, ‘Corporate’ (for-profit OA route in subscription and non-subscription journals), and ‘Green’ OA. Figure 1 below presents a simplified classification of the major OA models.

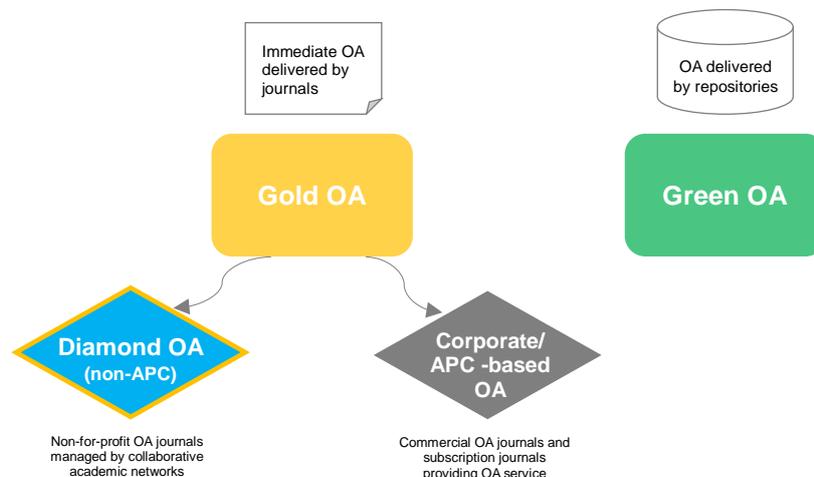


Figure 1. Types of OA models

In addition to the Budapest Declaration, one of the major milestones of the OA movement was a joint initiative adopted by several major European funding agencies (cOAlition S) in 2018 called as ‘Plan S’ (cOAlition S, 2018). Despite its good intention of accelerating immediate OA for readers, the initiative has been criticised for supporting a for-profit, APC-based OA model through transformative agreements (also known as ‘read and publish’ or ‘publish and read’ agreements) with publishers (Guzik & Ahluwalia, 2019; ISC, 2019; Debat & Babini, 2019). Such an OA model is similar, to some extent, to the well-known ‘Big Deal’ journal subscription model since it implies the commodification of publicly funded knowledge and the direction of significant resources to oligopolistic publishing houses. According to CLACSO (the Latin American Council of Social Sciences)’s OA Advisor Dominique Babini, “With Plan S the big money still goes to publishers. After 20 years of OA, is this a desirable outcome? ... more money should go to building and improving public infrastructure for OA and open science.” (ISC, 2019).

The focus of this paper is Diamond OA, which many consider as “the only sustainable future for academic publishing” (Fuchs & Sandoval, 2013) rather than as a survival strategy suited only for developing regions. We stress the importance of policy interventions and concerted efforts for fostering the Diamond OA model in Korea and other Asian countries, which are the members of the Special Libraries Association (SLA), and provide some recommendations for this. To this end, the paper portrays the background of OA publishing in Latin America looking in particular into the collaborative cross-regional initiatives and national policies in Argentina. The paper also reflects the current approach of OA publishing in Korea and compares the OA indicators in Korea and Argentina. We also highlight the strengths and challenges in both countries’ approaches.

The main reason behind the selection of Latin America as a case study is the fact that it has been acknowledged by UNESCO as one of the most advanced regions in the world as per percentage of scientific output in local and regional publications available in OA (UNESCO, n.d.). For instance, according to the findings of a 2011 study, over 70% of the academic output of Latin America was OA, while no other region of the world at the time exceeded 20% (Miguel et al., 2011). Latin America is also regularly quoted as having a long tradition of publicly funded, scholar-led publishing infrastructures sustaining the Diamond OA model – over 90% of journals are run by scholar-led non-profit initiatives, mainly universities, and use the Diamond OA model (DORA, 2021). The recent study commissioned by cOAlition S (Bosman et al., 2021, p. 32) confirms that Latin America leads in the number of Diamond OA journals, in comparison with other regions in the world. It was also identified that the Southern Cone (Argentina, Brazil, Chile, Paraguay, Uruguay) is the most productive sub-region, with the highest number of OA publications in Brazil, Argentina, and Chile (Minniti et al., 2018). We chose Argentina as a unit of analysis, since it has a population size relatively similar to Korea as well as it is the headquarter of CLACSO² – an international non-governmental institution with associative status in UNESCO, which actively promotes and supports OA initiatives at the national and regional levels.

2. Latin America’s approach to OA

2.1. Major cross-regional networks and initiatives

The whole process of scholarly communication (research production, publication, dissemination, consumption) in Latin America is exclusively supported by government or public funds and managed by collaborative, non-commercial academic networks and infrastructures, which have been established since the end of 90s to promote OA to scientific outcomes from all counties in the region. For example, the most known regional initiatives

² <https://www.clacso.org/>

are SciELO³ and Redalyc⁴ – networks of peer-reviewed OA scientific journals of Latin America functioning as bibliometric databases (platforms) with full-text articles. In particular, the current Redalyc's collection contains 716,784 full-text articles from 1,420 OA peer-reviewed journals from 26 countries of Latin America, Spain, and Portugal⁵. Both SciELO and Redalyc have defined standards for domestic OA journals and launched regional bibliometric indexes (e.g., SciELO Citation Index) and alternative metrics (download statistics). Detailed information about SciELO and Redalyc can be found in the study “Open Access Indicators and Scholarly Communications in Latin America” supported by UNESCO (Alperin et al., 2014, pp. 81-142).

