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Author Preferences for Open Access in Portugal: Survey Findings

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Abstract

In its relatively short existence, open access—the free, online, and immediate availability of scientific outputs in journals and repositories—has contributed to the availability and impact of scientific knowledge across the globe. As a result, the authors hypothesize that researchers and students increasingly prefer that their work appears in open access journals or open access repositories, resulting in improved access to quality, peer-reviewed scientific information and faster scientific and technological advances. Surveying authors at doctoral-granting institutions of higher education in Portugal, the authors seek to determine the extent to which this is true among Portuguese university teachers and researchers, to gauge their familiarity with open access, the importance they attach to open access when choosing a publication outlet, and to determine their preferences for achieving open access. The results show that Portuguese researchers are aware of the benefits of open access, regularly publish in open access journals, and deposit their papers in institutional or disciplinary repositories. The authors recommend continued improvement of training on institutional open access policies, European open access goals, and funding body requirements to increase open access to the fruits of Portuguese research still more.

Keywords: Open Access; Institutional Repositories; Free access; Scientific production; Publication; Portugal

1. Introduction

In its relatively short existence, open access—the free, online, and immediate availability of scientific outputs in journals and repositories—has contributed to the availability and impact of scientific knowledge across the globe. Open access institutional and disciplinary repositories and open access journals are now recognized by countries and funding agencies as essential to the broadest possible sharing of scientific knowledge.

At a meeting of the European Union Competitive Council (EU) on May 27, 2016, members agreed that all scientific research papers published by faculty at public universities within EU countries should be freely available by 2020 (Enserink, 2016). Plan S, the open access publishing initiative supported by cOAlition S, an international consortium of research funding organizations, required that “scientific publications that result from research funded by public grants must be published in compliant Open Access journals or [repositories] (Coalition-S. (n.d.)). As far back as 2006, the Declaration on Open Access of the Council of Rectors of Portuguese Universities “endorsed open access in every public university in Portugal, including those in Madeira and the Azores (Potts, 2013).” These announcements and plans represent a strong push from European research funding agencies and political bodies for open access to the results of publicly-funded European research.

To what extent are researchers at higher education institutions aware of open access generally and aware of this upsurge in open access requirements and expectations? We hypothesize that researchers prefer that their work appears in open access journals or open access repositories, resulting in improved access to quality, peer-reviewed scientific information and faster scientific and technological advances. Surveying authors at doctoral-granting institutions of higher education in Portugal, the authors sought to determine the extent to which Portuguese university teachers and researchers are familiar with open access, the importance they attach to open access when choosing a publication outlet, and their preferences for achieving open access.

2. Literature review

2.1. Genesis, evolution, and impact of open access: some reference documents

This literature review aims to provide a diachronic perspective of open access and institutional repositories, highlighting their impact and importance for free access and barrier-free dissemination of quality scientific information. Let's start by reflecting on what Open Access is, using a quote that defines it as follows:

Open access requires that refereed journal articles be fully and freely available on the open Internet, on or before the date of formal publication, to be read, downloaded, distributed, printed, and used for any legal purpose (including text manipulation, data mining and other derivative purposes), without permission or other barriers (Crawford, 2011).

Thus, open access allows great freedom of use of published articles subject to peer review as long as legal principles, such as intellectual property, are respected. Three international meetings and their respective statements contributed to the term Open Access. They include initiatives that make scholarly literature more widely and freely available. The reference documents that these meetings gave rise to are: Budapest Open Access Initiative, Bethesda Statement on Open Access Publishing, and the Berlin Declaration on Open Access to Knowledge in the Sciences and Humanities (Crawford, 2011).

The concept of open access as we understand it today emerged on February 14, 2002 with the Budapest Open Access Initiative (BOAI), the first declaration of principles related to open access to scientific information. The document promotes the worldwide electronic distribution and free availability of peer-reviewed journal literature. It also recommends two complementary options to achieve open access to the scholarly journal literature. The first is self-archiving (later known as Green Open Access), whereby scholars deposit their peer-reviewed journal articles in open repositories. The second option (later known as Gold Open Access) is to publish articles in open access journals that do not charge subscription or access fees to their users. The BOAI, led by the Open Society Institute, encourages the joint participation of collaborators that include governments, universities, libraries, researchers, and journal editors (BOAI, 2002).

On April 11, 2003, at the headquarters of Howard Hughes Medical Institute in Chevy Chase, Maryland, a group of individuals associated with information in the biomedical field, such as librarians, editors, scientists, and scientific societies, committed to free access to scientific literature. It is in this context that the Bethesda Statement on Open Access Publishing was created, which includes a definition of open access publication and statements from three different groups: i) Statement of the Institutions and Funding Agencies Working Group; ii) Statement of the Libraries & Publishers Working Group; iii) Statement of Scientists and Scientific Societies Working Group (Bethesda Statement on Open Access Publishing, 2003).

