THE BENEFITS OF OPEN ACCESS (OA) are significant for all participants in the process of scientific communication. One of the fundamental premises of this movement is to ensure that all scientific knowledge produced is part of the universal commons (Gómez & Bongiovani, 2012). However, a certain resistance to change by researchers in the practices of scientific communication has been noted. Despite the difficulties, the movement has achieved significant progress in most countries, especially in Latin America, where OA initiatives have been extensively promoted.

The variety of OA indices and portals to digital journals in the region, especially Latindex, SciELO, and RedALyC, provide an outstanding portrayal of this situation. At the same time, they ensure the criteria for evaluating those journals, helping the region support the growth of its publications, especially Open Access ones. They are also complemented by the use of the Open Journal System (OJS) platform for managing and publishing journals and journal portals, managed, in most cases, from universities (Alperin, Fischman, & Willinsky, 2008). The influence of these initiatives promotes and socializes the OA philosophy in the academic and scientific fields in the region.
However, despite these initiatives and systems clearly aligned with the OA movement, there is still confusion and ignorance about the meaning of OA, its implications for the region, and the potential benefits to researchers. In order to understand the challenges facing the OA movement in the region, this study investigated the knowledge, opinions, and attitudes about OA in three of the Latin American countries with the highest scientific production.¹

RESEARCHERS' OPINIONS AND ATTITUDES

Our study is not the first to attempt to explore this issue. A large-scale study on opinions and attitudes of 4,000 senior researchers from 97 countries clearly indicated a need to sensitize authors about the OA publishing system. In particular, it was found that the level of knowledge about OA was low, with 82% of authors saying they did not know ‘anything’ or did know only ‘a little’ about OA (Rowlands, Nicholas & Huntingdon, 2004). However, in the same year, Swan and Brown (2004) compared the level of knowledge and attitudes about the OA model among authors publishing in this mode and those who did not and found that almost two thirds of those who had not published in OA were familiar with the concept. In the early years of the OA movement, these studies, apparently contradictory, were the main source of information on the OA's model of knowledge dissemination. The study of Swan and Brown (2004), supplemented by those of Cooning and Younce (2009) and Mann, von Walter, Hess, and Wigand (2009) helped us to understand that, as the OA model was becoming known, confusion about the relationship between OA and the quality of the journals was also being generated.

To understand how OA is seen in relation to academic careers (and therefore to researchers' evaluation systems), Cooning and Younce (2009) surveyed more than 300 Social Sciences and Humanities researchers who publish in OA journals, according to the DOAJ database (Directory of Open Access Journals). They found

¹ The chapter is based on the results of the project ‘Open Access and Academic Evaluation. Knowledge and opinions of assessors of research professors’ careers in relation to Open Access journals (OA)’, conducted by a team of researchers from universities that are headquarters of the CLACSO Network member centres: Paola C. Bongiovani and Nora Moscoloni of the National University of Rosario (UNR), Carolina De Volder, from the University of Buenos Aires (UBA), Argentina; Sely M. de Souza Costa and Fernando Lima C. Leite from the University of Brasilia (UNB), Brazil; Teresa Rodriguez from the University of Guadalajara (UDG), Mexico; and Nancy D. Gómez from the Carlos III University of Madrid, Spain. http://accesoabier-toyevaluacion.wordpress.com/acerca-de/.
that peer review and the prestige of the journals — not the journals' access model — were still the factors that drive the decision on where to publish. However, there is evidence that up to 60% of researchers believe that OA journals are low quality (Mann et al., 2009) and therefore, publishing in said journals could jeopardize the positive assessment of their publications and the possibilities of obtaining funding for new research.

Of course, opinions and knowledge about OA are constantly changing. Interest about the views on OA over time led Xia (2010) to analyze previous studies (1990 to 2008) in a time series. He found that researchers are increasingly knowledgeable about OA journals but still worry about the low status and lack of peer review of these journals (something that is not substantiated in reality). The study identified that researchers fear their careers could be adversely affected if they publish in OA journals.

This opinion does not seem to be completely wrong, or at least it is not in disagreement with the views of researchers from the studies conducted to date (Hurrell & Meijer-Kline, 2011). In their review of the literature, Hurrell and Meijer-Kline (2011) note that according to studies about researchers' opinions (Andersen & Trinkle, 2004; Coonin & Younce, 2010; Harley, Earl-Novell, Arter, Lawrence & King, 2007; Mann et al., 2009; Nowick, 2008; Swan & Brown, 2004; University of California Office of Scholarly Communication, 2007; Xia, 2010), OA publications have a slightly negative or neutral effect in advancing researchers' careers. However, there were not any specific studies up to that moment, and the authors posited the need to conduct research on the knowledge and attitudes regarding OA publications of those researchers on evaluation committees assessing scientific-academic careers.

