THE TRANSFORMATIVE ROLE OF UNIVERSITY LIBRARIES AND OTHER MEMORY INSTITUTIONS FOR CITIZEN SCIENCE AND OPEN SCIENCE IN THE BALTICS

Project Result (PR) 2

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The Library of Kaunas University of Technology

Project Number: 2021-1-EE01-KA220-HED-000031125

Project Acronym: LibOCS

Project Title: University libraries strengthening the academia-society connection through citizen science in the Baltics

This project is funded under the Erasmus+ KA2 Strategic Partnerships program.

October 2022

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Abstract

Citizen Science as a part of Open Science ensures the range of options for libraries and

other memory institutions (museums, archives) to widen their scope and strengthen their

role in support of research and society. The report includes the results of the research done

with the participation of memory institution specialists, professional researchers, citizen

scientists, and volunteers from all Baltic countries (Estonia, Latvia, and Lithuania). Surveying

done during the research helped to determine the overall understandings of respondents

about the research activities and projects with civic engagement, and find out their opinion

and experience regarding the collaboration in Citizen Science projects and in research

activities among specialists of memory institutions, researchers, and citizen scientists. The

report includes research data analyzed and interpreted mostly by focusing on the role of

memory institutions and their potential in science, as well as by acknowledging and

formulating the needs for progress.

Keyword list: civic engagement, collaboration in research, role of library, library, museum,

memory institution, citizen science, open science

2



Table of the contents

Introduction	4
Methodology of the first survey	5
The results of the first survey	6
Methodology of the second survey	11
The results of the second survey	11
Conclusions and recommendations	17
References	19
Appendix A. Survey "Collaboration for research: researchers, citizens, memory institutions specialists, and their roles": questionnaire for respondents	21
Appendix B. Survey "Collaboration on research between researchers, citizens, memory institution specialists": questionnaire for memory institutions specialists	
Appendix C. Survey "Collaboration on research between researchers, citizens, memory institution specialists": questionnaire for professional researchers	
Appendix D. Survey "Collaboration on research between researchers, citizens, memory institution specialists": questionnaire for amateur researchers and citizens (volunteers)	

Introduction

The study report "The Transformative Role of University Libraries and other Memory Institutions for Citizen Science and Open Science in the Baltics" has been developed within the Erasmus+ program second framework strategic partnering project "University libraries strengthening the academia-society connection through citizen science in the Baltics – LibOCS". The summaries of this report are available in project partners' national languages under project materials collection on Zenodo HERE.

The aim of the study "The Transformative Role of University Libraries and other Memory Institutions for Citizen Science and Open Science in the Baltics" was to explore the expansion of the role and involvement of memory institutions (Library, Museum, Archive), especially libraries in research. The research was done in the context of Open Science and Citizen Science (further on – CS) in particular. First task of the study was to find out the experience of all three parties involved in the arranging of the scientific projects and activities: professional researchers (further on – researchers), librarians and specialists of other memory institutions (further on – MIS), citizen scientists or citizens engaged in science or volunteers (further on – citizen scientists). The second task was to draw a picture of the situation in general and a living understanding of CS, as well as of the collaboration among the parties involved, especially with libraries.

During research "Drivers and Barriers of Civic Engagement in Open Science and the Role of University Libraries in the Baltics" in the first stage of the LibOCS project it was acknowledged that here in the Baltics there are very few Citizen Science projects involving librarians (Kaseorg, 2022). Based on scientific literature and observing practice, it can be concluded that CS activities are attractive and widespread in other memory institutions as well (Dobreva, 2015; Bite, 2020), too. In order to extend feedback opportunities, the authors

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of the study decided to widen the range of respondents, and to do the surveys not only among librarians but also among staff of other memory institutions.

During the study, two surveys were conducted, the methodology and results of which are clearly presented in the following chapters. The quantitative method was chosen to ensure the fast gathering of information in short period. The running of the first survey was assumed significant since there was quite a little specific information about the engaged parties and it was relevant to identify as many CS projects or research activities with civic engagement in the Baltics as possible. And the second survey served to trace the experience and views of respondents as participants in CS projects or research activities with civic engagement.

Methodology of the first survey

As mentioned earlier, the study consisted of two surveys. The aim of the first survey was to get the picture of persons involved in CS projects, and gather information on particular projects that could be counted as CS project.

Survey was designed as semi-structured questionnaire. The semi-structured questionnaire format was chosen because it allows to collect various types of data and gives a broader insight on the respondents' views on the topic (Smyth, 2016). Questionnaire included seven questions with suggested responses and six open questions along with six questions regarding the demographic data of the respondents (see Appendix A). The questionnaire was conducted in English.

The *QuestionPro* tool was used for designing this survey and collecting data. The authors had little experience in using this tool for data analysis, so *Microsoft Excel* was additionally used for data analysis.

The first survey was carried out online among employees of higher education and research institutions and other memory institutions in the Baltic States, as well as other citizens interested in research. It was disseminated in the period from April to the beginning of July 2022.