Six months later, on 22 October 2003, the Berlin Declaration on Open Access to Knowledge in the Sciences and Humanities appeared. The objectives of this Declaration are related to disseminating accessible and large-scale knowledge to society through the paradigm of free access through the Internet. The document recommends the deposit of articles in at least one repository (Max-Planck-Gesellschaft, 2003).

The International Federation of Library Associations and Institutions (IFLA) also takes a decisive position to affirm and increase the implementation of open access. In the Statement on Open Access to Scholarly Literature and Research Documentation, IFLA recognizes that the discovery and application of research in all fields contributes to the advancement of progress, sustainability, and human well-being and that peer-reviewed scholarly literature is crucial to ensure the quality of research. Among some of its points, we highlight the moral rights of authors and the adoption of the peer review process. Another important aspect is the implementation of measures to overcome information inequality, allowing researchers and scholars who may be disadvantaged to have the

opportunity to publish quality academic literature and, on the other hand, ensuring that developing nations as well as all those experiencing disadvantages, including the disabled, have effective and affordable access to quality information (IFLA, 2004).

Another essential document is the European Cultural Heritage Online – Charter, published in Berlin on October 30th, 2002. It outlines criteria related to an adequate approach to the potential of new media within the scope of “archival preservation, scholarly and educational exploration, as well as public distribution of the shared cultural heritage of mankind” (ECHO, 2002). One of the values described in the charter is that content should be made available free of charge on the Internet and in the most technically appropriate way. Among its objectives, we highlight the desire to guarantee content archiving and long-term accessibility, ensuring its integration and said accessibility in a common portal (ECHO, 2002).

In 2016, at the Council Meeting of the European Union entitled “Competitiveness (Internal Market, Industry, Research, and Space),” member states agreed to common open science objectives. They committed themselves to open access to scientific publications as the default option by 2020 and to the best possible reuse of research data, thus accelerating the transition to an open science system (Council of the European Union, 2016).

Presently, Horizon Europe – a European Commission program that, from 2021 to 2027, funds European research and innovation – declares the principles of Open Science as *modus operandi*, requiring open access to publications by those who receive European funding. Although the disclosure of data must be made as openly as possible, exceptions are provided, safeguarding legitimate interests or constraints (European Union, 2021).

As of 2015, there were 2874 repositories worldwide, with a predominant distribution in Europe (44.4%) and North America (19.7%). There are 156 members and partners of the Confederation of Open Access Repositories (COAR). Founded in 2009, COAR represents libraries, universities, research institutions, and government funders. Its mission is to provide further visibility to research results and their application through collaboration across the global network of repositories (COAR, 2015).

In 2016, COAR and UNESCO published the Joint COAR-UNESCO Statement on Open Access. This states that although most governments are aligned with the fundamental principles of open access, there are considerable differences in how countries implement it. They call for governments and the scientific community to diversify approaches to implement open access, contributing to a healthier scientific publication system and promoting greater use and impact of research (COAR, UNESCO 2016).

We highlight the recent publication entitled "COAR Community Framework for Good Practices in Repositories (Version 2)," which aims to help repositories evaluate and improve their activity. It suggests a set of feasible good practices, covering the following aspects: i) discoverability, ii) access, iv) integrity and authenticity, v) quality assurance, vi) preservation, vii) Sustainability and governance, and viii) other (COAR, 2022).

2.2 Open access in higher education

The open access publication of scientific research by teachers and researchers in higher education is an increasingly widespread reality. We highlight articles that reflect what academics know, think, and practice with regard to making their scientific production available in this way, and highlight some proposals to increase OA in the academic context.

Fitzgerald & Jiang (2020) state that open access is a way to deal with inequality in relation to the cost for readers to access academic scientific production. In the research they carried out with professors and doctoral students on the subject, they concluded that the majority of scholars from all disciplines agree that their work should be freely available to all. Most respondents indicate that such a practice is beneficial for the public interested in their work, that these should be available to the entire public, and that this increases the impact of their research. However, they also verified that 71% of respondents do not publish in OA. This very low result in terms of open access publication is in line with a worrying percentage of 74% who say they do not understand the difference between gold and green open access. Although there are fewer scholars familiar with green open access than with gold, in this study, there are more works available in open access repositories (green) than in open access journals (gold), which suggests that this option may be more appealing, despite being less known. To raise awareness about green open access among academics, the authors suggest the creation of national or international repositories shared by scholars across many universities.

Turgut, Aslan & Denizalp (2022) reveal that most academics who participated in a study carried out in Turkey (75.2%) are aware of what open access is and that most generally acquire knowledge about open access through the Internet or from their colleagues or friends. They found that awareness of open access by academics has increased within the context of the pandemic. The authors also found that whereas 75% of survey respondents use open access journal articles, only 49% publish their articles in such journals. The main reason given for this not happening was the lack of familiarity with journals of this type in their area of study. On the other hand, some of the main reasons survey respondents do publish in open access journals include: i) reaching a wider audience, ii) obtaining more citations, and iii) allowing free access for all readers. As for the existence of open access institutional repositories, 45.7% of respondents claim that they exist in their institutions, and only about 34% claim to use them. The authors also found that a majority of 66% do not make their articles available in repositories due to the lack of knowledge about self-archiving. The top three reasons that lead respondents to deposit articles are: ensuring faster dissemination of their research results (64.7%), keeping their research studies in a regular and secure archive (52%), and increasing the impact of their search results (49%).