Among the other crucial initiatives at the regional level is AmeliCA⁶, which is a multi-institutional community-driven association founded in 2018 for strengthening non-profit publishing model (Diamond OA). It is supported by UNESCO, CLASCO, Redalyc, and several Latin American universities. AmeliCA provides markup technology in XML language (AmeliCA XML) to scholarly journals, editorial professionalisation support, journal quality assessment, offers visibility and discoverability, metrics, and other services. AmeliCA is often compared with the European Plan S initiative in terms of sharing the same target of fostering OA but using different strategies for this. If Plan S does not question the existence of commercial publishing business model and large commercial publishing houses as the leading disseminators of scholarly outputs, AmeliCA tries to tackle the core of the problem with a more revolutionary approach by building a domestic non-profit publishing infrastructure to be under control of academic institutions (Becerril-Garcia, 2019).

Latin America also has a priority for Green OA initiatives related to the interconnection of national digital repositories in the region. According to Suber (2012), “Green and Gold OA are complementary and synergistic. We should pursue them simultaneously, much as an organism must develop its nervous system and digestive system simultaneously.” OA repositories can be used not only for preprints, datasets, dissertations, and other research outputs not published in journals or embargoed articles published in non-OA journals, but repositories can be also used by journals as a long-term sustainable method of preservation of published articles (Suber, 2012). In this light, the important initiative in the region is La Referencia (The Federated Network of Institutional Repositories of Scientific Publications)⁷, which represents a network of national systems of digital repositories from eleven countries (Argentina, Brazil, Chile, Costa Rica, Colombia, Ecuador, El Salvador, Spain, Panama, Peru, and Uruguay). The main objective of the initiative is to boost interoperability between different repositories for metadata harvesting.

It should be noted that international organisations, such as UNESCO (in particular, UNESCO's Regional Bureau for Science in Latin America and the Caribbean based in Montevideo, Uruguay), BIREME (specialised centre of the Pan American Health Organization / World Health Organization) and CLACSO, are quite active in the region for promoting and supporting OA initiatives to publicly funded research. For example, CLACSO supports and coordinates many collaborative, non-commercial initiatives and national/institutional policies through its ‘OA Campaign’ (CLACSO, n.d.). One of the recent CLACSO's initiatives is the Latin American Forum on Scientific Evaluation (FOLEC)⁸ aiming to foster collaboration and knowledge sharing on research evaluation reform in the region.

³ <https://scielo.org/>

⁴ <https://www.redalyc.org/>

⁵ Data is retrieved from the home page of Redalyc.org on June 18, 2021.

⁶ <http://amelica.org/>

⁷ <https://www.lareferencia.info/>

⁸ <https://www.clacso.org/en/folec/>

2.2. Argentina's OA indicators

To analyse indicators characterising the state of OA journals and repositories in Argentina, we used two international databases respectively – DOAJ (Directory of Open Access Journals)⁹ and OPenDOAR (Directory of Open Access Repositories)¹⁰. These databases were also used to extract the same OA indicators for Korea (see subsection 3.1).

DOAJ is the largest database providing metadata of registered peer-reviewed Gold OA journals from 126 countries and metadata of articles published in those journals. One of the reasons of selecting DOAJ to identify the state of OA journals in our case study countries is the fact that it is considered as the most representative database, while other international databases, such as Web of Science (WoS) and Scopus, poorly reflect research outputs published within the Latin American region. For example, in 2016-2017 WoS and Scopus included less than 1% of regional journals from Latin America in their collections (DORA, 2021). In addition, DOAJ clearly distinguishes two forms of Gold OA journals, Diamond/no-APC and APC-based ones, and provides data on the amount of APCs¹¹. Both the journal and the article metadata datasets were downloaded from DOAJ website¹² in JSON format and then converted to CSV format.

According to Table 1, Argentina has 314 OA journals registered in DOAJ with the total number of 50,569 papers, and there are 72 OA repositories registered in OpenDOAR. We can see a stable growth of new OA journals since 2014, most of the journals belong to universities (their units) or scholarly societies and associations. The number of newly established repositories and newly published OA papers fluctuate widely, but there is a growth of OA papers since 2016.

Table 1. Annual growth of new domestic OA journals (DOAJ), OA repositories (OpenDOAR), and OA papers published in domestic OA journals (DOAJ)

Years	OA journals	OA repositories	OA papers
2006	3	1	63
2007	7	0	126
2008	5	3	168
2009	2	3	209
2010	10	6	294
2011	7	5	208
2012	13	6	147
2013	16	9	8,342
2014	8	2	984
2015	15	3	3,484
2016	20	2	2,468
2017	40	4	3,391
2018	47	2	5,079
2019	49	16	5,940
2020	60	9	19,766
2021 ¹³	12	1	
Total	314	72	50,569

⁹ <https://doaj.org>

¹⁰ <https://v2.sherpa.ac.uk>

¹¹ The DOAJ metadata about APC amounts are sometimes misleading and incorrect if to compare it with the information displayed on the journals' websites. The limitations of this particular DOAJ metadata were also expressed by other researchers (Scholz, 2015; Morrison, 2018; Zhao et al., 2021).

