

## **Institutional repositories and increased use in times of a pandemic: true image or mirage?**

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**Abstract:** In 2021, because of the COVID-19 pandemic and restrictions on in-person access to libraries, the number of downloads, consultations, and access to digital collections increased. The University of Lisbon was no exception to this rule. In the present work we seek to find out if, after a decrease felt in previous years, there will be a gradual trend towards growth in access to digital information. Some authors refer that a more developed digital literacy allows more critical access to information sources. Is our institutional Repository already gaining the trust of the academic community, in order to constitute itself as a fundamental resource, or is this pandemic period nothing more than a momentary opportunity that, when it ends, will not consolidate the evolution of access to digital information? What actions and strategies have libraries been developing for their dissemination? How is the importance of the Repository communicated to researchers and students? This is the context for an exploratory study that leaves the future of institutional repositories open.

To this end, given the data obtained from the platform usage statistics, a questionnaire survey is carried out to those responsible for the libraries of the 18 schools that make up the University of Lisbon, with a double objective: to understand the dissemination strategies that have been used with the academic community and to evaluate its integration in the routines of study and research. Based on the results, we seek to observe what clues are left for us to improve the visibility of the institutional repository, to consolidate its use.

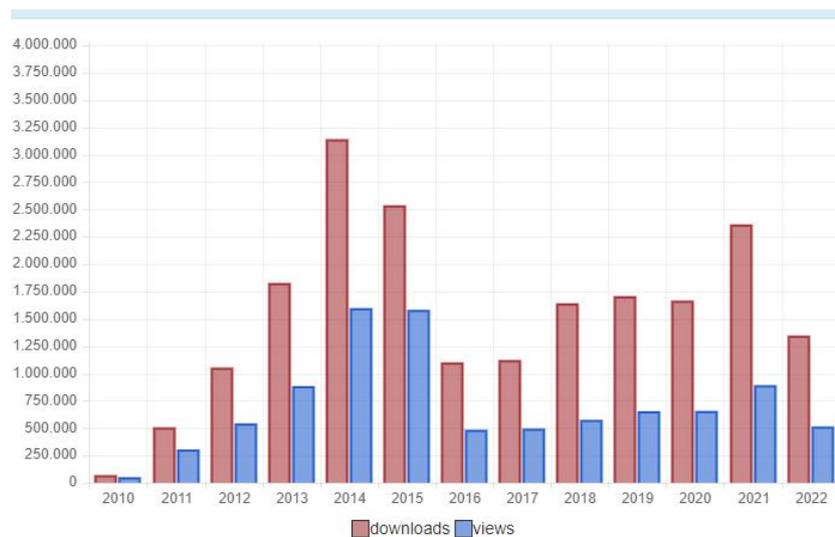
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**Keywords:** Open access; institutional repositories; visibility; promotion; use of the academic repository



## 1. Introduction

Institutional Repositories (IR) are initiatives with an unavoidable history. These devices integrate and guarantee the operationalization of the Open Science movement and encourage the free circulation of academic and scientific production, making a wide range of information resources available for academic communities, as well as society in general. Currently, the University of Lisbon (ULisboa), which is the result of a merger of the former University of Lisbon and the Technical University of Lisbon, in 2013, also has two institutional repositories, a legacy of the previous situation. However, only one school, Instituto Superior Técnico, has its own separate repository. So, in this investigation, this school was not considered in the analysis.

In 2021, because of the COVID-19 pandemic and restrictions on in-person access to libraries, the number of downloads, consultations, and access to digital collections increased at the University of Lisbon Repository. The Figure 1. shows the number of downloads and views.



**Figure 1. Number of downloads and views of the ULisboa Repository during 2010 – 2022**

It was decided to verify the actions of the librarians of the schools of the University of Lisbon about the dissemination initiatives carried out, especially throughout the COVID-19 pandemic, to understand whether these have influenced user demand.

This paper attempts to present an overview of the current status of the institutional repository dissemination across the University of Lisbon, relating this performance to the worldwide impact on the scientific information reach.

## **2. Literature review and background**

There are reports of changes in various facets of life due to the pandemic (OCDE, 2021), and higher education was no different (Joynes, Gibbs, & Sims, 2020; Zain, 2021). Here, too, was necessary to adapt resources to disruptive and unexpected circumstances. *Campuses* were closed, teaching began to be delivered remotely, students practiced new forms of distance learning, staff meetings mainly took place in Zoom, and remote working was a constant. Higher education libraries, necessarily, were also affected by these circumstances, having to adapt to the complexity of the emerging situation (Leo, Alsharari, Abbas, & Alshurideh, 2021). Throughout the world, many library professionals wondered how to face and overpass the COVID pandemic (Baker & Ellis, 2021; EBLIDA Secretariat, 2020). During this period, many students and faculty members began using digitization services and digital resources far more extensively and in ways they never did before (Chan & Caplan, 2021).