A content analysis method was used in analyzing the responses given on open questions where the extracts of the respondents' answers were reviewed as a whole, compared and grouped by creating categories, and the conclusions were drawn up. Content analysis can be defined as a technique to analyze message characteristics in a systematic,

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objective, quantitative way. It is especially useful when analyzing natural language (Neuendorf, 2017), in this case - answers to open ended question.

The results of the first survey

The questionnaire was fully completed by 127 respondents. However, a larger number of respondents (208) started to fill in the questionnaire. Most often the questionnaire was discontinued at the question about their associations and understandings regarding citizen engagement in research activities and CS or whether they know or don't know any CS project or activity in general. The authors of the study assume that this means that the activity is still unfamiliar and little known, or that it is difficult to find the appropriate words to describe it because it is something unusual.

More than half (86 respondents) of the 127 respondents shared their associations, by answering the question "Please share your understanding and associations of citizen engagement in research activities or Citizen Science". A number of respondents gave their views on CS in general, they varied from positive to negative. Only one respondent mentioned the library in his response. Associations given by respondents were analyzed with a content analysis method by categorizing them into four thematic groups: research topics, research goals and results, research activities, attitudes and values. Mostly the respondent associations with CS are related to research activities, those were mentioned 59 times. This includes different stages of research: the initiation of research, communicating one idea to researchers and providing funding (8), data collection (26), data analysis (4), data processing e.g. transcribing, digitizing, and text correction (5). Ten respondents associated CS with members of the public participating in surveys and interviews.

The second category that raised the most associations with CS is research topics. Eight of twenty mentioned topics are related to nature observations (birds and plants), four to local history, and four to genealogy and family history. Four of the mentioned topics are related to communities, social identities, and differences.

Eighteen of the responded associations were categorized as attitudes and values – terms that respondents used to describe both participants of CS projects and principles that CS embodies. For example, positive personal qualities like curiosity, activity, being smart, and being helpful were mentioned as well as a positive impact on the community and society: empowerment, freedom, justice, voluntary involvement, and collaboration.



Part of the respondents' answers highlighted results and aims that CS projects can contribute to improving the quality of life for individuals and communities (5), solving specific problems (2), educating the society, and improving knowledge (3). On the other hand, the more negative respondent associations mentioned a lack of appropriate qualifications among citizens to do research, difficulties to organize and find time to participate in CS projects, and communication differences between professional and citizen scientists.

If organizing the fully completed questionnaires, 58% (74) were respondents from Lithuania, 25% (31) from Estonia, and 17% (22) from Latvia. The highest level of response was achieved among memory institutions — most respondents were from libraries - 50% (63), museums - 16% (21), researchers - 21% (27), and citizen scientists - 13% (16); no responses were received from the archive specialists (*figure 1*).

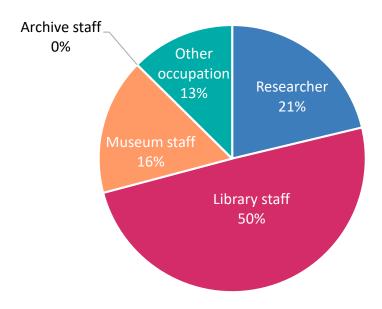


Figure 1. Respondents by occupation

Most of the respondents – 53 % (67) in specific, responded positively about whether they are informed about any of the research projects or other activities with citizen engagement (*figure 2*). 12 respondents from those 67 are involved in such activities currently. The answers of 9% (12) respondents show that there is no clarity on whether any citizens are engaged in those projects they know of. And 38% (48) respondents declare not knowing any of such projects, however, among these respondents' answers, there were at least 12 cases of research activities with library specialists engaged.



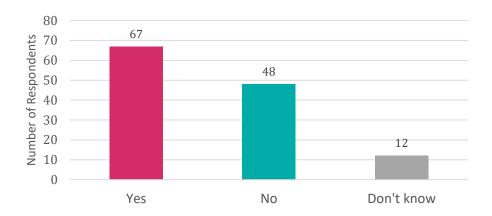


Figure 2. Do you know any research activities or projects with citizen engagement?

Almost half of the respondents – 49% (62) are negative with "no" in question about knowing any research projects or activities with MIS engagement, and 42% (54) are positive with "yes", 9% (11) answered with "I don't know (figure 3). Unfortunately, it is unclear if along with MIS engagement also citizen scientists were involved in the same projects. From 54 positive answers 39 respondents also have said they are aware of research activities with citizens' involvement. However, the authors of the study cannot be sure if only one activity is meant or several various ones. Librarians are the most aware of CS projects among the respondents. Going into detail, positive 'yes' answers to this question were mostly given by library staff (27), followed by museum staff (12), researchers (11) and citizen scientists (4).

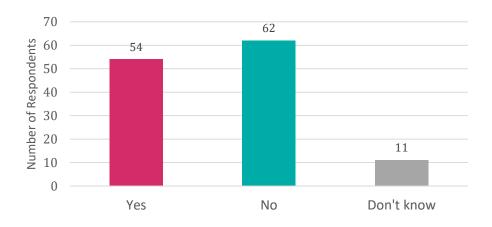


Figure 3. Do you know any research activities or projects which engage specialists from memory institutions (libraries, museums, archives)?

