Developing a sustainable platform for open access publishing in Armenia

Tatev Zargaryan[1] , Ane Landoy[2] and Angela Repanovici[3]

[1]American University of Armenia, Armenia.
[2]University of Bergen, Norway.
[3]Transilvania University of Brașov, Romania.

Abstract. In 2017 two Armenian universities with the support of the University of Bergen teamed up within the project called "Developing a sustainable platform for open access publishing in Armenia".

The project started with a survey regarding attitudes and barriers of academic staff in Armenian universities to open access and institutional repositories.

This article will present the analysis of the OA survey results conducted with the American University of Armenia and Public Administration Academy of the Republic of Armenia. The article will be concluded with the recommendations on the developed IR guidelines, specify acquisition models taking into consideration the survey results.

Keywords. Institutional repositories, Open access, and open data, Digital scholarly communication models, IR collection development, Acquisition models, Armenian academic libraries.

"Our mission of disseminating knowledge is only half complete if the information is not made widely and readily available to society".
Berlin Declaration on Open Access to Knowledge in the Sciences and Humanities

1. Going Open Access

As a result of a mix of crisis and opportunity within the field of scholarly publishing, Institutional Repositories (IR) have been established at many academic institutions all over the world. IRs are closely connected with Open Access, as it is defined in the Berlin Declaration from 2003, which is signed by 635 nations and institutions globally. The need and growth of the registered Digital Open Access Repositories can be tracked in the opendoar.org statistics. They started in 2005 with 83 repositories and in 2020 April, the number is 5340. There are several definitions of IRs: according to Lynch (2003) "a university-based Institutional Repository is a set of services that a university offers to the members of its community for the management and dissemination of digital materials created by the institution and its community members", while Bell,

Foster, and Gibbons (2005) define Institutional Repository as "an electronic system that captures preserves and provides access to the digital work products of a community". Chang (2003) describes an Institutional Repository as a new method for capturing, collecting, managing, disseminating, and preserving scholarly works created in digital form by the constituent members of an institution. We see, however, that these definitions all capture the management and dissemination of the works by the members of an institution.

The background for IRs follows the growing importance of research being visible globally. However, the establishment of an institutional repository (IR) needs collaboration from a diverse set of stakeholders.

2. Open Access Initiatives in Armenia

Recently scholarly communication within the academic environment has been shaped immensely by the Open Access initiatives, with the purpose to make research articles in all fields openly available on the internet. Higher educational institutions, as a major scholarly communication hub, are responsible for the dissemination of knowledge as well.

Armenia joined the Open Access (OA) movement in 2007 when the Armenian National Academy of Sciences established two Open Access academic journals: the Armenian Journal of Mathematics and the Armenian Journal of Physics. Starting from 2007 until nowadays 20 major scholarly journals were converted into open access.

From 2007-2015, 18 OA repositories have been created in the Armenian National Academy of Sciences, they have 88,059 articles (retrieved from the www.asj-oa.am portal, 2019).

Although there were OA projects implemented by the support of the National Academy of Sciences, Armenia's university community, were not engaged in the OA movement. Armenia has never created any major OA policies or mandates. Armenian institutions did not sign Berlin Deceleration on OA. Armenian universities are not registered in the Registry of Open Access Repository Mandates and Policies (ROARMap) or Directory of Open Access Repositories (OpenDOAR). There is no visibility of Armenian research on any of the OA platforms on a university level.

Open Access and online publishing movement have influenced how research is being shared and published within the academic environment. The purpose of this is to make research findings openly available to the academic community and beyond. Higher educational institutions, as a major scholarly communication hub, are responsible for the dissemination of knowledge beyond their institutions as well.

From Armenian academic institutions American University of Armenia (AUA) was one of the first that created an Institutional Repository and made its academic output Open Access.