The benefits of open access were once more highlighted all over the world, underlying its importance and the need to improve the institutional repositories' policies (Ali & Saleem, 2021; Creaser et al., 2010). In previous research throughout the past decade, some authors found out that the use of open access repositories in Asia is intrinsically related to Asian-top ranked universities; which explains why is so important for authorities to consider the web performance of the institutional repositories, as well as the policies to increase volume and quality of the intellectual outputs across these platforms (Abrizah, Noorhidawati, & Kiran, 2010; Lee-Hwa, Abrizah, & Noorhidawati, 2013).

Although the concerns with the awareness and use of e-resources are not new (Bamigbola, 2021; Kuldeep, 2019; Roy, Biswas, & Mukhopadhyay, 2013), in times of pandemic crisis it gains new significance. A study in India revealed that the COVID-19 pandemic outbreak has affected the ways the education system functions, undergoing a significant change, requiring the availability of more e-content. The study shows that staff and researchers are the most experienced regarding the importance and benefits of Open Access Institutional Repositories [OAIRs], whereas students need to be more aware. Overall, in India, OAIRs support the significant change in the educational system, as well as the promotion of wider information accessibility, resolving the digital divide (Panda, 2021). But the studies on visibility and awareness of institutional repositories reveal mixed results. In a case study in Tanzania, findings indicate that even library staff is not aware of the importance and significance of institutional repositories; therefore, it is recommended to implement diverse marketing strategies, and conduct regular training, seminars and workshops to improve awareness, skills, and knowledge about institutional repositories among academic staff (Kayungi, Ndenje-sichalwe, & Manda, 2021). In Spain, with respect to the tools used to promote the repository within the institutions, a study stated that several strategies are used: face-to-face training sessions, support materials such as manuals and help pages; and the academic authorities' encouragement to open access display among researchers, as a significant element in repository marketing (Serrano-Vicente, Melero, & Abadal, 2018). Over the past decade, research shows that a better understanding of faculty

research culture is required to engage in marketing that is more effective than current practices; advocating the need for self-archiving, informal conversations, and incentive structures seem to be good answers to increase deposits, access, and circulation of scientific e-resources (Jantz & Wilson, 2008; Tun, Senior, & Gulzar, 2021). Otherwise, poor visibility and accessibility of research outputs and products by the universities are the results of a fragile commitment or of slow adoption and application of institutional policies regarding the implementation of the repositories, and this will lead to the decline of the university's web ranking position (Kayungi et al., 2021).

Some testimonies point to a significant increase in the use of online resources during the pandemic, initiating online sessions to create awareness of online resources available in the open access domain (Saundankar, 2021). In addition to wider access to more resources, patrons have expressed satisfaction with the responsiveness of libraries to digitization requests, email answers, and online information supply (Antunes, Lopes, & Sanches, 2021), although there is a need of specific training for the use of databases and other e-resources. These changes impacted not only the provision of information; they are also linked to the building of community, once libraries generate a longstanding collaboration, being places where formal and informal learning takes place, connecting research deeply to collections; nevertheless, interactions that occur in library spaces became more challenging to deliver digitally (Winters, 2021).

At the same time, the attention on repositories also increased. Experiences around specialized scientific information, particularly in health, mainly due to COVID-19, have proven its importance and value (Kati, 2021; Quicke et al., 2021). For instance, the evidence-based repositories' implications for health promotion practitioners and researchers call for action, to evolve, keep pace with the digital age, the inclusion of emerging rapid or real-time data, incorporating new information related to ever-changing use and quality improvement, and fitting the dynamic of diverse users (Harden, Steketee, Glasgow, Glasgow, & Estabrooks, 2021).

Against this background, have institutional repositories earned their place? Can we affirm that there is a confidence of the academic community in order to constitute repositories as fundamental resources, or is this pandemic period nothing more than a momentary opportunity that, when it ends, will not consolidate the evolution of access to digital information? It is necessary to know what actions and strategies have been developed by libraries for the diffusion of institutional repositories and if these strategies are having an effect? This is the context of the following exploratory study.

### **3. Objectives**

This study aims to describe and explain how the access of an institutional repository was impacted by the COVID-19 pandemic. Focused on the contribution of staff activities to repository dissemination, the study is confined to the use and awareness of this open educational resource among the academic community, particularly the actions of head librarians or libraries responsible.

#### **4. Methods**

The study is based on a survey research method. An online structured questionnaire in Google Forms with data collected among the 18 schools of the University of Lisbon head librarians.