In 2010, the SOAP project (Study of Open Access Publishing) provided an opportunity to study researchers' attitudes on OA publications worldwide. Of the 53,890 scientists who participated in the survey, responses from 38,358 active researchers from various disciplines from 162 countries (Dallmeier-Tiessen et al., 2011) were analyzed. The results of the study revealed that, at the beginning of this decade, attitudes about OA were generally positive. For 89% of researchers, publishing in OA was considered beneficial to their research areas, the percentage being higher in Social Sciences and Humanities than in other fields. Among the main reasons are that OA: improves the way the scientific community works (36%), provides a better financial-economic model for scientific communication (20%), and is a relevant alternative to the achievement of the common good (20%). In addition, 71% of researchers said that
they had published in OA in the last five years, and from the remaining 29%, nearly half expressed that they have no reason not to. However, SOAP's study does not provide only positive remarks about the OA movement: 39% and 30% respectively identified the cost per publication and the low quality of the journals as major barriers to OA (Dallmeier-Tiessen et al., 2011).

Some studies about the views and practices of researchers in relation to OA also began to be carried out in Latin American countries. Gómez et al. (2008) showed that, in Chile, the level of knowledge about OA journals is between average (49%) and high (31%); however, from the latter group only 18% publishes in them, citing that the universe of journals in which they are interested in publishing their work is limited, and most are not OA. Sánchez Tarragó and Fernández Molina (2008) in a survey of Cuban researchers found similar results.

In Argentina, in a study based on responses from researchers who participated in the 2010 global survey (as part of SOAP), 73% of researchers say they know about the existence of OA journals in their respective fields, with the higher percentage of positive responses in Agriculture and Life Sciences (84%) and Medicine (81%) than in Physics and Astronomy (68%) and Social Sciences and Humanities (61%). Furthermore, 94% of researchers say that the publication of articles in OA periodicals would be beneficial to their research field, with an almost equal spread across the four fields (Bongiovani, Gómez & Miguel, 2012).

Discussions on the opinions of OA in the region are not in vain. Not only there is a considerable number of OA journals in existence (Miguel, 2011), but an additional potential has also been identified to deliver a significant percentage of its production in the open modality: 27% by the golden road and 43% by the green road, in the case of Argentina (Miguel et al., 2012). In fact, in Social Sciences and Humanities, 35% of the journals chosen by Argentinean researchers in which to publish are already OA.

In this scenario, there are indications that OA has begun to take root in the region in a positive way. A study by Delgado Troncoso et al. (2014) found that two of the main elements that exert the most influence when choosing an article to read was that the article be Open Access and that it be published in a prestigious journal in the discipline. Among the main factors affecting researchers' choices of a magazine in which to publish were the international recognition of the journal within their discipline, the dissemination that the journal could provide for their articles, the influence it has in the improvement of their academic careers, and whether or not it
charges authors for publishing. ‘International recognition’ include combinations of national, regional and global indexing; the presence of the journals in databases; and each journal Impact Factor. However, Open Access still did not appear among the main reasons to choose a journal in which to publish.

This is also evident in another Latin American study by Sánchez Tarragó, Caballero Rivero, Domínguez and Molina (2014). In this case, the authors find positive perceptions regarding publishing in OA, but conclude that researchers are paying more attention to the prestige of the journal and the Impact Factor, to the detriment of other considerations such as an Open Access policy or whether the journal is free.

However, studies regarding knowledge and opinions about OA in Latin America are still limited. Given the importance of OA in the region and the role of OA initiatives (Chapter 2), it was essential to study the regional situation in greater detail. For that reason, a survey was conducted with researchers in their role as evaluators, in the three countries with the highest scientific production in Latin America (Babini, 2011): Argentina, Brazil, and Mexico.

CASE STUDIES: ARGENTINA, BRAZIL AND MEXICO
The main objective of the study, the results of which are presented here, was to ascertain the knowledge, opinions, and attitudes about publishing in OA journals of researchers on evaluation committees that assess the scientific-academic careers of their peers in the area of Social Sciences in Argentina, Brazil, and Mexico.