To get a detailed understanding of the ways library staff is usually involved in CS projects, the question was asked, and the responses showed that it can indeed vary (*Table 1*).



Table 1. In what way are library specialists involved?

No.	Options for answers	The number of respondents' answers
1	They provide a space and a platform for engaged participants and like-minded people (onsite or online; including technical equipment)	35
2	They are research or project initiators (generating the research idea, problem definition etc.)	29
3	They assist with finding relevant information/theoretical materials	27
4	They organize educational events about the research process and Citizen Science options	27
5	They perform as specialists on archiving publications, data and other research results	26
6	They provide educational materials about the research process and Citizen Science options	24
7	They assist with distributing the research results	23
8	They do research on librarianship and information science topics	20
9	They do research on history related topics	15
10	Don't know	5
11	Other	0

"They provide a space and a platform for engaged participants and like-minded people" was the most frequently chosen answer. Unlike the authors of the study thoughts, generating the research ideas and initiation of the research projects comes as the next most



common answer to this question. The next most common response is the typical association with library services, which is searching and finding related information. Afterward, the library's role was spotlighted also as providing educational materials about the research process and CS options. A significant part of respondents has the expectation that the library staff is professional in guiding through the scientific publications, research data, and other results archiving. The fewer respondents chose the response "other", however, there were no explanations added on how exactly the library staff could be engaged in research projects. There were no significant differences identified among respondent groups and countries.

Some of the respondents, 14 to be specific, declare to be a part of research activities with citizen engagement currently: 6 of them are library staff, 4 researchers, and 4 museum employees. It was noticed while reading through all the responses on the engagement status of each respondent that MIS is participating in various activities, mostly in consulting of information search and various data as well as in the production of research results. Several responses were indicating various roles of respondents in research, however, those are not separated, for example, a librarian can work as a specialist in the information field, and at the same time, they can participate in various citizen-targeted activities (as citizen scientist).

The answers of all respondents were quite similar in assessing the importance of collaboration in science between various engaged parties (researchers, MIS, citizen scientists, politicians), there was no single one that was put forefront, however, the lowest of importance and impact was the collaboration between researchers and politicians. The most important contribution, according to respondents, is the collaboration between researchers themselves, then the researchers and archive specialists, after that also the library staff and museum staff were pointed out; the collaboration between researchers and citizen scientists was given the least importance.

The conducted questionnaire helped to identify more than 25 research projects and activities involving citizens held in Baltic countries, as well as 7 international initiatives. The biggest part of those activities is related to history, the collection and preservation of national identity, and cultural and historical heritage. Some of those activities are organized in museums. The data are mostly similar in all Baltic countries: in Estonia, 10 local projects are running and Estonians participate in 4 international projects, at the same time in Latvia - 12 local projects are identified while no international ones, in Lithuania - 7 local and 6 international ones.

However, when reviewing the answers of the respondents in general, it should be

concluded that most of the answers provide information about projects and activities

involving citizens, but not of a research nature, for example, neighborhood development,

research on society in general, digitization projects (with no task for citizens), educational

projects, various events, and other general responses.

Methodology of the second survey

In the second survey, the data on collaboration praxis and options in research

activities were gathered. There were three respondent groups drawn out: MIS, researchers,

and citizen scientists with experience in research activities or projects. The second survey was

distributed to all the respondents, who gave the permission to be involved in the next part of

the research, as well as to participants of other CS projects. It was distributed in the period

from June to the beginning of September 2022.

There were three versions of the semi-structured questionnaire built and distributed

in the second survey, each of them adapted to each respondent group, while key questions

remained unchanged. The questionnaire targeting the MIS had nine questions with suggested

responses and nine open questions along with three questions regarding the demographic

data of the respondents (see Appendix B). The questionnaires each targeting researchers and

citizen scientists consisted of eight questions with response options provided and nine open

questions along with two questions regarding the demographic data of the respondents (see

Appendix C and Appendix D).

As in the first survey, the QuestionPro tool and Microsoft Excel were used here as well.

Content analysis method was used to draw conclusions about open questions.

The results of the second survey

The respondents of the second part of the study were asked to share their insights

and thoughts on collaboration in research projects and activities with the citizens involved.

The authors were gathering data from all three parties: MIS, researchers, and citizen

scientists. There were quite a similar number of respondents in each group: 39% (23)

researchers, 28% (17) MIS, 33% (30) citizen scientists (figure 4). During the survey,

respondents were asked to choose the most recently participated in or the most memorable

research project or activity with civic engagement.

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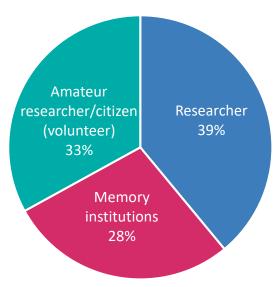


Figure 4. Respondents by occupation

Altogether there were 60 respondents with fully completed valid questionnaires. In terms of countries, the responses of the respondents were as follows: Latvia – 52% (31), Lithuania – 28% (17), Estonia – 20% (12). Almost 27% (16) of them are currently engaged in research activities with citizen involvement and 40% (24) of the respondents were involved in such activities in the last three years. There was a higher level of interest in completing the questionnaire, the tool recorded 319 questionnaires that were started to fill but not finished. The interest of possible respondents decreased at the questions about the specific experience evaluation and the definition of the role and its description in certain research activities. In the authors' thoughts, sometimes society members are active in participating in science but act too shy to call themselves citizen scientists, moreover, MIS has faced situations, where multiple roles operate simultaneously and it is difficult to determine where MIS is on duty and where the role of the citizen scientist begins, and where he is an active society member on his spare time.