In 2017 a 2-year joint project "Developing a sustainable platform for open access publishing in Armenia" funded by the Norwegian Agency for International Cooperation and Quality Enhancement in Higher Education was initiated by the University of Bergen (UiB) AUA and Public Administration Academy of the Republic of Armenia (PAARA). Through this project, two Armenian higher educational institutions will work together on developing Open Access guidelines, Copyright policies, and create a sustainable platform for publishing the OA items. This collaboration will promote OA activities within Armenian higher educational institutions, support and empower the academic community in gaining more acknowledgments outside Armenia and join the efforts of supporting OA initiatives worldwide.

3. **"Developing a sustainable platform for open access publishing in Armenia"**

The Norwegian government has played a major role in supporting Open Access initiatives worldwide. The University of Bergen was an early signatory to the Berlin Declaration from October 2003.

In Bergen, researchers and students affiliated to the University of Bergen can make their scientific publications available open access through the institutional online research archive, Bergen Open Research Archive (BORA), or by publishing open access. BORA was one of the first IRs in Norway, built on a DSpace platform.

The project "Developing a Sustainable Platform for Open Access Publishing in Armenia" aims to support two Armenian Universities (AUA and PAARA) to develop institutional repositories and sustainable mandates for Open Access publishing in their universities. The University of Bergen library provides support with professionals who can guide and advise on the IR development processes and OA initiatives on a university level.

The final goal of the project is to increase the amount of Open Access publishing in Institutional Repositories, to make Armenian scholarly results visible globally. Develop institutional repositories and sustainable mandates for OA publishing.

AUA and PAARA will be the first higher educational institutions who will develop the IR platforms and support academic staff in gaining more acknowledgment outside of Armenia and support the OA initiatives worldwide.

4. Research method and Discussion; Pre and Post Survey results on the attitudes and barriers of academic staff in Armenian universities to Open Access and Institutional Repositories

Before starting the development of the IR and OA guidelines, in February 2018 an online survey was conducted with AUA and PAARA academic staff. The purpose of the survey was to understand researchers' attitudes to Open Access, and the development of good workflows for Open Access initiatives. Towards the end of the project, in October 2019, a similar final survey was distributed to the staff at the same universities. This survey was given after more training and information about OA and IR had been presented to the academic staff at the two universities.

The research method of the collected data was quantitative. Survey-Monkey software was used to create an online questionnaire. The survey had 13 questions, and it was disseminated via emails. The questionnaire was in English. From the 13 questions, 5 questions characterize the sample, the rest were the opinions on OA and IR, with one open-ended question. 100 responses were received from the two institutions: AUA and PAARA in Yerevan in February 2018, and 79 in October 2019. The number of academic staff in these institutions is 457: AUA 250, PAARA 207, and the number of answers represent 10% of the respondents surveyed. See Appendix A for more details about each question separately.

The sample is balanced, respects the institutions' hierarchical structure, the age and age groups are variables that divide the researched population into approximately equal lots, evenly distributed. Research is statistically validated; the structure of the sample respects the structure of the entire surveyed respondents.

In both surveys, most respondents strongly agree with the principles of OA, IR and OA Journals: 85% in 2018 and 76% in 2019 reply that they are in favor (strongly and mildly). It is interesting that in 2019 there is one respondent "mildly against". The number of "neutrals" has risen from 11% in 2018 to 20% in 2019. We would expect that the more information provided, the higher the number of respondents in favor of OA would be. In this case, it is not so, and we wonder why. However, in 2018 there were a number of librarians responding (11% of the sample). One explanation for slightly less favorable opinion in 2019 can, therefore, be that the librarians tend to be more knowledgeable and positive to the principles of OA. But when we compared the results from 2018 with and without librarians included, we found no significant differences. The 2019-result is therefore indicative of either "more information does not necessarily make researchers more in favor of OA", or "more information also makes researchers more aware of the problematic issues with OA".

¾ of the respondents in 2018 and 2019 are in favor of using OA repositories and publishing in OA journals.