The study by Narayan et al. (2018) on “Researchers' Attitudes and Awareness of Open Access” also collected data from academics and other researchers, this time in the areas of humanities, arts, and social sciences at the University of Technology Sydney (UTS) in Australia. They found that respondents were extremely or moderately aware (51%) of

the UTS Open Access Policy. Respondents were less aware of the concept of self-archiving in general (38.8%). Respondents demonstrated limited knowledge about open access journals in their disciplines, and revealed more knowledge about their own institution's Open Access Policy than the publication policies of publishers and funding bodies. The reputation of the editor or journal and its impact factor greatly influence researchers in their choice of a particular journal or publisher, as their reputation still plays a decisive role in terms of recruitment and promotions in academic institutions. In this research, it is recommended that university libraries - responsible for managing repositories - train researchers on open access, institutional repositories, and scientific communication in general.

As previously mentioned, the academy continues to reward authors who publish in prestigious journals, and that impacts decisions on where faculty choose to publish. Research by Pilato & Tran, 2020 carried out at Stony Brook University in the U.S., found that 83% of respondents prefer to publish in a prestigious journal or a journal of their choice rather than in an open access journal.

In conclusion, these examples show that although open access is already a known and established reality in academia, more information and training of academics on open access is necessary, and university libraries may play a decisive role. Also, more disclosure by institutions about their publication policies, more information about the existence and functioning of their institutional repositories, as well as more financial support for publication are recommended.

2.3 Open access and the Portuguese case

Having provided this framework for Open Access, we focus on the Portuguese reality that followed the international trend, then refer to some of the most remarkable events of this critical movement. In November 2003, the University of Minho (U.M.) launched the first Portuguese national repository, the RepositóriUM, considered a pioneer among national institutional repositories. Soon after, activities and projects took place in 2005, such as the 1st Open Access Conference and, in 2006, the availability of new repositories and the dissemination of the Declaration on Open Access of the Council of Rectors of Portuguese Universities (CRUP). Another significant milestone in this movement was the creation of the Scientific Open Access Repository of Portugal – RCAAP, in 2008 (Costa, 2012).

Let us now return to the case of the first Portuguese repository, RepositóriUM, whose purpose is the storage, preservation, dissemination, and accessibility of the intellectual production of the U.M. in digital format. At the time, this repository's objectives were to increase the impact of the University's research, enhance its visibility, and preserve its intellectual memory. Advantages to researchers at the U.M. include the reduction of barriers to articles, allowing easier consultation and citation by others, and, consequently, their greater visibility. Other advantages are the ease of access, rapid dissemination, and interconnection with other repositories by allowing searches in

other repositories from *RepositóriUM* and vice versa. *RepositóriUM* also provides added value to researchers by providing usage reports, statistics, and citation analysis services (Rodrigues, 2003).

The Scientific Open Access Repository of Portugal (RCAAP) represents the birth of the national open access initiative - promoted by the UMIC - Agency for the Knowledge Society and operated by the FCCN (Scientific Computing Unit of the FCT - Foundation for Science and Technology) with the support of the University of Minho, which was officially launched in December 2008. In less than two years, the RCAAP project has established itself and gained visibility and recognition at the national and international levels (eRCAAP, n.d., RCAAP, n.d.).

RCAAP's mission is to promote, support, and facilitate the adoption of open access to scientific knowledge in Portugal, storing, making available, and preserving scientific production. There are three objectives for this project: i) increasing the visibility, accessibility, and dissemination of national academic and scientific research activity, which is important for the academic and scientific community and society in general; ii) contributing to the management and access to national scientific information, through the registration of scientific production in institutional repositories and through its aggregation in the RCAAP portal and, iii) integration of Portugal in a set of international initiatives through the provision of an aggregator and a directory of academic and scientific production that allow interoperability with research centers, research funding bodies, and European and global higher education institutions that have similar tools. As a result of improvements made to the portal, among its new features is the management of the wholly reformulated aggregation process integration with the *Ciência Vitae* curriculum service, and a new public interface (Carvalho et al., 2018).

Currently, in Portugal, several universities and polytechnics have produced and adopted open access policy regulations, representing an advance in the affirmation of the open access movement that contributes to the evolution and democratization of science and the visibility of authors and institutions with which they are affiliated.

3. Methodology

The methodology adopted in this research is a survey applied to teachers and researchers at higher education institutions to obtain detailed information about the subjects under study. In May 2020, the authors distributed a survey to faculty in all academic ranks at 14 Portuguese higher education institutions to learn the extent to which Portuguese authors currently make their research openly available, ascertain their awareness of open access, their support of the EU open access goal, and their preferences for achieving open access. The 14 institutions were selected because the authors expected that they would be willing to participate in the study and be responsive to participation invitations: University of Aveiro, ISCTE - Lisbon University Institute, University of Lisbon, University of Coimbra, University of Évora, University of Porto, University of Madeira, University of Beira Interior, University of Trás-os-Montes and Alto Douro, New University of Lisbon, University of Minho, Open University,

University of the Algarve, and the University of the Azores. The survey was sent to the population of teachers and researchers at these institutions twice in the period between 19 May and 31 December 2020.