¹² <https://doaj.org/docs/public-data-dump/>

¹³ The 2021 data was recorded on [19 June 2021]

We can see that 96,8 % of all Argentine OA journals registered in DOAJ are Diamond ones, which do not charge APCs (Table 2). Among these Diamond journals there is a dominance of the Social Sciences and Humanities (SSH) journals¹⁴. Only 3,2 % of OA journals (10), from the fields of Agriculture, Earth Sciences, Physics, and Health Sciences, state that they have some form of APCs. In general, APCs are not very high and vary from journal to journal (maximum is 500 USD per article).

Table 2. Domestic OA journals by type (APC-based and Diamond), based on DOAJ data

Type of OA journals	Number and share
Diamond OA journals (without APCs)	304 (96,8%)
APC-based OA journals	10 (3,2%)*
Total (2021)	314

However, it is hard to get to know the precise annual expenses of Argentine researchers (their institutes) on APCs for publishing OA papers in both domestic and non-Argentinian journals. According to the 2019 Big Deals Survey conducted with respondents from national science and technology government agencies and consortia of libraries from eleven Latin American countries, including Argentina (Bravo-Marchant & Cabezas-Bullemore, 2020, p. 19), there are no well-established national mechanisms to track and monitor data about funds directed to pay APCs.

2.3. Key national OA policies and initiatives in Argentina

The Ministry of Science, Technology and Innovation (MINCYT) and its subordinate organisations (e.g., the National Scientific and Technical Research Council/CONICET) have taken the leading role to promote OA in Argentina. In particular, the country has made sufficient efforts in developing Green OA.

First, in 2011, the National System of Digital Repositories (Sistema Nacional de Repositorios Digitales, SNRD)¹⁵ was created as an initiative of the Advisory Board of the Science and Technology Electronic Library under MINCYT. SNRD portal provides access to more than 362,200 digital objects from an interoperable network of 44 institutional repositories¹⁶. SNRD is a national node of La Referencia network.

Second, in the same year, when SNRD was created, MINCYT proposed a law to mandate Green OA. Law n. 26.899 “Open access institutional digital repositories” (“Repositorios digitales ...,” 2013) was approved by the National Senate in 2013 mandating institutions that receive government funds for conducting research to develop interoperable institutional OA repositories, where research results and data must be deposited, with maximum embargo of six months for publications and five years for data. Among other things, the law requests a Data Management Plan for projects, which expect to generate research data. It should be noted that, at that time, Argentina was the second country in the world to have such kind of legislation (Gómez Izquierdo, 2016). And for February 2019, Argentina, together with Mexico and Peru, have been the only countries in Latin America that have approved national laws on OA (ISC, 2019).

In addition to the above-mentioned OA law (the most powerful legal instrument), there are seven other OA policy mandates in Argentina registered in the international Registry of Open

¹⁴ This is compliant with the results of the recent study on the Diamond OA journals across the world (Bosman et al., 2021), which confirms that there is a dominance of SSH journals among Diamond OA journals and the scarcity of SSH journals among APC-levying journals.

¹⁵ <https://repositoriosdigitales.mincyt.gob.ar/vufind/>

¹⁶ Not all institutional repositories registered in OpenDOAR (see above Table 1) are connected to this network yet.

Access Repository Mandates and Policies (ROARMAP)¹⁷. One is adopted by MINCYT (as a research funding agency) and the others are adopted by research performing organisations (universities) that request researchers to provide OA to their peer-reviewed research articles by depositing them in an institutional OA repository.

Regarding Diamond OA *per se*, using public funding mechanisms (academic institutions' budgets), Argentina supports domestic Diamond OA journals (which are part of the above-mentioned collaborative, cross-regional initiatives, such as SciELO and Redalyc), improves journals' quality and technological infrastructures for their visibility. The previous study (Bosman et al., 2021) investigating the worldwide landscape of Diamond OA journals reported that the majority of Diamond OA journals across the world do not use extensive resources to maintain their publishing and other costs. According to this study, annual costs for journal editing and operational work in 2019 were mainly under \$/€10,000, with just over a third of the total reported costs below \$/€1,000. However, it was stressed that Diamond OA journals are largely dependent on volunteers. In Latin America, in particular, it is standard practice to engage staff in voluntary publishing activities as part of post-doc researcher staff development. The reliance on the goodwill of volunteers can jeopardise the long-term sustainability of a journal and its economic viability.

Argentina has also implemented some policies and initiatives to encourage government-funded researchers to publish domestically in OA journals. For example, the National Scientific and Technical Research Council of Argentina (CONICET) considers the regional indexes from SciELO and Redalyc for academic evaluation of SSH researchers. In 2013, CONICET appointed a commission of experts in SSH, who together with the CONICET's Centre of Scientific and Technological Information (CAICYT) drafted the resolution called "Bases for the categorisation of periodical publications in the Social Sciences and Humanities". The resolution was approved by CONICET in 2014 (CONICET, 2014). According to this document, regional journals indexed in SciELO, along with journals indexed in prestigious international databases, such as WoS, Scopus, and ERIH, have the highest quality value (Level 1), while Redalyc's regional journals together with some international journals are relegated to Level 2. The CONICET's 2014 resolution represents an important attempt to encourage regional scientific publications (Vasen & Vilchis, 2017). In this light, Argentina is considered as one of the pioneers in the region (ISC, 2019).