Regarding the awareness of the University's IR achievement, in 2018 most respondents have knowledge of the existence of the repository, however, 24% do not know anything about the University IR. In the 2019-survey the question was rephrased to "Have you used the University IR?", and we found that 40% of the respondents had used the repository, and 40% had not.

When asked "Why not?" most respondents (40%) do not know the archiving process of IR in 2018 and 2019 and are worried few would see their work. Some also worry they will be plagiarized, or that they cannot publish the article in another environment. They do not want to archive papers that have not been peer-reviewed. They are also worried about IR feasibility, which indicates the low prestige of the IR.

All of these answers indicate that they do not know that IR is an archive of the university's scientific output, that only articles that have been published and passed through the review process will be uploaded.

The majority of the respondents want to archive scientific articles but mostly want to be helped in the process of self-archiving by library staff or those involved in IR or administrative management of the university. Many do not want to archive works in other disciplinary sites.

The survey indicates that OA principles are not sufficiently disseminated, greater efforts should be made by the university library to inform the academic community about the importance of OA, increased opportunities for collaboration, internationalization, visibility, and impact. 67% of respondents do not want to load IR jobs. This shows that they do not know about the benefits of publishing in IR: IR needs to be advertised more for visibility and impact.

5. AUA and PAARA

Within this project, only AUA and PAARA in Armenia have created the IR guidelines as academic institutions.

Among universities and other educational institutions, AUA is the only university that has established an IR. In 2013 AUA developed the first university-based Institutional Repository (IR) in Armenia. The IR's mission is focusing on the idea of going Open Access and contributing towards the 'Knowledge Without Boundaries' statement. AUA's digital content includes Master's theses, working papers, course materials, audio and video materials, images, books, chapters, journal articles, publications based at AUA, departmental newsletters, conference materials, presentations, AUA administrative documents, and more. The link to AUA's IR is https://dspace.aua.am/xmlui/

In 2018 AUA's IR contained 395 student theses, openly available, but only 4 faculty publications, and they were not open. The rest of the repository includes 134 digital images (not open) and 476 University Archives and Administrative Records (also not open). This does not give the IR its proper role to enhance the impact and visibility of the university. This does show that AUA still needs to have proper IR and OA guidelines that will be approved university wise.

When it comes to PAARA no IR was established before this project. They as well choose DSpace, free/open-source software developed by MIT Libraries. The link to the PAARA's IR is http://dspace.paara.am/xmlui/

6. Selection of the Repository software

In 2013 the DSpace was selected and installed as a platform at AUA where all the digital content of the university is collected and stored. The main point of selecting the software was its flexibility for customization. AUA is also part of a consortium called American international liberal arts institutions (AMICAL) and many AMICAL member Institutions use DSpaceas well.

Unlike AUA, PAARA never had the experience of creating the IR and through the project, they managed to follow the UiB's and AUA's steps; installed DSpace, and helped in developing corresponding IR guidelines.

DSpace is open source software, it is lean-agile and flexible for customization. It is easy to use and has a user-friendly interface. With a large community of users, it has a good and very well-functioning support community.

7. IR collection development strategies: OA and IR guidelines

The survey results and the corresponding recommendations were taken into consideration while creating the guidelines. These guidelines will also help to regulate the development of the IR and support to the academic community at large.

AUA and PAARA have decided to follow the following pattern as a base for the OA and IR guidelines.
- Community and Collection Guidelines
- Content and Format
- Use of Guidelines
- Submission and Access Guidelines
- Withdrawal Guidelines
- Metadata
- Preservation and Archiving Guidelines
- Copyright Policy

Besides the IR guidelines, there are also Withdrawal and Embargo forms, Agreement for Digital Publishing Form, and a Glossary.

All the guidelines were created considering the university's mission, Copyright Law requirements, and academic staff benefits.