The web-based survey was developed using Qualtrics software. The survey is based on the survey tool distributed for the “Bulgarian Author Open Access Awareness and Preferences” paper (Boock et al., 2020). The authors of this research project translated the questions and responses to Portuguese, the primary authors’ native language, for analysis.

The survey included 21 questions in three sections: 1. Demographic Information, 2. Research Practices and Open Access Benefits, and 3. Awareness of and Attitudes Concerning the European Union Goal of Open Access. Three questions were matrix tables containing 23 statements with responses ranked on a 5-part Likert scale. Two of them were open-ended questions. Survey questions cover the following and other issues relating to author publishing preferences as they relate to open access: awareness of open access publishing and open access policies, awareness and understanding of self-archiving in open access repositories, decision factors when choosing publication in journals in their academic areas, knowledge of publication policies, and preferences between green and gold open access. The response rate obtained was approximately 16.7%, in a universe of 740 potential respondents affiliated with the previously identified 14 universities.

4. Results

4.1 Demographics

The first section of the survey asked a series of demographic questions. Of the respondents, 68.4% are female, and 31.6% are male. A large majority of the participants (89.5%) are 50 or more years of age (47.4% between 50-59 and 42.1% are 60 or more), 7.9% are between 40-49 years of age, and only 2.6% are between 30-39. Most respondents (92.1%) have worked as a researcher for 20 or more years, 5.3% have worked between 15-19 years, and the rest (2.6%) have worked between 6-9 years as a researcher.

An overwhelming majority of 97.3% of respondents have completed their Doctoral Studies and are Ph.D.s, and 2.6% have an academic degree other than a Ph.D. In Portugal, a Ph.D. is awarded to students who have completed their doctoral studies and defended a Ph.D. thesis.

The respondents' main research areas are diverse. Participants' research areas include Social Sciences (15.9%), Biological Sciences, History, Archaeology, and Philosophy, Other (each 11.4%), Engineering Science and Technology (9.1%), and Philology (6.8%). Other research areas include Agriculture Sciences and Related Sciences, Chemical Sciences, Arts and Design, Education and Pedagogy, Mathematics, Informatics, and Computer Science, Medicine, Dentistry, and other scientific areas (each with 4.5% of responses).

Architecture, Construction and Design, Administration and Management, and Earth Sciences each had 2.3% of responses.

4.2. Benefits of open access and publication practices

As shown in Table 1 below, respondents are more likely to deposit articles to a repository than publish articles in open access journals. Regarding the question, “How often do you deposit articles in an institutional repository?” 36.8% said “almost always,” 18.4% said “frequently” or “sometimes,” and 13.2% answered “rarely” or “never.” Regarding how often respondents deposit articles in a disciplinary repository, 21.1% responded “almost always,” 10.5% responded “sometimes” or “frequently,” 23.7% responded “never,” and 34.2% responded “rarely.” This meets the authors’ expectation that the deposit to institutional repositories is higher than the deposit to disciplinary repositories.

Concerning authors’ research practices and the benefits of open access, when confronted with the question, “Do you consider that your research discipline benefits from the availability of open access research?” 86.8% responded “yes,” 2.6% “no,” and 10.5% “I’m not sure.” When questioned if they consider that students, teachers, and researchers who are not employed by institutions capable of providing access to scientific research benefit from open access to the research in their disciplines, 89.5% said “yes,” 2.6% “no,” and 5.3% “I’m not sure.” 89.4% of survey respondents indicate that they are either extremely aware (44.7%) or highly aware (44.7%) of arguments in favor of open access, and 10.5% are moderately aware of such arguments.

When asked, “Do you consider that members of the public benefit from open access to research in their area?” 89.5% responded “yes,” 2.6% “no,” and 5.3% “I’m not sure.” When questioned, “To what extent are you aware of the arguments in favor of open access to the results of scientific research?” 10.5% responded moderately aware, 44.7% reacted very aware, and 44.7% responded extremely aware. When confronted with the question, “Does your institution ask you to deposit your research articles in an institutional repository?” 78.9% responded “yes,” 10.5% responded “no,” and 10.5% “I’m not sure.”

When questioned, “How often do you make articles available on a personal or institutional website that is not a repository?” 21.1% responded “almost always,” 28.9% responded “sometimes,” 7.9% responded “frequently,” and 42.1% responded “rarely” or “never.” Considering the question, “How often do you make articles available on commercial social networking sites such as ResearchGate or Academia.edu?” 21.1% responded “almost always,” 26.3% responded “sometimes,” 28.9% responded “frequently,” 18.4% responded “rarely,” and 5.3% responded “never.”