Each group of respondents was invited to evaluate their understanding of CS. In the responses of researchers, the dominating assessment was ranging from medium to high-level knowledge of the issues while among citizen scientists it was in between weak and good one.

The MIS are evaluating their knowledge and conceptual understanding of CS as average in general (figure 5). They spotlight the information and data retrieval, including consulting on information quality and its importance in the research process in general as the key tasks they have done in research projects. Next, the project management, coordination, or tasks closely related to organization issues is the next most frequently mentioned, as well



as communication in fulfilling the various aims and stages of research projects is mentioned just as much.

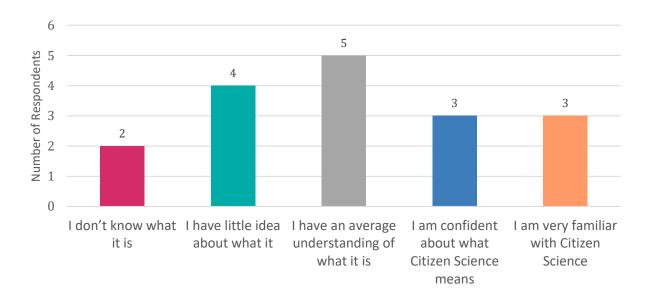


Figure 5. How familiar are you with the concept of Citizen Science? (Answers from MIS)

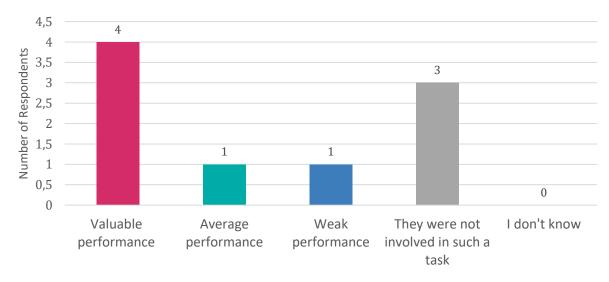


Figure 6. Evaluation of performance of memory institutions specialists as specialists on archiving publications, data and other research results. (Opinion of researchers)

The authors of the study emphasized that the task of being a specialist in archiving and long-term preservation and access to research results is rarely fixed in the answers. When asked to evaluate other memory institution work in archiving publications, data and other research results, in general, it is called valuable performance. Researchers are evaluating the MIS performance as valuable or uninvolved at all (figure 6). Citizen scientists are evaluating it



as average. The dissemination of the research results is evaluated as high-level by both researcher and citizen scientists.

It was found quite interesting that if MIS are involved in developing the online platform for the CS project or activity, their performance is highly evaluated in all three groups of respondents. The library staff can be very useful as experts in the questions about interfaces of online products – content and functions-related, in organizing the best solutions and information, making the exchange of information more efficient. MIS are involved in other tasks – informing people of any CS activities, participation opportunities as well as educational possibilities on CS – in particular, how the research process itself is developing, whether there is a place for society and its engagement options. In general, researchers evaluate the MIS involvement as good or average or admit not involving MIS in such tasks. The citizen scientists give quite similar responses except highlighting the education performance as very controversial - both as weak and high-quality. The results of the dissemination of information and promotion of initiatives are difficult to measure and therefore evaluate. Effective communication is the key to the successful engagement of memory institutions services and CS. The role of libraries and other memory institutions is highly rated in the position of providing meeting spaces both onsite and online, the last one also has had high success lately.

It is also worth mentioning that it was clear from the data obtained from the MIS and citizen scientist questionnaires that not all research activities that involved citizens also involved researchers (figure 7 and 8).

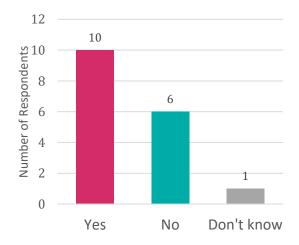


Figure 7. Did professional researchers participate in the project/activity?

(Answers from MIS)

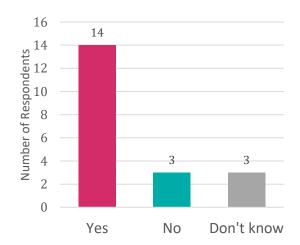


Figure 8. Did professional researchers participate in the project/activity?

(Answers from citizen scientists)



The researchers responded with "yes" - 61% (14) and "I don't know" - 39% (9) when asked whether they would like to cooperate with MIS, and there were no "No" responses. At the same time, citizen scientists responded with "yes" 55% (11), "no" - 10% (2), and 35% (7) with "I don't know". The MIS themselves are very confident that they want to cooperate, answering "yes" - 76% (13), 6% (1) said they are not interested in cooperation, while 18% (3) chose the answer "I don't know" (figure 9).