The guidelines will be translated into Armenian as a base for other institutions as well. The guides are all available online at http://oapa.aua.am/index.php/publications/.

8. Acquisition models

Since each institution is different and has different missions and objectives, the acquisition strategies and models can be different, but it was decided to create an official form where the authors of the items will first put their signature and give the right to put their items online in the IRs'.

All the items are collected from the departments or from the authors with the signed "Agreement for Digital Publishing Form". All the authors are also the copyright holders of the items. University only provides free space and follows up with the archiving procedures. All the older theses that have no agreement signed by authors, will be digitized and put under embargo unless the author agrees to make it available to the public.

In case the copyright holder does not wish to publish his work online as an OA paper, the item will be removed from the IR.

9.   Recommendations and Conclusion

The survey results show that the lack of trust comes from little knowledge and understanding of IR. What is the role of the university and how the publishing and archiving processes of the articles are happening in the IRs. To tackle all the issues related to the establishment and the development of the IR repositories and OA policies, AUA and PAARA should follow the following recommendations

- Suggest an Action Plan towards adopting self-archiving or OA mandates/policies at least on the university level.
- Create a quality control mechanism workflow to establish a reliable and secure IRs.
- Use the established IR guidelines to communicate with the academic staff more effectively and make the process of the article acquisition and publishing in the university IRs more reliable,
- Use the created IR policies/guidelines to follow up on the Copyright licenses and keep the IRs as Open Access as Possible and As Closed as Required.
- Promote IRs within other higher educational institutions extensively. It is desirable to also involve the Ministry of Education, Science, Culture, and Sport of the Republic of Armenia.
- Continue promoting and developing the IRs collections, disseminate OA principles through workshops and seminars to a wider public.

● Create visibility and reliability through registering the IRs in The Registry of Open Access Repository Mandates and Policies (ROARMap) and Directory of Open Access Repositories (OpenDOAR) databases.

As a conclusion, both university libraries developed IR platforms and guidelines. However, no OA mandates/policies are developed yet. It's a long process that needs to have the university administration's approval first. To achieve this goal the project results will be shared with university administration and community at large. The guidelines will be translated into Armenian and act as a good start for other universities as well. The dissemination and promotion of the IR will be done via workshops and seminars and through the Open Access week in October. The project website will be a good resource for delivering news and updates to the larger community.

Appendix A
Analysis of Research Results

The preliminary results of the answers to the questions related to the attitudes of academic staff and researchers to the open-access Institutional repositories are presented in the tables.

Q4: Opinions about open access
In 2018

Q4 How do you feel about the principles of Open Access?
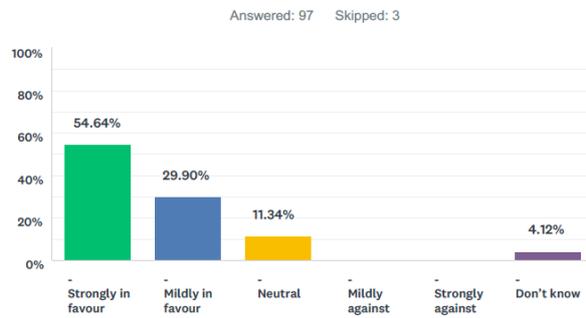
In 2019

Q4 What is your opinion about the principles of Open Access?
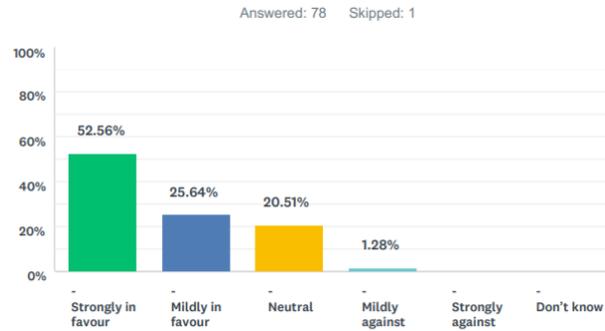
Q5: The Opinions on IR
In 2018

Q5 How do you feel about using Open Access repositories?