The questionnaire was divided into four parts:

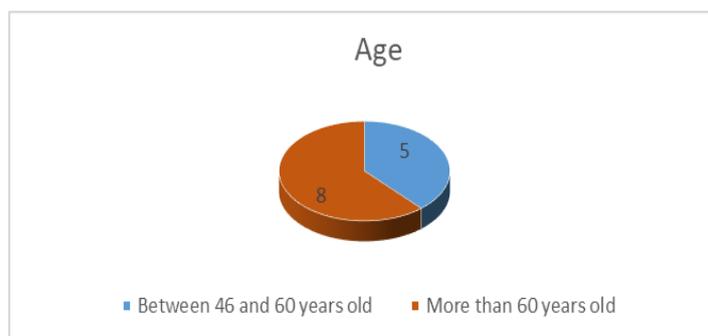
- an introduction, to clarify the content of the questionnaire to respondents;
- questions for the characterization of the respondent librarians;
- the core of the survey, with six questions; and
- an open question in the end, if the respondents wanted to leave some suggestion or opinion.

A descriptive analysis was performed, concerning the higher education libraries' characterization.

#### **5. Results**

The present study aims to analyze trends in the use of ULisboa's Institutional Repository. It is observed how librarians have communicated the importance of this platform and encouraged its use by the academic community, as well as the type of use that has been carried out.

In the March 2022 period, the questionnaire was sent by email to all 18 head librarians from University of Lisbon. Out of these, 13 responses were obtained from the librarians, 1 male and 12 female respondents, Figure 1 shows the age distribution of the respondents, all with ages above 46 years old, and within the scope of all scientific areas covered by the University (Life and Health Sciences – 2 schools, Science and Technology – 2 schools, and Social Sciences and Humanities – 8 schools, and other area – 1 school).



**Figure 2. Age distribution of the sample**

Table 1 presents the absolute frequency of the answers given (yes, no and not applicable) to the hypotheses placed concerning the dissemination and use of the ULisboa Repository.

**Table 1. Dissemination and use of the ULisboa Repository**

<b>Where is the Institutional Repository advertised?</b>	<b>Yes</b>	<b>No</b>	<b>Not applicable</b>
Web Site	12	1	0
Faculty web site	6	6	1
University web site	8	4	1
Personal recommendation from the librarian/technical staff	13	0	0
Training	13	0	0
<b>Regarding the repository, what do you think it is most used for?</b>	<b>Yes</b>	<b>No</b>	<b>Not applicable</b>
Above all for the deposit	13	0	0
Mainly for self-archiving of articles and other scientific output of researchers	9	3	1
Mainly for research in students' academic work	8	4	1
Especially for advanced research developed by researchers	7	4	2
Especially for advanced research developed by librarians	10	3	0

Table 2 shows the absolute frequencies related to the responses obtained about users' access to the ULisboa repository and the work done by the library in the institutional repository.

**Table 2. User access and contribution of library work to the ULisboa Repository**

<b>How do you think users access the institutional repository?</b>	<b>Yes</b>	<b>No</b>	<b>Not applicable</b>
Directly from the web address	8	5	0
Library web page	11	0	2
University web page	5	4	4
RCAAP	9	3	1
For a research management system / PT-CRIS	3	6	4
<b>In the case of the work carried out by the library</b>	<b>Yes</b>	<b>No</b>	<b>Not applicable</b>
Deposit of Master's dissertations	12	0	1
Deposit of PhD dissertations	7	6	0
Deposit of scientific articles	10	3	0
Metadata editing and validation	11	2	0

Hyperlinking digital documents to physical copies in the catalogue	11	2	0
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Table 3 shows the data obtained regarding the subjects questioned about the use of advanced functionalities used by library staff and the proposals to improve the ULisboa repository.

**Table 3. Use of advanced features and useful issues to improve the ULisboa repository**

<b>What advanced features do you use in the Repository?</b>	<b>Yes</b>	<b>No</b>	<b>Not applicable</b>
Statistical data	9	3	1
Association with the RENATES registers	11	1	1
Link to ORCID author profiles	8	4	1
Importing / Exporting files to Ciencia Vitae	5	7	1
Answers to requests for copies of documents to which access is restricted	11	2	0
<b>What do you see as important reasons why the Repository should be more and better used?</b>	<b>Yes</b>	<b>No</b>	<b>Not applicable</b>
Promote your potential in relation to social networks	13	0	0
Enabling open access to more scientific production	13	0	0
To have more visibility on institutional websites	13	0	0
Easier advanced search	10	2	1
Have more facilities associated	9	2	2

## 6. Discussion

In this study, data was obtained from a questionnaire, to the leaders of the 18 schools of the University of Lisbon, regarding the increased visibility of the ULisboa repository, in the period of the COVID-19 pandemic, which corresponds mostly to the year 2021. This increase was evident in the number of downloads that users (both in Portugal and abroad) made from this repository.