Despite the fact that Latin America as a whole still faces the challenge of incorporating of regional indexing services in national research evaluation systems, which still rely on the traditional Impact Factor of 'mainstream' journals (UNESCO, n.d.; Becerril-García & Aguado López, 2019), the region has been included in 2021 to the DORA (Declaration on Research Assessment)'s best practices for its efforts dedicated to improve academic career assessment based on regional OA indicators (DORA, 2021). In particular, the DORA community acknowledges the collaborative efforts of the Latin American Forum on Scientific Evaluation (FOLEC) created by CLACSO. Argentina, the center of CLACSO, plays an important role in coordinating this initiative. FOLEC aims to facilitate dialogue among partner academic institutions and organisations (e.g., among them are international organisations, such as UNESCO and the International Science Council) to develop consistent research evaluation policies and practices in Latin America and the Caribbean. In April 2021, FOLEC has convened a working group in collaboration with the OLIVA Project of the National University of Cuyo (Argentina)¹⁸ and the Spanish Higher Council for Scientific Research (CSIC). By November 2022, the working group aims to publish a roadmap to research evaluation reform to guide the implementation of new policies and practices at CLACSO research member institutions.

¹⁷ <http://roarmap.eprints.org/>

¹⁸ <https://cecic.fcp.uncuyo.edu.ar/en/oliva-the-latin-american-observatory-of-research-assessment-indicators/>

3. Korea's approach to OA

3.1. Korea's OA indicators

As we can see from Table 3, Korea does not have a stable growth of OA journals, OA repositories, and OA papers as well as their total number is much smaller compared with Argentina (see Table 1). In particular, the total number of OA journals registered in DOAJ is more than as twice as small in Korea. The majority of those journals belong to scholarly societies.

More than a half of Korean OA journals registered in DOAJ (59%) are Diamond journals, while 41% are APC-based journals (Table 4). The difference in numbers of Diamond and non-Diamond journals is not large compared with the situation in Argentina (Table 2), where almost all journals are Diamond ones. There is a wide APC range in Korean OA journals (maximum is 1,890 USD per article), the charges are considerably lower than those charged by international journals, but considerably higher than in Argentine journals.

The vast majority of Korean Diamond journals are from the Medicine field, followed by SSH journals. It should be noted that, according to DOAJ data, both Diamond and non-Diamond OA journals in Korea are dominated by journals from the Medicine field; there are some SSH journals, but journals from other disciplines (e.g., Science and Engineering fields) are very rare among OA journals¹⁹. At the same time we can see that in Argentina and many other countries, domestic OA journals, Diamond journals in particular, are led by SSH journals.

Table 3. Annual growth of new domestic OA journals (DOAJ), OA repositories (OpenDOAR), and OA papers published in domestic OA journals (DOAJ)

Years	OA journals	OA repositories	OA papers
2003	1		
2004			
2005			
2006	1	1	21
2007			21
2008	1	2	
2009	1	2	
2010			
2011	1	8	
2012	2		
2013	9	2	1,092
2014	2	8	750
2015	1	5	646
2016	22		3,363
2017	20	6	8,871
2018	29		12,846
2019	28	4	6,412
2020	20	2	11,957
2021 ²⁰	5	1	
Total	143	41	45,979

¹⁹ This statement is similar to the results of the previous study (Shin, 2020).

²⁰ The 2021 data was recorded on [19 June 2021]

Table 4. Domestic OA journals by type (APC-based and Diamond), based on DOAJ data

Type of OA journals	Number and in percentage
Diamond OA journals (without APCs)	84 (59%)
APC-based OA journals	59 (41%)*
Total (2021)	143

* According to our investigation, one of these journals (Genomics & Informatics) does not apply APCs since 2019²¹.

Although there are no collected data on the annual expenses on APCs for OA publishing in domestic journals, they must not be as large as the national expenses on publishing in international SCI-level journals, which still prevails in Korea. For example, most of the research outcomes of projects funded by the National Research Foundation/NRF (main funding agency in Korea) are published in overseas SCI-level journals of large publishing houses and the number of papers published in domestic journals is very small (Joung et al., 2020). Previous studies (Kim, 2018; Jung, 2020) confirms the Korean researchers' preference of largely publishing in overseas prestigious journals guided by the Impact Factor of the journals. According to another study investigating SCIE papers in OA/hybrid journals, where correspondent author was from Korea, around 125-171 million USD was spent on APCs for publishing 73,736 articles in 2019, with the charge ranging from 1,692 to 2,312 USD per article (Kim, 2021, p.38). Finally, a remarkable evidence of Korea's bias in favour of APC-based OA publishing in international journals is the recent transformative ('read and publish) agreement with Elsevier, which the National Research Council of Science and Technology (NST) has concluded for the next three years (2021-2023) (Elsevier, 2020). It is the first transformative agreement in Korea. According to this agreement, NST consortium comprising 25 government-funded research institutes have to pay to Elsevier the agreed charges during three years. In return, the researchers get access to Elsevier ScienceDirect journals and an opportunity to publish their OA papers free of charge in those journals.

3.2. Key national OA policies and initiatives

There are two major actors leading the OA developments in Korea. The first one is the Korea Institute of Science and Technology Information (KISTI)²², which is a public research institute and a major S&T information service provider under the aegis of the Ministry of Science and ICT (MSIT). And the second one is the National Research Foundation (NRF)²³ established by MSIT and the Ministry of Education to fund research across all disciplines from SSH to the natural sciences. Among the NRF functions are also evaluation of domestic scholarly journals and registration of the accredited ones in the Korea Citation Index (KCI) database. Other players, such as library community, scholarly societies, local publishers, are seen as not very active to promote OA (Shin, 2020, p. 120).