Answered: 98   Skipped: 2

Strongly in favour 46.94%, Mildly in favour 32.65%, Neutral 16.33%, Don't know 4.08%
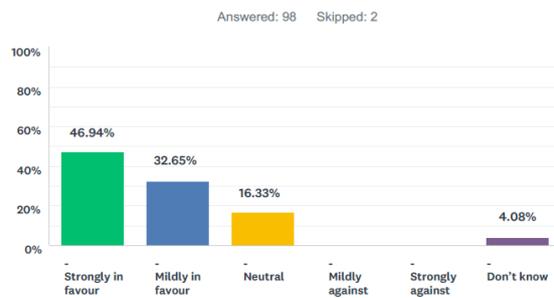
In 2019

Q5 What is your opinion about using Open Access repositories?

Answered: 78   Skipped: 1

Strongly in favour 48.72%, Mildly in favour 28.21%, Neutral 23.08%
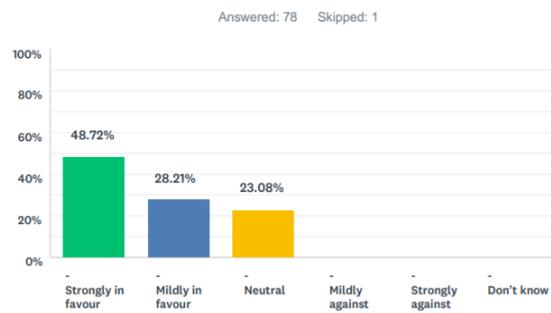
Q6: Opinions about OAJ
In 2018

Q6 How do you feel about publishing in Open Access journals?

Answered: 99   Skipped: 1

Strongly in favour 52.53%, Mildly in favour 28.28%, Neutral 16.16%, Strongly against 2.02%, Don't know 1.01%
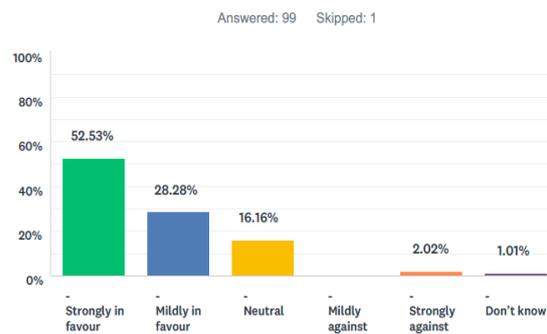
In 2019

Q6 What is your opinion about publishing in Open Access journals?

Answered: 77   Skipped: 2
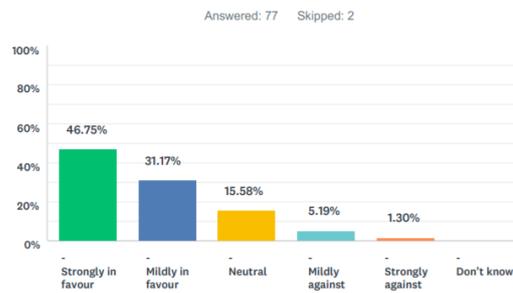
Q7: How they found out about IR?
In 2018

Q7 Do you know about University Institutional Repository?

Answered: 100   Skipped: 0
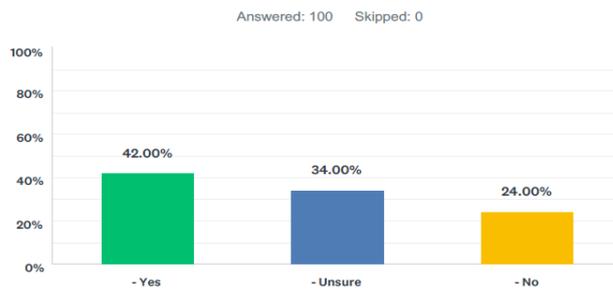
In 2019

Q7 Have you used the University Institutional Repository?