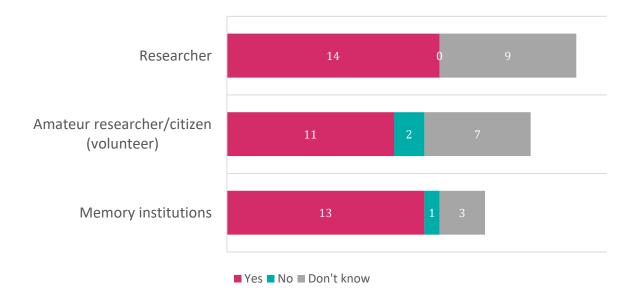


Figure 9. Would you like to collaborate with professionals from memory institutions (libraries, museums, archives) in research projects/activities in the future?

Considering the positive aspects of collaboration with researchers, MIS name those where the researcher is helping to understand the research methods, contexts, the process of the research project, and also see the problems from different perspectives, giving the possibility to participate in solving the global issues, as well as participate in teamwork and to get the brand new experience. On the other hand, the negative aspects are highlighted as follows: complicated terminology and uncommon understandings as well as the misunderstanding that sometimes people want to do something just for fun. Considering the positive aspects of collaboration with citizen scientists, MIS name the sharing of opinions, perspectives and knowledge, giving help in formulating the research problem, gathering of big data, the development of an educated community, enthusiasm, creativity, pride and sincere interest in the research process and the performance of tasks, as well as the formation



of the brand new community. Consequently, there is a willingness to collaborate in general, but also a relatively high level of ignorance which must be considered when developing the MIS services and their recognition.

There were almost no significant conclusions regarding the data from responses given to open questions about what are the expectations on MIS participation in research projects since there were few responses given, those were also short and insignificant. However, most respondents seem to expect information dissemination tasks, various practical help and advice, as well as support in research data archiving and other aspects of data management, citizen involvement and coordination and attractive ideas on how to conduct research, genuine interest in the project, and finally, having a great time participating.

The examined responses to the questions above are closely related to conclusions derived in LibOCS' another study "Drivers and Barriers of Civic Engagement in Open Science and the Role of University Libraries in the Baltics" (Kaseorg, 2022).

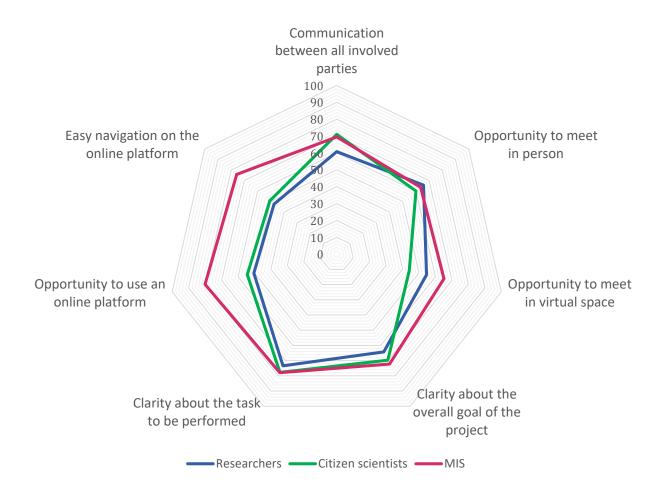


Figure 10. In general, how do you evaluate the following aspects in the project/activity community among participants?

The citizen scientists ranked the clarity on the task to be performed, communication between the parties involved, and clarity on the overall project/activity target as the most important ones (figure 10). The possibility of online meeting was rated as the least important. However, MIS has declared in their responses all aspects as of high or average importance. If looking closely at the gathered data, the MIS opinion contrasts with the researchers' opinion since they ranked the highest importance on the possibility of using an online platform, clarity on the task to be performed, easy navigation on the online platform, and the lowest importance - the possibility of meeting onsite.

Therefore, it can be concluded that MIS could be highly professional at understanding the benefits of using online platforms in research with citizens involved, also such platforms could be used highly efficiently (in technical and content aspects) and could substitute or reduce the initial need for meeting onsite. According to the gathered data, full clarity on the tasks for each party involved in the CS project is of the most importance, and MIS could be involved in ensuring the effectiveness of all the relevant aspects.

Conclusions and recommendations

The responses received in both questionnaires from the three groups of respondents – MIS, researchers, and citizen scientists – lead to the conclusion that CS is perceived positively, it is closely related not only to support science but also to society's welfare and education. Respondents from all three surveyed groups were able to both give examples of such activities and confirm their participation in CS projects.

The gathered data show the directions in which the contribution should begin in the first place so the MIS could act efficiently in the CS processes. The MIS themselves are very positive about their involvement in such activities, which is a solid first step in promoting their role in CS. This group should have a greater understanding of the current situation, objectives, and opportunities of CS. This would allow to identify the existing and required competencies, as well as assure the initiative to engage and collaborate with all parties involved in such projects.