At this moment there is no national or institutional policies that explicitly mandate or encourage OA in Korea (Seo, 2021; Kil, 2021). The exception is one institutional OA policy (Green OA) adopted by KISTI in 2018 and registered in ROARMAP²⁴. According to this policy, each KISTI researcher is required to provide an electronic copy of the published version or the final author's version of the research output (e.g., journal article) to make it available to the public in the KISTI OA repository, and the researcher shall permit KISTI to make his or her research outputs available in a non-exclusive and permanent manner based on the CC-BY-NC (Creative Commons Attribution-NonCommercial) licence. To further

²¹ <https://genominfo.org/authors/authors.php>

²² <https://www.kisti.re.kr/>

²³ <https://www.nrf.re.kr/>

²⁴ <http://roarmap.eprints.org/1948/>

support Green OA, in 2020, KISTI launched a national-level OA repository “KOAR (Korea Open Access platform for Researchers)”²⁵, which among other services provides self-archiving for both researchers and journals as well as an integrated search service for OA articles from the linked domestic and foreign journals and institutional repositories.

Even though Korea has not implemented Green OA mandates for government-funded research at the level of legislation, as it is the case in Argentina, a draft bill was prepared by KISTI in 2010-2011. At that time the OA awareness and interest among policy makers and researchers were quite low as well as there was a strong opposition from domestic commercial vendors, such as Korean Studies Information (KSI), providing online access to scholarly societies’ journal articles to individuals for a fee and to libraries through a licencing agreement (Jung, 2020). These days, when OA awareness has been greatly raised, KISTI together with MSIT prepare some amendments to the basic legal act for the national R&D system entitled “Framework Act on Science and Technology” (2001)²⁶. The amendments will include Open Science mandatory provisions, including OA and open research data.

Another potentially important step is the development of the OA policy implementation plan by NRF (“NRF OA2021”), which follows the Plan S vision (Joung et al., 2020; Yoon, 2020). In particular, according to the initial plan (which has not been implemented yet), the NRF OA policy will stipulate the funded researchers’ obligations (e.g., deposit the published articles licenced by CC-BY²⁷ in an OA repository within a certain period of time) and rights (e.g., obtaining support from the funder for APCs of OA journal articles). As soon as more domestic journals transition to OA and become more mature, NRF is considering to set gradually the mandatory provisions to incentivise the funded researchers (particularly from SSH field) to publish OA papers in domestic journals. However, at this moment, there are no dedicated policy efforts and initiatives to transform the research evaluation systems, which are still driven by the Impact Factor of international SCI-level journals and do not give enough credits for publications in high-quality domestic OA journals indexed in KCI.

In general, Korea shows not to be currently focusing on the promotion of Gold OA in a form of a Diamond publishing infrastructure. Nevertheless, there is an opinion among some local experts that instead of providing support to researchers for paying APCs for domestic publishing, it would be more reasonable to exempt researchers from such charges and better support and reinforce domestic OA journals (Joung et al., 2020, p. 274).

On a general basis, most domestic journals of scholarly societies can apply for a financial support from NRF, such as the “Academic Journal Support Project”²⁸. However, such fund is limited and up to one year; a continuous, long-term support is not secured (Joung et al., 2020, p. 273; Park, 2021). As part of the NRF OA policy implementation plan, it is discussed to target in the future only OA journals or journals which are in transition to OA and provide them with more prolonged support based on the evaluation of their performance (Joung et al., 2020, p. 274). In addition to financial support, domestic journals need technical and administrative support to flip to OA model. In this light, KISTI cooperates with scholarly societies to help journals with DOI registration, guide them on how to be indexed in DOAJ, provide them online peer review system “ACOMS”²⁹ and XML-based OA journal publishing platform “KPubS”³⁰, etc. (Jung, 2020, p. 18-19). Besides, in order to properly develop and operationalise OA publishing model in the Korean context, academic and research libraries should take more active role to provide scholars with consultation and administrative support services related to OA driven scholarly communication and CCL (Creative Commons Licences) (Shin, 2020).

²⁵ <https://www.koar.kr/>

²⁶ 과학기술기본법, <https://www.law.go.kr/법령/과학기술기본법>

²⁷ It should be noted that at the moment most of the domestic Korean OA journals do not publish papers with CCL (Creative Commons Licences) (Joung et al., 2020, p. 277).

²⁸ https://www.nrf.re.kr/biz/info/info/view?biz_no=5

²⁹ <https://acoms.kisti.re.kr/>

³⁰ <http://kpubs.org/>

4. Concluding remarks

Our study shows that two countries, Argentina and Korea, have very different approaches to OA development (the former is driven by Diamond OA, while the latter rather adheres to APC-based Gold OA). The key differences between the countries are summarised in Table 5.