Answered: 76   Skipped: 3
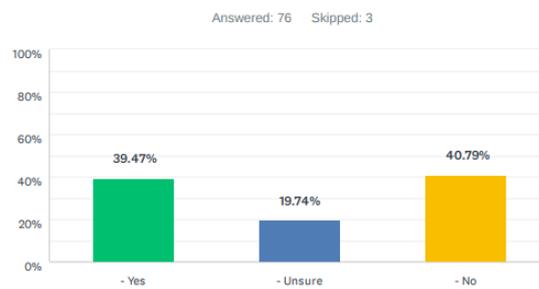
Q8: Preferences to archive their works in IR
In 2018

Q8 If yes, do you currently make any of your publications available in the Repository?

Answered: 89   Skipped: 11
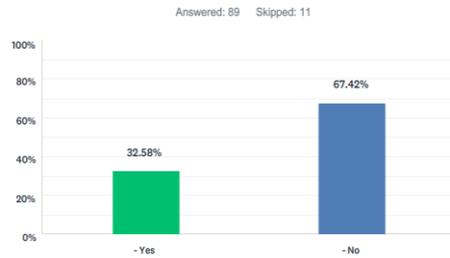
In 2019

Q8 If yes, do you currently make any of your publications available in the Repository?

Answered: 57   Skipped: 22
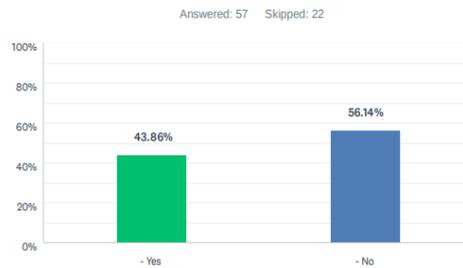
Q9: Reasons why respondents do not want to archive in OA their scientific production
In 2018

Q9: If your answer is "No" or "Not Sure" to the previous Question, is it because:

Answered: 24   Skipped: 15
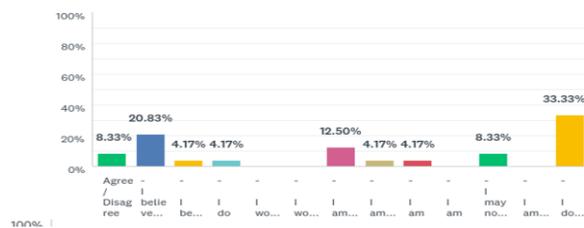
In 2019

Q9 If your answer is "No" or "Not Sure" to the previous Question, is it because:
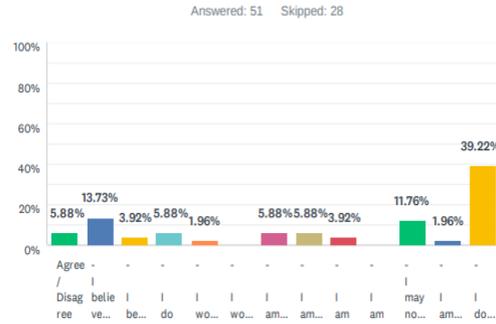
Q10: Type of publications for IR
In 2018

Q10 What types of publications would you make available in the University Repository?:
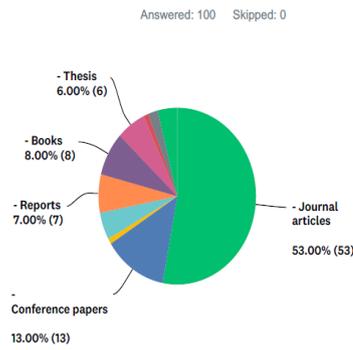