It is also worth paying attention to the weaknesses mentioned in the questionnaire's responses regarding the in CS projects, such as the lack of competence of citizen scientists, quality of data, communication problems, lack of information and others, as these areas could have the greatest possible contribution of MIS. For example, librarians have experience in

organizing events, providing training and consulting, and understanding research processes and other relevant competencies. In the near future, it is expected to precisely identify the experiences and needs of researchers and citizen scientists in all stages of such projects to purposefully organize the MIS engagement in CS projects.

The answers of the respondents witness that MIS's role in research and CS in particular is expanding with the ability to perform the tasks related to the organization of research projects and activities, the research progress, including data management, community gathering, promotion of knowledge sharing and skills and others. Therefore, it can be concluded that the role of MIS is currently in the stage of transformation and a relatively fresh scope is established.

The results and conclusions of the study allow formulating recommendations for memory institutions to promote this transformation:

- The essential need of increasing the awareness among MIS about their various roles in research and CS.
- Promotion of collaboration and exchange of experience among MIS on research projects with civic engagement.
- Encouraging the promotion and strengthening of existing professional knowledge and skills of MIS that can be particularly useful in CS projects.
- Creating the knowledge base for MIS and others about CS projects' modeling including the skills of communication and civic engagement.
- Creating the knowledge base for MIS and others about the research process and research data management.
- Participating in CS projects' promotion.
- MIS should invest in their infrastructure and set themselves as the best meeting space for the community's most effective teamwork in CS projects.

The conducted research has given a high impact and allowed to generate the following recommendations targeting researchers and citizen scientists:

 The knowledge expansion on CS projects and similar activities with civic engagement would promote the collaboration in research in general and constitute the interest in giving feedback among researchers and society, and vice versa.



 It is crucial for researchers and citizen scientists to be familiar with the range of services offered by libraries and other MIS, and, as required, to engage those institutions in research CS projects.

The results and conclusions of the study have highlighted the significant potential of collaboration among MIS, researchers, and citizen scientists for Open Science and solving global issues as well as developing a knowledge society.



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Appendix A.

Survey "Collaboration for research: researchers, citizens, memory institutions specialists, and their roles": questionnaire for respondents



University libraries strengthening the academia-society connection through citizen science in the Baltics

Collaboration for research: researchers, citizens, memory institutions specialists, and their roles

Questionnaire

Created by the Library of the University of Latvia with contributions of other LibOCS partners



This project is funded under the Erasmus+ KA2 Strategic

Partnerships program.

Project Number: 2021-1-EE01-KA220-HED-000031125

Project duration: 01.01.2022 - 30.06.2024



Collaboration for research: researchers, citizens, memory institutions specialists, and their roles

Hello! This short survey aims to gather opinions on "Collaboration for research: researchers, citizens, memory institutions specialists, and their roles". It serves to gather academia-society examples of cooperation, also in the form of citizen science. It takes no more than 7 minutes to fill it in. The survey is extended until the July of 8th. Your participation in this study is completely voluntary. However, if you feel uncomfortable answering any questions, you can withdraw from the survey at any point. Your survey responses will be strictly confidential and data from this research will be reported only in the aggregate. Your information will be coded and will remain confidential. If you have questions at any time about the survey or the procedures, you may contact Gita Rozenberga by email: gita rozenhergal@llu.ly. Thank you very much for your time and support

gita.ioz	embergal@fla.iv. Thank you very much for your time and support.
Question	ns marked with * require an answer.
1. 2.	research have an important role in your life?* Yes No Don't know
	se share your understanding and associations of citizen engagement in research activities or Science! (Please specify one or more understandings/associations.)
3. Do yo	ou know any research activities or projects with citizen engagement? *
1.	Yes
2.	No (in this case please proceed with question No. 6)
2	No answer (in this case please proceed with question No. 6)

3. No answer (in this case please proceed with question No. 6)

would help identify this research. You may share more than one project/activity!						



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 In what way do the citizens participate in those activities/projects? (Please tick all that apply)* Generating research ideas or needs Collecting data (observations, measures, etc.) Organizing data Analyzing data Allocating funding for research Other
 6. Do you know any research activities or projects which engage specialists from memory institutions (libraries, museums, archives)?* 1. Yes 2. No (in this case please proceed with question No. 13) 3. No answer (in this case please proceed with question No. 13)
7. Please write the name or website of the project/activity or other related information that would help identify this research where library specialists are involved. You may share more than one project/activity!
 8. In what way are library specialists involved? (Please tick all that apply) 1. They are research or project initiators (generating the research idea, problem definition etc.) 2. They provide a space and a platform for engaged participants and likeminded people (onsite or online; including technical equipment) 3. They provide educational materials about the research process and Citizen Science options 4. They organize educational events about the research process and Citizen Science options 5. They assist with finding relevant information/theoretical materials 6. They perform as specialists on archiving publications, data and other research results 7. They assist with distributing the research results 8. They do research on librarianship and information science topics 9. They do research on history related topics 10. Don't know 11. Other
9. Which of the following partnerships would be most beneficial for science in your opinion? (Please evaluate every option)*

Researchers & Researchers	
Researchers & Library professionals	
Researchers & Museum profesionals	
Researchers & Archive profesionals	
Researchers & Citizens/amateur researchers	
Researchers & Politicians	



10. Are you currently involved in any research projects/activities with citizen participation?*
1. Yes
2. No (in this case please proceed with question No. 13)
3. No answer (in this case please proceed with question No. 13)
11. Please indicate the name, website or other information that would help identify this project/activity!