When asked, “How often do you publish articles in an open-access journal?” 10.5% responded “almost always,” 47.4% responded “sometimes,” 34.2% responded “frequently,” 5.3% responded “rarely,” and 2.6% responded “never.”

When asked, “How often do you publish articles in a subscription journal and pay a fee to publish the article openly? (the “hybrid” option)” 2.6% responded “almost always,” 26.3% responded “sometimes,” 10.5% responded “frequently,” 23.7% responded “rarely,” and 36.8% responded “never.”

Table 1: How often do faculty use these “open access” mechanisms?

	Institutional Repository	Disciplinary Repository	Social Networking Sites	Website	OA Journal	Hybrid Journal
Almost Always	36.8%	21.1%	21.1%	21.1%	10.5%	2.6%
Frequently or Sometimes	18.4%	10.5%	55.2%	36.8%	81.6%	36.8%
Rarely or Never	13.2%	57.9%	23.7%	42.1%	7.9%	60.5%

When selecting a journal for publication, respondents overwhelmingly choose based on the journal’s prestige. The esteem in which the journal is held by the scientific community (97.3% “extremely important” or “important”), the journal’s impact factor (96.8%), and the degree to which publishing in the journal will provide an advantage in the assessment of a researcher’s work (92.1%) are each of overwhelming importance (Table 2). Other important factors when considering a journal in which to publish are the expected speed of publication (84.2% “extremely important” or “important”), whether there are publishing fees (71%), previous positive experience with the journal editor (68.5%), whether the journal is open access (65.8%), and the likelihood that the paper will be accepted by the journal (60.6%).

Respondents are more neutral on the importance of a journal’s copyright policy in deciding where to publish (32.4%) or believe that this is unimportant or irrelevant (13.5%).

Table 2: Criteria when selecting a journal in which to publish ranked by importance to authors

	Community opinion	Effect on promotion	Impact factor	Publishing fees	Speed of publication	Editor relationship	Open Access	Acceptance rate	Copyright policy	Colleague opinion
Extremely important	60.5%	52.6%	57.9%	36.8%	26.3%	21.1%	21.1%	5.3%	16.2%	11.1%
Important	36.8%	39.5%	28.9%	34.2%	57.9%	47.4%	44.7%	55.3%	37.8%	38.9%
Neutral	2.6%	5.3%	7.9%	15.8%	10.5%	26.3%	23.7%	26.3%	32.4%	2.8%
Not important	0	0	0	7.9%	2.6%	2.6%	2.6%	7.8%	5.4%	33.3%
Irrelevant	0	2.6%	5.3%	5.3%	2.6%	2.6%	7.9%	5.3%	8.1%	13.9%

4.3. Awareness and attitudes towards the European Union's open access objective

The last section of the survey includes questions about Portuguese authors' awareness and attitudes towards the EU's open access 2020 objectives, their preferences for policy implementation, and their support for methods the EU might use to encourage policy adherence. Not only are the respondents aware of the objectives—78.9% are, 13.2% are not, and 7.9% are “not sure”—but when asked to what extent they would support the objectives for all publicly funded research in the EU to be open access, 42.1% “fully support” it, 36.8% “support” it, 13.2% are “undecided,” and 5.2% “do not support” it.

A majority of respondents (55.3%) said that the ability to publish the results of their research in journals of their choice would remain “very important,” 34.2% “important,” and only 10.5% would be “neutral.” No respondent answered that this would be “unimportant” or “irrelevant.”

Respondents were also asked to indicate the relative importance of policy implementation options in the event of an EU requirement that all publicly-funded scientific articles appear in an open access journal, open access in a hybrid journal, open access in an institutional repository, or open access in a disciplinary repository. Publishing factors include the availability of funding to pay open access charges, making open access availability of an article the basis for future funding, and making open access availability of articles a criterion for promotion and evaluation decisions. Most respondents (62.1%) believe it to be “very important” or “important” that funding to pay open access charges would be available to meet a requirement to publish articles in an open access journal or open access in a hybrid journal. 55.2% of respondents agree that making the open access availability of an article a basis for future funding is either important or very important, whereas 28.9% are neutral, 10.5% consider it “unimportant,” and 5.3% consider it “irrelevant.”

In terms of making open access article availability a criterion in promotion and progress evaluation decisions, 10.5% believe this to be “very important,” 21.1% “important,” and 26.3% have no opinion, whereas 18.4% believe this to be “unimportant,” and 23.7% “irrelevant.”

When asked, “To what extent is it important for you, in complying with a European Union requirement to deposit your article in an open access repository, for the publisher to deposit an accepted manuscript, post-revision version of the article in an open access repository, the majority of the respondents think that is “Important” (55.3%), 34.2% consider it “Extremely important,” and the remaining respondents (10.5%) are neutral regarding this aspect.

Most of the respondents consider it “Extremely important” or “Important” (55.3% and 36.8%) that the publisher deposit a final published version of the article into an open access repository in compliance with a European Union requirement to deposit a final published version of the article into an open access repository and 7.9% are neutral about this.