Table 5. Key features of OA scholarly publishing environment in Argentina and Korea

	Argentina	Korea
Strengths	<ol style="list-style-type: none"> 1. A long tradition of regional discipline repositories 2. A long tradition of collaborative, cross-regional initiatives and networking (e.g., SciELO, La Referencia) 3. Active role and support of international organisations (e.g., UNESCO, CLACSO) 4. High OA awareness among academic communities and government agencies 5. National OA mandate for government-funded research (law) 6. In most cases, no-APC for domestic OA publishing 7. Considerable efforts in the development of indexing services, editorial proficiency, etc. for OA journals 8. Considerable efforts in leading national and regional initiatives for improving research evaluation based on regional OA indexes 	<ol style="list-style-type: none"> 1. High GERD(Gross domestic expenditure on R&D)/GDP ratio 2. Mature ICT infrastructure 3. Ability and willingness to support researchers using OA publishing routes with APCs
Remaining challenges	<ol style="list-style-type: none"> 1. Uncertainty of long-term sustainability of OA publishing infrastructure, which greatly relies on the government funding and goodwill of volunteers 2. Research evaluation systems still depend on mainstream international databases, such as WoS 	<ol style="list-style-type: none"> 1. Lack of sufficient OA awareness among different stakeholders (except KISTI and NRF having a leading role) 2. Strong position of domestic commercial e-journal database vendors (e.g., KSI) 3. Lack of national or institutional OA mandates 4. Low adoption of CCL by domestic journals 5. Large bias towards APC-based OA publishing, especially in international SCI-level journals (substantial expenses) 6. Not sufficient support for domestic OA journals or journals which are in transition to OA 7. Lack of dedicated policy efforts to transform research evaluation systems driven by the Impact Factor

We argue in this paper that Latin America in general, but Argentina in particular, can offer a role model of Diamond OA and possible cooperation with other countries that are at a similar stage of development. We argue that APC-based Gold OA, which Korea is trying to follow, will prove to be a business model with a limited lifetime, and that, following the COVID pandemic, there will be strong pressure to improve the domestic scholarly publishing environment by adopting the Diamond OA model. We do not argue that this is a perfect model; its short and long term costs, and how these are funded, as well as long term viability in terms of the people who operate such journals, need to be evaluated. However, we argue that this is the direction of near-term travel for scholarly publishing. Where Argentina leads, other countries should follow.

Despite the fact that the Asian countries (particularly SLA's Asian countries³¹) are very diverse in terms of Gross Domestic Product, levels of sophistication of ICT infrastructure, volume of research outputs, and numbers of active researchers and librarians, they still have some common features and face similar challenges. These countries still cannot compete with the Western world ('Global North') in terms of the visibility of research outputs, a problem for Latin American countries as well. The initial idea behind the OA movement *per se* was to reduce science and technology gaps between nations, with the potential to especially benefit less-developed or non-Western countries. Taking all this into consideration, we propose below several recommendations for possible cooperation between Asian countries to increase the visibility of research in that region through the Diamond OA route.

One of the recommendations is to establish a Diamond OA Capacity Centre for the Asian region. The inspiration for this can be found in the recent study commissioned by cOAlition S (Becerril, 2021, p. 22). The Centre could be a part of the SLA Asian Chapter with a responsible institution located in an Asian country that has a high commitment and good performance in adopting OA, in general, and Diamond OA in particular. Such a Diamond OA Capacity Centre would foster partnerships and joint projects in the region and beyond as well as it would build and maintain the informal communities of practice (CoP) allowing them to work together, for example, in areas such as CCL, international and regional indexing, professionalisation of editorial and peer review workflows, journal content preservation. The Centre would also provide consultancy services, training, workshops adaptable to different Asian countries, communities, taking into account disciplines and languages. A special focus could be given to supply support to smaller Diamond OA journals.

In addition to regular activities, the Diamond OA Capacity Centre would be responsible for organising annual regional forums with major stakeholders (e.g., ministries of science, research councils, library communities, academic institutions, scholarly societies, journals, technology/platform providers, international bodies) aiming to discuss and elaborate the quality standards for Diamond OA journals, their co-funding models, approaches of incentivising researchers to publish in Diamond OA journals based on the changes in national research career evaluation systems, etc. It can be organised in a similar way as the Latin America's FOLEC forum mentioned in Chapter 2.

The Diamond OA Capacity Centre would also try to collaborate with the Latin American mature OA publishing platforms, such as SciELO. In particular, collaboration can be in a form of indexing of Diamond OA journals from Asian countries in the SciELO Citation Index³². The latter is integrated into WoS and is included, for example, by the Research Council of Argentina (CONICET) in the national journal classification system for academic evaluation in the field of SSH being at the same level as WoS and Scopus indexes. The SciELO Citation Index might help Asian OA journals to improve their quality and to connect the research outcomes to the broader research landscape.

³¹ India, Indonesia, Kazakhstan, Malaysia, Nepal, Pakistan, Philippines, Singapore, South Korea, Sri Lanka, Taiwan, Thailand, Vietnam

³² Despite the fact the primary focus of the SciELO platform is OA journal collections from Ibero-America (Spanish- and Portuguese-speaking countries), it also includes journal collections from South Africa.

Many consider that research outputs which involve international collaboration have a much greater impact and visibility than articles which only have authors from one country. However, many Asian countries, including China, Japan, Korea and India, still have a relatively low level of international collaboration (OECD, 2017, p. 70; Adams et al., 2019, p. 4-5). Thus, the Centre could also have a role in encouraging international research collaboration within and beyond the Asian region through co-authoring articles in Diamond OA journals. Possible functions of such a Centre are summarised in Figure 2 below.