12. What is your role in those projects?

13. Your age:

- 1. Under 15
- 2. 16 18
- 3. 19 25
- 4. 26 35
- 5. 36 45
- 6. 46 55
- 7. 56 65
- 8. 66 –

14. Please describe your role:*

- 1. Researcher (in this case please proceed with question No. 16)
- 2. Library staff (in this case please proceed with question No. 16)
- 3. Museum staff (in this case please proceed with question No. 16)
- 4. Archive staff (in this case please proceed with question No. 16)
- 5. Other occupation

15. Please specify your occupation				



16. You are based in*
1. Estonia (in this case please proceed with question No. 18)
2. Latvia (in this case please proceed with question No. 18)
3. Lithuania (in this case please proceed with question No. 18)
4. Other
17. Please specify country
18. If you would like to add any further comments to your response, please write them here!
19. Do you consent to be contacted by the LibOCS project team for further information regarding
your responses, if necessary?*
1. Yes
2. No
Name -
Name





Email Address

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Appendix B.

Survey "Collaboration on research between researchers, citizens, memory institution specialists": questionnaire for memory institutions specialists



University libraries strengthening the academia-society connection through citizen science in the Baltics

Collaboration on research between researchers, citizens, memory institution specialists

Questionnaire for memory institutions professionals (Library, Museum, Archive)

Created by the Library of the University of Latvia with contributions of other LibOCS partners



This project is funded under the Erasmus+ KA2 Strategic Partnerships program.

Project Number: 2021-1-EE01-KA220-HED-000031125

Project duration: 01.01.2022 - 30.06.2024



Collaboration on research between researchers, citizens, memory institution specialists

Hello! This survey aims to gather opinions on collaboration between researchers, citizens and libraries and other memory institutions specialists on research activities or projects with citizen engagement. We would like to know more about your experience as a professional from a memory institution working on a research project/activity with citizen engagement. If you participated in citizen science projects, but as a volunteer (not in your professional capacity), please fill in the survey for citizens here. If you did both (worked as a professional in some citizen science projects and contributed as citizen scientists in other citizen science projects), please feel invited to fill in both surveys. Filling out the survey takes up to 15 minutes. Participating in the study is voluntary and you may withdraw from it at any point. Your responses will be strictly confidential and data from this research will be reported only in the aggregate. Your information will be coded and will remain confidential. The survey is extended until Monday the 5th of September. If you have questions at any time about the survey or the procedures, you may contact Gita Rozenberga by email: gita.rozenberga@]lu.lv. Thank you very much for your time and support.

Questions marked with * require an answer.

1. How familiar are you with the concept of Citizen Science?*

- 1. I don't know what it is
- 2. I have little idea about what it
- 3. I have an average understanding of what it is
- 4. I am confident about what Citizen Science means
- 5. I am very familiar with Citizen Science

2. When was the most recent research project/activity with citizen engagement you worked in?*

3. What was your motivation to work or engage in research projects/activities with citizen

- 1. more than 5 years ago
- 2. between 3 and 5 years ago
- 3. between 1 and 3 years ago
- 4. I am currently involved in an ongoing citizen science project

engagement?					



- 4. Please remind yourself the most recent or memorable project/activity with citizen engagement and share your experience in the next questions. Please describe your role in that project!*
 - 1. Researcher (in this case please proceed with question A)

5. What were the main tasks you had to perform in the project/activity?*

- 2. Amateur researcher/citizen (volunteer) (in this case please proceed with question B)
- 3. Research supporter (incl. fundraising, software development, information gathering, research data management, research results archiving, recruiting volunteers etc.)

- 6. Did other professionals from memory institutions (libraries, museums, archives) participate in the project/activity?*
 - 1. Yes
 - 2. No (in this case please proceed with question No. 8)
 - 3. I don't know (in this case please proceed with question No. 8)
- 7. Please evaluate the performance of other professionals from memory institutions (libraries, museums, archives)? (For each statement please indicate the most appropriate one)*

	Valuable performance	Average performance	Weak performance	They were not involved in such a task	I don't know
They initiated the idea of research					
They provided a space for meetings of engaged participants and likeminded people (onsite or online, including technical					
equipment)					
They organized educational events about the research process and Citizen Science options					
They assisted with finding relevant information/theoretical materials/data					
They performed as specialists on archiving publications, data and other research results					
They participated in the creation of the online platform for the Citizen Science project/activity					
They assisted with distributing the research results					
They contributed to recruitment of citizen scientists					
They contributed to raise awareness to the project					

- 8. Did professional researchers participate in the project/activity?*
 - 1. Yes
 - 2. No (in this case please proceed with question No. 11)
 - 3. I don't know (in this case please proceed with question No. 11)



10. Can you name any negative asper project/activity?	cts of working	with profession	onal researche	ers in that	
11. Please evaluate the performance each statement please indicate the n	nost appropria	ite one)*			
	Valuable performance	Average performance	Weak performance	Amateur researchers /citizens were not involved in such a task	I don't know
They initiated the idea of research					
They collected data (observations, measures, etc.)					
They organized data					
They analyzed data					
They transcribed and/or tagged historic materials					
They allocated funding for research					
They raised awareness for the project (e.g., in festivals, science days, schools, produced audio-visual materials for the project, etc)					
They bought or made equipment available for the project					
The helped recruiting other citizen scientists					
They supported the project in our interactions with authorities, funders or other third-party organisations					
12. Can you name any positive aspec	ts of working	with amateur	researchers/c	itizens?	