In 2019
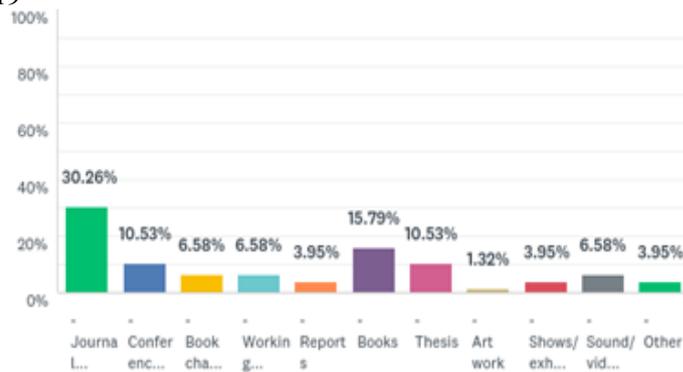
Q11: Self-archiving options
In 2018

Q11 Do you deposit publications yourself (self-archiving)?

Answered: 98   Skipped: 2

- Yes: 39.80%
- No: 60.20%
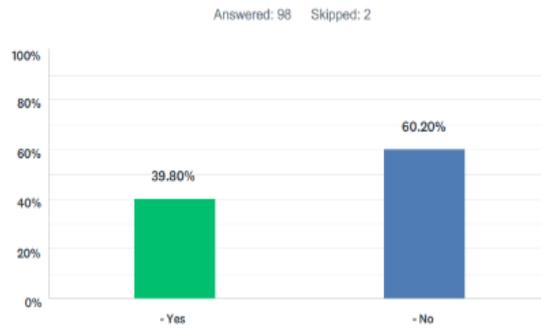
In 2019

Q11 Do you deposit publications yourself (self-archiving)?

Answered: 76   Skipped: 3

- Yes: 48.68%
- No: 51.32%
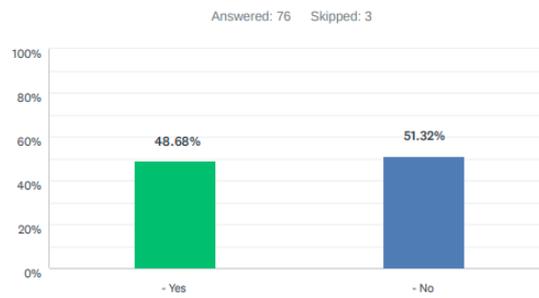
Q12: Willingness to archive.
In 2018

Q12: Would you be more interested in letting others deposit for you?
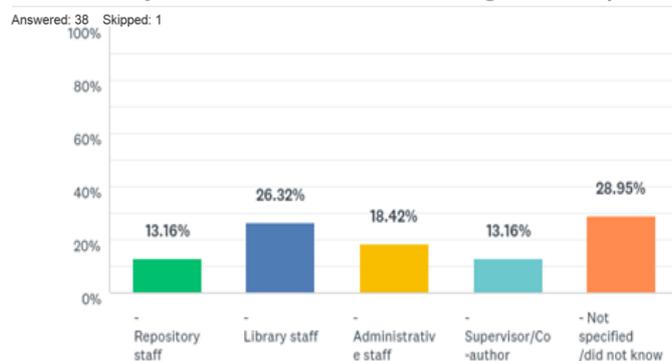
In 2019

Q12 Would you be more interested in letting others deposit for you?
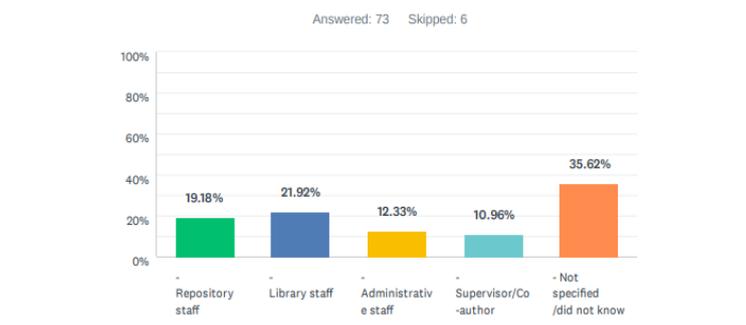
References

Academic Libraries. *Community & Junior College Libraries, Vol. 18* Issue: 3-4, 137-150,https://doi.org/10.1080/02763915.2012.799028

Bell, S., Fried Foster, N., & Gibbons, S. (2005). Reference librarians and the success of institutional repositories. *Reference Services Review. Vol. 33* Issue: 3, pp. 283-290.