A survey was conducted of a sample of researchers who were members of committees evaluating Social Science research in Argentina, Brazil and Mexico. In the case of Argentina, the researcher sample was determined using the public Bank of Evaluators available on the website of the Ministry of Education. For Brazil, the public listings of researchers who sit on Area Committees were consulted on the websites of CAPES and CNPq. Finally, in the case of Mexico, the sample of researchers was determined by consulting the public listings of the evaluation committees of the National Research System (Sistema Nacional de Investigadores) for the Social Sciences area on the CONACYT website. The data collection method was managed through the online survey manager, Survey Monkey. A statistical analysis of the survey results was performed using frequency tables and cross tabulations, complementing with the statistical program SPSS for statistical significance calculations, using Chi-square tests.
In Argentina, public and private universities are responsible for higher education. In these institutions, full- or part-time professors, generally, carry out research as a complement to teaching.

In terms of public policies in science and technology, in Argentina, the Incentive Program for Research Professors at the National Universities, created in 1993, stands out. The objective of the program is to encourage the integration of research and development activities into teaching at national universities, contributing to the promotion of science technology, and transfer of new knowledge. According to data from the Ministry of Education, currently, 28% of the teaching staff of national universities conducts research within the program. Peers evaluate professors who research and who aspire to obtain the rank of research professor. The Bank of Evaluators is organized by discipline and is composed of research professors, category I or II, or with an equivalent background. The production in scientific research and technological development is one of the aspects evaluated under the program, considering the rank as in the evaluation of reports of research results. In every case, the members of the Bank of Evaluators Incentive Program for Research Professors are the more senior researchers with the most experience in their subject areas.

Meanwhile, research in Brazil is conducted mainly by researchers involved in graduate programs offered by institutions of higher education (universities, particularly the federal ones) and less so in research institutes. Since the implementation of the postgraduate model in the late 1960s, the Federal Government has invested in training at the graduate level, through grants from the Training Coordination of Higher Education Personnel (Coordenação de aperfeiçoamento de pessoal de nível superior, CAPES) of the Ministry of Education and the National Council for Scientific and Technological Development (Conselho Nacional de Desenvolvimento Científico e Tecnológico, CNPq) of the Ministry of Science.

Considering that most Brazilian scientific activities are carried out in relation to postgraduate programs, CAPES has significant influence, as it is responsible for the periodic evaluation of the programs. Assessment procedures are very rigorous, a factor in the success obtained by postgraduate activities in Brazil. Evaluation criteria include the assessment of infrastructure, training of research professors, scientific productivity, the ability to train professors and doctors, among others. The CNPq, through area advisory committees, assesses the productivity of Brazilian researchers. Annually, there are project selection processes through nationwide calls. The evaluation criteria of scientific production
and promotion vary, depending on the disciplines. Area committees, both from CAPES and CNPq, constantly evaluate the research activity in Brazil, and they are formed by leading researchers in each field of knowledge. These committees are renewed every two years, and the scientific community, whose appointments are approved by CAPES and CNPq, as appropriate, elects their members.

In Mexico, the study was conducted with the participation of researcher members of the National System of Researchers of the National Science and Technology Council (Consejo Nacional de Ciencia y Tecnología, CONACYT). CONACYT is a public agency of the Mexican federal government dedicated to promoting the development of science and technology. The National System of Researchers (SNI) was created in 1984 to promote the development of research activities to strengthen their quality, performance and efficiency. It works through collegiate bodies consisting of researchers from the highest scientific, technological, and humanities levels. Their evaluations are the result of collective discussions among peers and take into account the regulatory system, as well as the researchers' academic and institutional backgrounds, and their scientific and technological outputs. It recognizes Mexican researchers by peer evaluation, appointing them as National Researchers, which signifies the quality and prestige of their scientific contributions. It also assigns economic incentives that vary according to the level achieved (candidate, level 1, 2, 3 and emeritus).

RESULTS

KNOWLEDGE ABOUT OPEN ACCESS

Social Science researchers who are members of evaluation committees in Argentina, Brazil and Mexico, do have knowledge of Latin American OA initiatives. In Brazil, 70% of researchers have knowledge of OA Initiatives, as well as 61% in Mexico and 55% in Argentina. It is worth noting that both Brazil and Mexico are the countries of origin of the three major initiatives in the region (Latindex, SciELO and RedALyC). This 'local' effect leads the three initiatives to be best known in their home countries than in any other (Latindex and RedALyC in Mexico and SciELO in Brazil).

SciELO is the most recognized in Brazil (by 98% of respondents), but it is also recognized in Argentina and Mexico (80% and 66%, respectively). In Mexico, RedALyC is the most recognized, with 92% (in Argentina and Brazil by 79% and 50 %, respectively).