Considering the question, “To what extent is it important for you, in complying with a European Union requirement to deposit your article in an open access repository, that the author is required to deposit a post-revision version of the article in an open access repository,” 15.8% consider this to be “Extremely important,” 36.8% “Important,” and 31.6% are “Neutral.” The remaining 15.8% consider it to be “Not important” (10.5%) or “Irrelevant” (5.3%).

Regarding the question, “To what extent is it important for you, in complying with a European Union requirement to deposit your article in an open access repository, that the author is required to deposit the final version of the article in an open access repository” the majority of the respondents, 52.7%, answered “Extremely important” (21.1%) or “Important” (31.6%), 34.2% are neutral about this, and 13.1% consider this to be “Not important” (10.5%) or “Irrelevant” (2.6%).

Finally, when asked, “To what extent is it important for you, in complying with a European Union requirement to deposit your article in an open access repository, that the author is obliged to negotiate the right to deposit the article in an open access repository?” 10.5% of respondents think that it is “Extremely important,” 26.3% consider it “Important,” 26.3% are neutral about this aspect, 23.7% believe it to be “Not important,” and 13.2% think that it is “Irrelevant. This shows a clear division among respondents who have opposing views.

Table 3: Compliance with prospective EU open access policy

	Publisher deposits accepted manuscript version of article to repository	Publisher deposits final publisher version of article to repository	Author deposits accepted manuscript version of article to repository	Author deposits final publisher version of article to repository	Author negotiates the right to deposit article to repository
Extremely important	34.2%	55.3%	15.8%	21.1%	10.5%
Important	55.3%	36.8%	36.8%	31.6%	26.3%
Neutral	10.5%	7.9%	31.6%	34.2%	26.3%
Not important	0	0	10.5%	10.5%	23.7%
Irrelevant	0	0	5.3%	2.6%	13.2%

5. Discussion

Researchers at Portuguese universities are overwhelmingly aware of arguments in favor of open access and believe that open access benefits researchers in their field. Cardoso (2017) concludes that the open access movement, when it is well-designed in the national context and given institutional support, contributes to the knowledge and practices of use that integrates the practices of researchers. The results of the present

study confirm Cardoso's (2017) statement regarding authors' perception of personal and institutional advantages, and added value that comes from open access.

Regarding open access publishing habits, Portuguese authors may be more likely to publish in open access journals than authors generally. Only 7.9% of respondents say they never publish articles in open access journals or rarely do so. 10.5 percent of respondents say that they almost always publish articles in an open access journal, 34.2% do so often, and 47.4% do so sometimes. According to Dallmeier-Tiessen (2011), the 2010 Study of Open Access Publishing survey found that 52% of respondents had published at least one article in an open access journal. The Portuguese results are much higher at 92.1%. Portuguese researchers also appear willing to meet the terms of open access policies that would require article deposit to an open access repository (78.9% "Yes," 10.5% "No," and 10.5% "Not Sure"). 73.6% of all respondents say they deposit articles to an institutional repository at least sometimes.

To achieve greater buy-in to institutional open access policies, it is necessary to promote and publicize them and create services to assist authors in the deposit of articles. A higher percentage of respondents who have been employed for ten years or more sometimes deposit to an institutional repository more often than those employed for fewer than ten years. Portuguese respondents are generally aware of open access and of the EU goal that the results of publicly funded research should be open access by the year 2020, contrary to the data collected in the study of Bulgarian researchers three years ago (Boock et al., 2020). It is quite possible that if the survey were given to Bulgarian researchers again today, three years later, that their awareness of the EU open access 2020 initiative would have grown.

To determine whether Portuguese faculty have a preference for green or gold open access to achieve the EU goal of open access to all publicly-funded research by 2020, the survey asked respondents to indicate how critical different factors would be for them to comply with a requirement to deposit research articles to an open access repository (green open access) or publish their articles in open access journals (gold open access). Regarding green open access compliance, respondents said that having a publisher deposit articles to an institutional repository on their behalf would be preferable to doing it themselves.

Portuguese authors prefer that the publisher's "version of record" of an article is deposited rather than an "accepted manuscript version." Respondents are overwhelmingly willing to deposit articles to institutional repositories and put their money where their mouth is in this regard. 36,8% of respondents deposit articles to institutional repositories almost always or frequently (18,4%).

The data collected regarding an obligation of researchers to negotiate the right to deposit an article in an open access repository are quite dispersed, suggesting that respondents have very different opinions about this. The authors were surprised to find that 42.1% of the respondents consider that only open access publishing of articles in promotion and tenure reviews was an "Irrelevant" or "Not important" factor for

researchers when considering whether to publish an article open access. Respondents indicate that the journal's prestige is the most important criterion when assessing a publishing outlet, which corresponds with other research such as that of Mabe & Mulligan (2011). They identified eight predominant factors for authors deciding with whom to publish (in no order): publishing services, reputation, editor or editorial board, physical quality, refereeing standard, refereeing speed, production speed, and impact factor, and they grouped them in four areas of importance to authors: the quality of the publication; the speed of publication; the editorial team; and publishing services. Also, Wijewickrema & Petras (2017) have shown the importance of factors such as the impact factor of the journal, a publisher's prestige, and the journal's inclusion in abstracting and indexing databases when assessing journals for publishing. Also, the study published by Rowley et al. (2022) found that the first two journal-choosing factors related to authority were the journal's reputation and the journal's prestige. These authors also found that the impact factor was also rated highly by the respondents.