Chang, S. (2003). Institutional repositories: The library's new role. *OCLC Systems & Services: International Digital Library Perspectives. Vol. 19*Issue 3, pp. 77-79.

Degroff, H. (2016). Preparing for the Research Excellence Framework: Examples of Open Access Good Practice across the United Kingdom. *Serials Librarian*, *Vol. 71,* n. 2, p.96–111,. Retrieved from http://search.ebscohost.com/login.aspx?direct=true&db=a9h&AN=118912986&site=ehost-live.

Jain, P. (2011). New trends and future applications/directions of institutional repositories in academic institutions., *Library Review, Vol. 60* Issue: 2, pp.125-141, https://doi-org.pva.uib.no/10.1108/00242531111113078

Kanu A. Nagra (2012) Building Institutional Repositories in the Academic Libraries, *Community & Junior College Libraries, Vol. 18* Issue: 3-4, pp. 137-150, DOI: 10.1080/02763915.2012.799028

Lagzian, F., Abrizah, A., Mee Chin Wee, (2015) Critical success factors for institutional repositories implementation. *The Electronic Library, Vol. 33* Issue: 2, pp.196-209, https://doi.org/10.1108/EL-04-2013-0058

Lovett, Julia, Rathemacher Andrée. (2014). Open Access and the Institutional Repository. *Technical Services Department Faculty Publications*. Retrieved fromhttps://digitalcommons.uri.edu/cgi/viewcontent.cgi?article=1074&context=lib_ts_pu bs

Lynch, C. A. (2003). Institutional repositories: Essential infrastructure for scholarship in the digital age. Portal: *Libraries and the Academy, Vol. 3* Issue: 2, pp. 327-336. doi:http://dx.doi.org.pva.uib.no/10.1353/pla.2003.0039

Marsh, R. M. (2015). The role of institutional repositories in developing the communication of scholarly research. *OCLC Systems & Services: International digital library perspectives, Vol. 31* Issue: 4, pp.163-195, https://doi-org.pva.uib.no/10.1108/OCLC-04-2014-0022

Open Access portal in Armenia. (n.d). Retrieved from http://www.asj-oa.am/index.htm

Open Access in Armenia. (n.d), EFIL webpage. Retrieved from https://www.eifl.net/eifl-in-action/open-access-armenia

Schmidt, Birgit; Kuchma, Iryna. (2012). *Implementing open access mandates in Europe - OpenAIRE study on the development of open access repository communities in Europe*. Universitätsverlag Göttingen. Retrieved fromhttps://www.oapen.org/search?identifier=610312

Subbiah, Arunachalam. (2004). Open access and the developing world. *The National medical journal of Vol. 17* Issue: 6, pp. 289-91. Retrieved fromhttps://www.researchgate.net/publication/7996482_Open_access_and_the_developi ng_world?enrichId=rgreq-6057bee8d702036e35f7f3fb9f210d7b-XXX&enrichSource=Y292ZXJQYWdlOzc5OTY0ODI7QVM6OTkxMjI3ODY4NjUxO DJAMTQwMDY0NDEyMjYzMQ%3D%3D&el=1_x_3&_esc=publicationCoverPdf

Ware, Mark. (2004) Institutional repositories and scholarly publishing. *Learned Publishing, Vol. 17* Issue: 2, pp. 115-124,https://doi.org/10.1087/095315104322958490