2 http://www.conacyt.gob.mx/.
Latindex is not far behind, recognized by 77% of respondents in Argentina, 70% in Mexico, and 39% in Brazil (Figure 1).

**Figure 1**
Knowledge about Open Access Initiatives in Argentina, Brazil and Mexico

In all three countries, the age of the researchers is associated with the knowledge of OA initiatives, with the youngest ones exhibiting a higher percentage of knowledge of the initiatives (Figure 2), perhaps indicative of the role of Open Access in future generations of researchers.
Figure 2
Knowledge about Open Access Initiatives by Age of Researchers
(Argentina n= 448, Brazil n=672 and Mexico n=286)
OPINIONS ON OPEN ACCESS

According to our survey, the majority of researchers do not yet consider publishing in OA to have a positive value in their assessments as researchers. In the best case, 47% of researchers in Brazil considered that publishing in OA journals would be viewed positively (36% in Mexico and 35% in Argentina). Conversely, few argue that this claim is false (15% of researchers from Brazil, 16% from Argentina and 34% from Mexico).

What is clear is that some of the myths about OA are disappearing. In a majority of cases, for the three countries, researchers correctly identified that OA journals are usually peer reviewed (78% in Brazil, 70% in Mexico, and 66% in Argentina). Similar percentages recognize that OA journals typically reach more readers than subscription magazines (74% in Brazil, 66% in Argentina, and 66% in Mexico).

However, there is still confusion and a lack of knowledge about some important issues of OA, among them, a key part of its definition. In Argentina, for example, only 59% believe that OA means free access to all readers (72% in Brazil and 70% in Mexico).

The opinions about the prestige of OA journals also indicate lack of awareness. For example, while 51% of researchers in Brazil consider that OA journals are no less prestigious than subscription journals, 12% think they are, and 43% did not know. Regarding Impact Factor, 50% of researchers in Brazil think it is false that OA journals have a lower Impact Factor, while 28% in Mexico think they do have a lower Impact Factor. Only between 21% and 32% of researchers say that articles published in OA journals are cited more frequently than those published in subscription journals (Figure 3).
As with the knowledge about OA initiatives, slight differences of opinion are observed in the three countries according to age range. However, it is noted that younger researchers generally report more negative opinions about the prestige or impact of OA journals.

**Figure 4**  
Open Access Articles Published in the Last 5 Years, by Age  
(Argentina n=401, Brazil n=638 and Mexico n=263)
Despite the myths, misinformation, and ambivalence about OA, a large majority of researcher-evaluators from the three countries have published in OA journals in the last five years. In Argentina, it is 65% of the researcher-evaluators; in Brazil, 83%; and in Mexico, 70%. Again, in Argentina and Brazil, differences by age are observed: younger researchers tend to publish more in OA than older researchers (Figure 4). To better understand this phenomenon, responses about the most important factors affecting the choice of where to publish articles were analyzed.

**FACTORS TO EVALUATE JOURNALS**

Two series of questions were posed, relating to journal evaluation. The first concerns how researchers decide where to publish their articles, the second to the way they evaluate journals where their peers have published.

When choosing where to publish articles, factors include whether the journal is Open Access or Latin American, but these are not among the aspects highlighted by researchers. First, a large majority of respondents (86% in Brazil, and 80% in Argentina and Mexico) considers the prestige and quality of the journal as important. Second, the relevance of the journal for the community and/or region was regarded as important by more than 70% of researchers in the three countries.

As when choosing the journal in which to publish, the OA status of a journal was considered only a minor aspect in evaluating their peers and was even considered an unimportant factor in a number of cases (39% in Mexico, 33% in Brazil, and 31% in Argentina).

Without a doubt, that a journal is peer-reviewed has remained the most important factor when considering the work of others (about 85% of researchers in each country emphasized it as very important). With national differences, the value of this assessment appears to be linked to the reputation of the journal's publisher: researchers point to the publisher's prestige as being a very important factor when evaluating (70% in Mexico, 61% in Argentina, and 43% in Brazil).

The indexing of the journal in different databases is considered a very important factor at the time of evaluation for approximately half of the researchers in the three countries. Here again, differences are noted in the recognition and valuing of OA initiatives. It is emphasized that in the case of researchers from Argentina and Brazil, it is more important to be indexed in some of the regional databases (Latindex, SciELO) than in the Web of Science. RedALyC was not considered in the question (Figures 5a-5c).
Figure 5a
The Most Important Factors to Evaluate Publications
Argentina n=398)
Figure 5b
The Most Important Factors to Evaluate Publications
(Brazil n=640)
Figure 5c
The Most Important Factors to Evaluate Publications
(Mexico n=262)
CONCLUSIONS

Latin America is moving forward with a firm step towards OA, but there are still major challenges for this endeavor to strengthen. The results presented here are encouraging. Researchers surveyed show an extensive knowledge of OA initiatives in the region, while also publishing in OA journals, especially among the new generations of researchers. This would lead us to think that over time, and with continuing OA initiatives and policies in the region, widespread knowledge of OA would likely be reached in the not too distant future.