6. Conclusions

In the 21st century, access to scholarly information has never been faster or easier, especially when researchers decide to make their work available in open access journals and repositories. In the context of growing organizational flexibility and collaborative paradigms, authors are asked to join technological skills with a spirit of pragmatic and communal spirit.

For this study, researchers at 14 doctoral-degree granting higher education institutions in Portugal were surveyed to determine their awareness of the EU Competitive Council goal of open access to publicly funded research, their support for the goal, and their preferences for helping to achieve it. For several years, Portugal has moved toward open access research; for example, the University of Minho created its institutional repository in 2003, and many others followed it. Only a few respondents said their institutions don't ask them to deposit their research articles in an institutional repository.

Portuguese authors are very much aware of arguments in favor of open access and believe that it benefits researchers in their discipline. They are also familiar with the EU goal of open access to all publicly funded research by 2020; they support it and are willing to publish in open access journals or deposit articles in open access repositories.

A very high percentage of Portuguese researchers say they already publish in open access journals at least sometimes, and they believe that financial support should be made available to pay the processing fees; a large majority say their institutions ask them to deposit their research in institutional repositories and in fact a large majority deposit their research in institutional repositories at least sometimes.

Taking into account the data collected, the authors recommend:

- The reinforcement of the training and continuing education programs regarding institutional open access policies.

- The creation of a scholarly communication service to help teachers and researchers with the process of making available and uploading the files into the institutional repositories (self-archiving).

As for the limitations of this study, the authors identify the low response rate, which prevents extrapolations from being made to the universe. The study was implemented during the COVID-19 pandemic, which, due to the disruption created in all sectors, made data collection complex and delayed its subsequent treatment. For future work, it would be interesting to replicate this study, but including the polytechnic higher education institutions. Also, a survey regarding faculty awareness of institutional open access policies and self-archiving would be useful since it would bring another perspective to the discussion.

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References

Bethesda Statement on Open Access Publishing (2003).
<https://www.ouvrirelascience.fr/wp-content/uploads/2019/03/Bethesda-Statement-on-Open-Access-Publishing.pdf>

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

Boock, M., Todorova, T.Y., Trencheva, T.S. and Todorova, R. (2020). "Bulgarian authors' open access awareness and preferences." *Library Management*, 41 (2/3), 91-102.
<https://doi.org/10.1108/LM-08-2019-0059>

Cardoso, P. (2017). *Práticas educacionais abertas no ensino superior público em Portugal: da teoria à prática - recursos educacionais abertos e acesso aberto*. [Doctoral dissertation, Universidade Aberta]. Repositório Aberto da Universidade Aberta.
<https://repositorioaberto.uab.pt/handle/10400.2/7363> reformulada

Carvalho, J., Torres, N., Lopes, P., Marques, C., Truta, R. (2018). Novo Portal RCAAP: novas funcionalidades. *Cadernos BAD*, 1, 94-100.
<https://eds.s.ebscohost.com/eds/pdfviewer/pdfviewer?vid=1&sid=029a54c2-ee35-4a53-851b-cc6e4c412c0a%40redis>

Coalition-S. (n.d.). *Statement on peer reviewed publications—Plan S*.
<https://www.coalition-s.org/statement-on-peer-reviewed-publications/>

COAR (2022). *COAR Community Framework for Good Practices in Repositories Version 2*. <https://www.coar-repositories.org/files/COAR-best-practices-framework-for-repositories-Version-2-July-19-2022.pdf>

COAR (2015). *Promoting Open Knowledge and Open Science: Report of the Current State of Repositories*. <https://www.coar-repositories.org/files/COAR-State-of-Repositories-May-2015-final.pdf>

COAR, UNESCO (2016). *Joint COAR-UNESCO Statement on Open Access*. https://www.coar-repositories.org/files/coar_unesco_oa_statement-1.pdf

Costa, M. T. F. (2012). O uso de recursos educativos abertos (rea) como recursos didáticos: benefícios para alunos e professores. O caso do repositório científico de acesso aberto de Portugal. *Liinc em Revista*, 8 (2), 402-412. <https://revista.ibict.br/liinc/article/view/3331/2940>

Council of the European Union (2016). *Outcome of the Council Meeting -3470th Council meeting: Competitiveness (Internal Market, Industry, Research and Space)*. <https://data.consilium.europa.eu/doc/document/ST-14926-2016-INIT/en/pdf>

Crawford, W. (2011). *Open Access: What You Need to Know Now*. ALA Editions. https://web.s.ebscohost.com/ehost/ebookviewer/ebook/ZTAwMHh3d19fMzYyMzA4X19BTg2?sid=06acb8e2-0f4d-4d2f-90fb-c74147d28608@redis&vid=2&format=EB&lpid=lp_25&rid=0