From the analysis of the data obtained the dissemination and promotion of the repository is mostly carried out by the web site, by recommendations of the library staff and by training actions.

On the other hand, the library staff uses the ULisboa repository to: deposit the scientific information produced by lecturers, researchers and students; carry out bibliographic research to support students in their academic activities, and support the development of research by librarians.

Librarians' perception is that access to the ULisboa repository is generally through each school library's webpage, or via the RCAAP - Portuguese Open Access Scientific Repository webpage, or directly from the web address <https://repositorio.ul.pt/>.

The activities carried out by the library staff in the institutional repository are the deposit of Master's dissertations, PhD theses and scientific papers. In

addition to these activities, metadata is loaded and evaluated and links are established to the catalogue of the University of Lisbon library system for both paper and digital documents.

There are advanced functionalities in the Repository of the University of Lisbon that enable interoperability between governmental and non-governmental portals and databases linked to the areas of Science, Research and Higher Education development, namely the RENATES platform - National Register of Theses and Dissertations<sup>1</sup> and the ORCID - Open Researcher and Contributor ID<sup>2</sup> and CIÊNCIAVITAE<sup>3</sup> system.

The RENATES platform collects official information on doctoral theses and master's dissertations carried out in Portugal. The ORCID - Open Researcher and Contributor ID is a non-proprietary alphanumeric code to uniquely identify researchers and other academic authors and their collaborators. CIÊNCIAVITAE is a national system for Science curriculum management.

When the librarians were asked about the advantages of the advanced features of the ULisboa Repository, they mentioned that they use the interoperability features with the RENATES platform and the ORCID record. They also stressed that they take advantage of this institutional repository to respond to user requests regarding documents that are in restricted access. The functionality to import / export data to the CIÊNCIAVITAE system is less used.

The data obtained in this research are unanimous in relation to the optimization, in quantity and quality of the use of this repository, involving the following issues: promote your potential in relation to social networks; supporting open access to more scientific production; and, to have more visibility on institutional websites. Easier advanced search and developed more facilities associated are also to be considered.

Although there was an increase in the use of the repository in 2021, as initially verified, it is impossible to associate this growth with concrete actions developed by librarians. In the survey, they declared to maintain their usual routines, with no significant changes in the activities of the institutional repository. For this reason, only in the long term can more effective conclusions be drawn, allowing us to observe trends over the years regarding institutional repository use. Then, we can verify whether the pandemic and the forced distance it caused from libraries explains the increase in repository usage data, especially in 2021.

## **7. Conclusions**

The data from this study reveals that 13 of the 18 schools at the University of Lisbon actively collaborate in the University of Lisbon Repository project and considered it significant to answer a questionnaire on the subject of institutional repository.

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<sup>1</sup> <https://renates2.dgeec.mec.pt/>

<sup>2</sup> <https://orcid.org/>

<sup>3</sup> <https://www.cienciavitae.pt/>

Librarians and information managers at this university are conscious of the potential to improve this initiative.

This institutional repository is certainly an excellent system to achieve digital preservation and promote the worldwide visibility of scientific and technological production of professors, researchers and students.

Globally we conclude that the ULisboa repository presents the following characteristics:

- it is promoted on the web pages of the University, on the web pages of the Faculties, by the technical staff of the libraries and in training actions;
- it is an initiative used especially for the digital deposit and preservation of the University's scientific production and advanced bibliographic research;
- access is mostly via the library's website;
- the library of each faculty is responsible for keeping the repository up to date by depositing Master's theses, editing and validating metadata and creating interoperability links with the bibliographic catalogue of the University of Lisbon;
- The advanced operations of the repository are mainly used to make links to the RENATES platform, to answer the request for documentation which is in restricted access and to obtain statistical data on the use of this source of information;
- The University of Lisbon's repository could be used more to promote its potential in relation to social networks and enable open access to more scientific production.

The relevance of this study is based on the need to value and encourage Open Access in the country and in the world, through a more sustained knowledge of IRs. This objective contributes to promoting the development of science and stimulates other studies that can collaborate for the promotion of national policies for repositories, including more effective actions to map the results and impacts on the science of IRs, since there were no concrete actions developed by librarians, specially designed for the pandemic period, to promote and give visibility to the institutional repository.

However, studies like this contribute to the visibility and promotion of scientific knowledge, with its dissemination on a large scale driving informed, participative, and capable citizens to decide based on quality scientific information. In the future more studies are needed to demonstrate how the use of institutional repositories of University of Lisbon contributes to enhance science dissemination, research and researchers' visibility and promotes the access to knowledge, improving the quality of the information available on the web.

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