One hypothesis is that the very success of OA in the region, evidenced by the high percentage of regional OA journals, has created in the minds of researchers an association between the OA model and local journals, which are usually perceived as being of lower quality because they are always being compared with the so-called ‘mainstream’ journals. In this sense, the results of the survey could be seen as evidence that OA has become the ‘de facto’ model of the region.

On the other hand, there is evidence of an abiding lack of understanding about what OA means. A number of researchers do not yet understand that the definition of OA implies that the full text of a work is freely available on the web. In turn, editors of the journals involved in OA initiatives seem not to understand the full definition either. Furnival and Miranda de Almeida (2014) conducted a study on copyright policies of journals in SciELO Brazil. They found journals that, while declaring to be OA and being indexed in the DOAJ, adopt as their policy to require researchers to cede their author rights, a practice that means that the authors themselves suffer restrictions on the freedom to self-archive their articles in an institutional repository, among other constraints.

Despite these confusions, it is worth mention that very strong networks have been created in Latin America to make OA possible, not only through the initiatives mentioned here, such as SciELO and RedALyC, but via La Referencia. Which is a project encompassing nine Latin American countries with the key objective of sharing and giving visibility to the scientific output of institutions of higher education, through institutional repositories. Major legislative advances in favor of OA to scientific information through digital repositories support this initiative.

Legislation has been passed in Peru, Argentina and Mexico. Of these regulations, the law from Argentina is the strongest, in terms of

\[\text{3 http://roarmap.eprints.org/984/1/1188_Sustitutoria_27MAR2013.pdf.}
\[\text{4 http://www.senado.gov.ar/parlamentario/parlamentaria/317437/downloadPdf.}
\[\text{5 http://www.dof.gob.mx/nota_detalle.php?codigo=5345503&fecha=20/05/2014.}

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establishing responsibilities for each actor involved in the processes of scientific research, in providing Open Access to its scientific production and research data (Bongiovani & Nakano, 2011). Curiously, Brazil's bill has not yet been approved, despite having been the first bill of Open Access in 2007.

Seen this way, Latin America has made tremendous strides in promoting OA but still has a long way to go. One of the main challenges is to transform the work culture of researchers and consumers of scientific articles. The responses analyzed in the study presented indicate that the OA model for journals — despite being adopted and accepted, and having even become law in many countries — is still less relevant for researchers when they publish and evaluate their peers. However, this result has to be seen in the context of the confusion that exists around OA, since the same researchers surveyed report that to be indexed in SciELO, a portal that only publishes OA journals, is considered to be more important than to be indexed in Web of Science, the system from which the Impact Factor originated. In the countries where the study was conducted, there are national journal portals, and access for researchers is automatic and immediate. Therefore, it is possible that they will not know whether the journal is OA or has subscription fees (paid through national consortia). It would be important to conduct qualitative studies to determine if they indeed know the access models of the journals in which they publish.

All this is to say that it is apparent that OA, however OA is understood, seems to be an unavoidable reality. Fortunately, Latin America has developed its own OA model, one that is not yet fully understood internationally. We propose the need to continue on this path, using what has so far given results in promoting the growth of OA: institutional mandates, based on national laws, for self-archiving; and further strengthening of OA journal portals (such as SciELO, RedALyC and portals of academic journals), always maximizing the quality criteria.

On the other hand, about the evaluation of the scientific production of researchers, it has been noted that there is a need to work on the revision of the current system of evaluation of scientific production from the national science, technology and innovation systems, together with researchers in different assessment bodies. It is necessary to build a new set of broader indicators, advocating for unrestricted access to knowledge.

The future of the dissemination of scientific knowledge in Latin America is undoubtedly Open Access. However, as we have shown in this chapter, there are still differing levels of unawareness, as well as acceptance of the OA model among the main actors of scientific communication. The speed with which this model consolidates will
be related to the work in regional, national and institutional policies to improve the training of researchers in these areas and with the OA systems' capacity to provide valued services to the community, create new standards that strongly support the cultural change, without neglecting the strengthening of current infrastructures of OA journals and institutional repositories.

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