Dalmeier-Tiessen, S., Darby, R., Goerner, B., Hyppoelae, J., Igo-Kemenes, P., Kahn, D., Lambert, S., Lengenfelder, A., Leonard, C., Mele, S., Nowicka, M., Polydoratos, P., Ross, D., Ruiz-Perez, S., Schimmer, R., Swaisland, M., & van der Stelt, W. (2011). *Highlights from the SOAP project survey. What Scientists Think about Open Access Publishing* (arXiv:1101.5260). arXiv. <https://doi.org/10.48550/arXiv.1101.5260>

ECHO (2002). *European Cultural Heritage Online Charter*. https://echo.mpiwg-berlin.mpg.de/policy/oa_basics/charter/ECHOcharter.pdf

Enserink, M. (2016). *In dramatic statement, European leaders call for «immediate» open access to all scientific papers by 2020*. <https://www.science.org/content/article/dramatic-statement-european-leaders-call-immediate-open-access-all-scientific-papers>

eRCAAP (n.d.). *Introdução ao Acesso Aberto*. <https://elearning.rcaap.pt/mod/page/view.php?id=51>

European Union (2021). *Horizon Europe: Open Science*. <https://op.europa.eu/en/publication-detail/-/publication/9570017e-cd82-11eb-ac72-01aa75ed71a1>

Fitzgerald, S.R. & Jiang, Z. (2020). Scholarly Publishing at a Crossroads: Scholarly Perspectives on Open Access. *Innovative Higher Education*, 45, 457–469. <https://link.springer.com/content/pdf/10.1007/s10755-020-09508-8.pdf>

Harnad, S., Brody, T., Vallières, F., Carr, L., Hitchcock, S., Gingras, Y., Oppenheim, C., Stamerjohanns, H. and Hilf E. R. (2004). The Access/Impact Problem and the Green and Gold Roads to Open Access. *Serials Review*, 30 (4), 310-314. https://www.researchgate.net/publication/327272989_The_AccessImpact_Problem_and_the_Green_and_Gold_Roads_to_Open_Access

IFLA (2004). *IFLA Statement On Open Access to Scholarly Literature and Research Documentation*. IFLA Journal, 30, 59-89. <https://journals.sagepub.com/doi/pdf/10.1177/034003520403000110>

Mabe, M., & Mulligan, A. (2011). What journal authors want: Ten years of results from elsevier's author feedback programme. *New Review of Information Networking*, 16 (1), 71-71–89. Scopus®. <https://doi.org/10.1080/13614576.2011.574495>

Max-Planck-Gesellschaft (2003). *Berlin Declaration*. <https://openaccess.mpg.de/Berlin-Declaration>

Narayan, B., Luca E. J., Tiffen, B., England, A., Booth, M., Boateng, H. (2018). Scholarly Communication Practices in Humanities and Social Sciences: A Study of Researchers' Attitudes and Awareness of Open Access. *Open Information Science*, 2, 168–180. <https://www.degruyter.com/document/doi/10.1515/opis-2018-0013/html>

Pilato, V. Tran, C.Y. (2020). Stony Brook University Author Perspectives on Article Processing Charges. *Journal of Librarianship and Scholarly Communication*, 8 (1), 1-19. https://www.researchgate.net/publication/343062254_Stony_Brook_University_Author_Perspectives_on_Article_Processing_Charges

Potts, C. H. (2013). Up and Away: Open Access in Portugal. *Educause Review*.

RCAAP (n.d.). *Sobre o RCAAP*. <https://www.rcaap.pt/about.jsp?locale=pt>

Rodrigues, E. (2003). *RepositóriUM: repositório institucional da Universidade do Minho* [Communication at the Salão Nobre of the University of Minho, in the public presentation of the RepositoriUM]. <https://repositorium.sdum.uminho.pt/bitstream/1822/417/1/Apresenta%c3%a7%c3%a3o%20Reposit%c3%b3riUM%20-%20Abertura.pdf>

Rowley, J., Sbaffi, L., Sugden, M., & Gilbert, A. (2022). Factors influencing researchers' journal selection decisions. *Journal of Information Science*, 48 (3), 321–335. <https://doi.org/10.1177/0165551520958591>

Turgut, Y. E., Aslan, A. Denizalp, N.V. (2022). Academicians' awareness, attitude, and use of open access during the COVID-19 pandemic. *Journal of Librarianship and Information Science*, 54 (3) 350–362.

https://journals.sagepub.com/doi/pdf/10.1177/09610006211016509?casa_token=t4QrlodIE6cAAAAA:JEOi5iWc-qLC0zkjeZCbHBY0wbytv823aXoqghyF5hCkCN2f9llm_1c_J1SNnKEFlyDQ9SBnnW4

Wijewickrema, M., & Petras, V. (2017). Journal selection criteria in an open access environment: A comparison between the medicine and social sciences. *Learned Publishing*, 30, (4), 289-300. <https://doi.org/10.1002/leap.1113>