Figure 2. A possible set of activities for the proposed Diamond OA Capacity Centre for the Asian region

References:

- Adams, J., Rogers, G., & Szomszor, M. (2019). The Annual G20 Scorecard-Research Performance 2019 (Report from the Institute for Scientific Information, Clarivate Analytics). Clarivate. https://clarivate.com/webofsciencegroup/wp-content/uploads/sites/2/dlm_uploads/2019/07/WS_G20-GRR_4.pdf.
- Alperin, J. P., Babini, D., & Fischman, G. (Eds.) (2014). Open access indicators and scholarly communications in Latin America. Buenos Aires: CLACSO. <https://wp.scielo.org/wp-content/uploads/PACKER-A.L.-The-Metrics.pdf>.
- Becerril, A., Bosman, J., Bjørnshauge, L., Frantsvåg, J., Kramer, B., Langlais, P., ... Torny, D. (2021). OA Diamond Journals Study. Part 2: Recommendations (Report of the study supported by Science Europe and cOAlition S). Zenodo. <http://doi.org/10.5281/zenodo.4562790>.
- Becerril-García, A. (2019). "AmeliCA vs Plan S: Same target, two different strategies to achieve Open Access." AmeliCA. <http://amelica.org/index.php/en/2019/02/10/amelica-vs-plan-s-same-target-two-different-strategies-to-achieve-open-access/>.
- Becerril-García, A. & Aguado López, E. (2019). The End of a Centralized Open Access Project and the Beginning of a Community-Based Sustainable Infrastructure for Latin America. In Proceedings of the 22nd International Conference on Electronic Publishing (ELPUB) 2018 (Revised Selected Papers, p. 41). OpenEdition Press. <https://doi.org/10.4000/proceedings.elpub.2018.27>.
- Bosman, J., Frantsvåg, J.E., Kramer, B., Langlais, P.C., & Proudman, V. (2021). OA Diamond Journals Study. Part 1: Findings (Report of the study supported by Science Europe and cOAlition S). Zenodo. <http://doi.org/10.5281/zenodo.4558704>.
- Bravo-Marchant, M. & Cabezas-Bullemore, A. (2020). Primera Encuesta Regional sobre Negociación y Contratación de Recursos de Información 2019. LA Referencia. http://www.lareferencia.info/images/prensa/Primera_Encuesta_EUA_en_America_Latina_y

_El_Caribe_2019.pdf.

Budapest Open Access Initiative (2002). <https://www.budapestopenaccessinitiative.org/read>.

CLACSO (n.d.). “Campaña CLACSO de Acceso Abierto.” CLACSO Virtual Libraries. <http://www.biblioteca.clacso.edu.ar/accesoabierto/>.

cOAlition S (2018). “Plan S Part I: The Plan S Principles.” Plan S. <https://www.coalition-s.org/addendum-to-the-coalition-s-guidance-on-the-implementation-of-plan-s/principles-and-implementation/>.

CONICET/Consejo Nacional de Investigaciones Científicas y Técnicas de Argentina (2014). Bases para la Categorización de Publicaciones Periódicas en Ciencias Sociales y Humanidades, Resolución 2249/14. CAICYT-CONICET. http://www.caicyt-conicet.gov.ar/sitio/wp-content/uploads/2021/05/Categorizaci%C3%B3n-CSH_RD-20140625-2249.pdf.

Debat, H. J. & Babini, D. (2019). Plan S in Latin America: A precautionary note. *PeerJ Preprints*, 7, e27834v2. <https://doi.org/10.7287/peerj.preprints.27834v2>.

DORA (2021). “Case Study: The Latin American Forum for Research Assessment.” DORA. <https://sfedora.org/case-study/the-latin-american-forum-for-research-assessment/>.

Elsevier (2020). “National Research Council of Science & Technology and Elsevier sign pilot agreement to support open access publishing alongside continued research access in South Korea.” Elsevier. <https://www.elsevier.com/about/press-releases/corporate/nst-and-elsevier-sign-pilot-agreement-to-support-open-access-publishing-alongside-continued-research-access-in-south-korea2>.

Eve, M. P. (2014). *Open access and the humanities*. Cambridge: Cambridge University Press. <https://doi.org/10.1017/CBO9781316161012>.

Fuchs, C. & Sandoval, M. (2013). The diamond model of open access publishing: Why policy makers, scholars, universities, libraries, labour unions and the publishing world need to take non-commercial, non-profit open access serious. *TripleC: Communication, Capitalism & Critique*, 11(2), 428-443. <https://doi.org/10.31269/triplec.v11i2.502>.

Ghent University (2021). “Open Access colours: gold, green, hybrid and more.” (Re)search tips. <https://researchtips.ugent.be/en/tips/00000461/>.

Gómez Izquierdo, D. (2016). Argentinean National Antarctic Data Centre (SCDAM 6 Meeting). SlidePlayer. <https://slideplayer.com/slide/9103963/>.

Guzik, T. J. & Ahluwalia, A. (2019). Plan S: in Service or Disservice to Society? *British Journal of Pharmacology*, 176(6), 753-756. <https://doi.org/10.1111/bph.14590>.

International Science Council/ISC (2019). “Plan S and Open Access in Latin America: Interview with Dominique Babini.” International Science Council. <https://council.science/current/blog/plan-s-and-open-access-interview-with-dominique-babini/>.

Johnson, R., Fosci, M., Chiarelli, A., Pinfield, S., & Jubb, M. (2017). Towards a competitive and sustainable OA market in Europe - A study of the open access market and policy environment (Report). Zenodo. <http://doi.org/10.5281/zenodo.401029>.

Joung, K., Lee, J., Chung, E., & Choi, S. (2020). 한국연구재단 오픈액세스 정책 실행방안 연구. *정보관리학회지*, 37(4), 255-286. <https://doi.org/10.3743/KOSIM.2020.37.4.255>.

Jung, Y. (2020). Open Access Developments in Korea (supported by KISTI). Korea-EU Research Centre. <https://k-erc.eu/wp-content/uploads/2020/12/KOR-KISTI.pdf>.

Kil, A. (2021). “코로나 백신 ‘지식 공유’ 산물... 정부R&D 논문 공개해야.” HelloDD. <https://www.hellodd.com/news/articleView.html?idxno=93163>.

Kim, H. (2018). 국내 연구자의 오픈액세스 논문 출판에 대한 인식 조사. 한국도서관.정보학회 동계 학술발표회, 2018(2), 183-189.

Kim, H. (2021). 구독 학술지 문제와 오픈액세스 전환. In *Proceedings of the National Open Access Policy Forum (국가 오픈액세스 정책 포럼)*, 2021. 6. 17, Seoul (pp. 39-61). <https://www.kci.go.kr/kciportal/ss-mng/bbs/bbsNoticeView.kci?boardBean.boarSeq=00000000601&boardBean.bullScriSeq=000000029269>.

Miguel, S., Chinchilla-Rodriguez, Z., & de Moya-Anegón, F. (2011). Open access and Scopus: A new approach to scientific visibility from the standpoint of access. *Journal of the American society for information science and technology*, 62(6), 1130-1145. <https://doi.org/10.1002/asi.21532>.

Minniti, S., Santoro, V., & Belli, S. (2018). Mapping the development of open access in Latin

America and Caribbean countries. An analysis of web of science core collection and SciELO citation index (2005–2017). *Scientometrics*, 117(3), 1905-1930. <https://doi.org/10.1007/s11192-018-2950-0>.

Moore, S. A. (2020). Revisiting “the 1990s debutante”: Scholar-led publishing and the prehistory of the open access movement. *Journal of the Association for Information Science and Technology*, 71(7), 856-866. <https://doi.org/10.1002/asi.24306>.

Morrison, H. (2018). “DOAJ APC information as of Jan 31, 2018.” *Sustaining the Knowledge Commons*. <https://sustainingknowledgecommons.org/2018/02/06/doaj-apc-information-as-of-jan-31-2018/>.

OECD (2017). *OECD Science, Technology and Industry Scoreboard 2017: The digital transformation*. Paris: OECD Publishing. <https://doi.org/10.1787/9789264268821-en>.

Park, S. (2021). 국내학술지 오픈액세스 지원방안 (인문사회과학 학술지를 중심으로). In *Proceedings of the National Open Access Policy Forum (국가 오픈액세스 정책 포럼)*, 2021. 6. 17, Seoul (pp. 65-78). <https://www.kci.go.kr/kciportal/ss-mng/bbs/bbsNoticeView.kci?boardBean.boarSeq=00000000601&boardBean.bullScriSeq=00000029269>.

Repositorios digitales institucionales de acceso abierto, Ley 26.899 (2013). *InfoLEG*. <http://servicios.infoleg.gob.ar/infolegInternet/anexos/220000-224999/223459/norma.htm>.

Robinson-Garcia, N., Costas, R., & van Leeuwen, T. N. (2020). Open Access uptake by universities worldwide. *PeerJ*, 8, e9410. <http://doi.org/10.7717/peerj.9410>.

Scholz, D. (2015). “DOAJ, Please Guide Us to Good Examples Showing APC” [comment to an online post]. *DOAJ*. <https://blog.doaj.org/2015/02/10/greater-visibility-to-apcs-amount-currency-url/>.

Seo, J. (2021). 국가 오픈액세스를 위한 도전과 과제. In *Proceedings of the National Open Access Policy Forum (국가 오픈액세스 정책 포럼)*, 2021. 6. 17, Seoul (pp. 19-37). <https://www.kci.go.kr/kciportal/ss-mng/bbs/bbsNoticeView.kci?boardBean.boarSeq=00000000601&boardBean.bullScriSeq=00000029269>.

Shin, E. (2020). Plan S 정책에 대비한 오픈액세스 출판의 추진 및 과제. *한국비블리아 학회지:한국비블리아*, 31(3), 101–124. <https://doi.org/10.14699/KBIBLIA.2020.31.3.101>.

Suber, P. (2003). *The Taxpayer Argument for Open Access*. *SPARC Open Access Newsletter*, 65. <http://nrs.harvard.edu/urn-3:HUL.InstRepos:4725013>.

Suber, P. (2012). *Open access*. Cambridge, Mass: MIT Press. <http://nrs.harvard.edu/urn-3:HUL.InstRepos:10752204>.

UNESCO (n.d.). “Global Open Access Portal. Latin America and the Caribbean.” UNESCO. <http://www.unesco.org/new/en/communication-and-information/portals-and-platforms/goap/access-by-region/latin-america-and-the-caribbean>.

Vasen, F. & Vilchis, I. L. (2017). Sistemas nacionales de clasificación de revistas científicas en América Latina: tendencias recientes e implicaciones para la evaluación académica en ciencias sociales. *Revista mexicana de ciencias políticas y sociales*, 62(231), 199-228. <https://www.redalyc.org/articulo.oa?id=42152785008>.

Yoon, J., Lee, E., Chung, K., Kim, I., & Choi, H. (2020). 한국연구재단 오픈액세스 정책 수립에 관한 연구. 한국연구재단.

Zhao, X., Borges, L., & Morrison, H. (2021). “Some limitations of DOAJ metadata for research purposes.” *Sustaining the Knowledge Commons*. <https://sustainingknowledgecommons.org/2021/02/10/some-limitations-of-doaj-metadata-for-research-purposes/>.