13. Can you name any negative aspects of working with amateur researchers/c	citizens?
14. In general, how do you evaluate the following aspects in the project/activit	ty community
among participants?*	
Communication between all involved parties	
Opportunity to meet in person	
Opportunity to meet in virtual space	
Clarity about the overall goal of the project/activity	
Clarity about the task to be performed	
Opportunity to use an online platform	
Easy navigation on the online platform	
· · · · · · · · · · · · · · · · · · ·	
3. I don't know (in this case please proceed with question No. 17) 16. What do you expect from the participation of professionals from memory i research project/activity with citizens involved?*	nstitutions in a
17. What is needed to improve collaboration between professional researchers researchers and specialists from memory institutions (libraries, museums, arch	
18. If you have any further comments, please write them here!	
19. What is your occupation?*	
1. Library staff	
2. Museum staff	
3. Archive staff	
4. Other	



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- 1. Estonia
- 2. Latvia
- 3. Lithuania
- 4. Other _____

21. Do you consent to be contacted by the LibOCS project team for further information regarding your responses, if necessary?*

- 1. Yes
- 2. No

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Email Address

- A. Please fill in the questionnaire for professional researchers here.
- B. Please fill in the questionnaire for amateur researchers or citizens (volunteers) here.





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Appendix C.

Survey "Collaboration on research between researchers, citizens, memory institution specialists": questionnaire for professional researchers



University libraries strengthening the academia-society connection through citizen science in the Baltics

Collaboration on research between researchers, citizens, memory institution specialists

Questionnaire for professional researchers

Created by the Library of the University of Latvia with contributions of other LibOCS partners.



This project is funded under the Erasmus+ KA2 Strategic Partnerships program.

Project Number: 2021-1-EE01-KA220-HED-000031125

Project duration: 01.01.2022 - 30.06.2024



Collaboration on research between researchers, citizens, memory institution specialists

Hello! This survey aims to gather opinions on collaboration between researchers, citizens and libraries and other memory institutions specialists on research activities or projects with citizen engagement. We would like to know more about your experience as a researcher working on a research project/activity with citizen engagement. If you participated in citizen science projects, but not in your researcher capacity, please fill in the survey for citizens here. If you did both (worked as a researcher in some citizen science projects and contributed as a citizen scientist in other citizen science projects), please feel invited to fill in both surveys. Filling out the survey takes up to 15 minutes. Participating in the study is voluntary and you may withdraw from it at any point. Your responses will be strictly confidential and data from this research will be reported only in the aggregate. Your information will be coded and will remain confidential. The survey is extended until Monday the 5th of September. If you have questions at any time about the survey or the procedures, you may contact Gita Rozenberga by email: gita.rozenberga[@]lu.lv. Thank you very much for your time and support.

Questions marked with * require an answer.

1. How familiar are you with the concept of Citizen Science?*

- 1. I don't know what it is
- 2. I have little idea about what it is
- 3. I have an average understanding of what it is
- 4. I am confident about what Citizen Science means
- 5. I am very familiar with Citizen Science

2. When was the most recent research project/activity with citizen engagement you worked in?*

3. What was your motivation to work in research projects/activities with citizen engagement?

- 1. more than 5 years ago
- 2. between 3 and 5 years ago
- 3. between 1 and 3 years ago
- 4. I am currently involved in an ongoing citizen science project

•	• • •	



- 4. Please remind yourself the most recent or memorable project/activity with citizen engagement and share your experience in the next questions. Please describe your role in that project!*
 - 1. Researcher
 - 2. Amateur researcher/citizen (volunteer) (in this case please proceed with question A)

5. What were the main tasks you had to perform in the project/activity?*

3. Research supporter (incl. fundraising, software development, information gathering, research data management, research results archiving, recruiting volunteers etc.) (in this case please proceed with question B)

	Valuable performance	Average performance	Weak performance	Amateur researchers /citizens were not involved in such a task	I don't know
They initiated the idea of research					
They collected data (observations, measures, etc.)					
They organized data					
They analyzed data					
They transcribed and/or tagged historic materials					
They allocated funding for research					
They raised awareness for the project (e.g., in estivals, science days, schools, produced audio-visual materials for the project, etc)					
They bought or made equipment available for the project					
The helped recruiting other citizen scientists					
They supported the project in our interactions with authorities, funders or other third-party organisations					
7. Can you name any positive aspects of w	orking with a	mateur resea	archers/citize	ens?	
3. Can you name any negative aspects of w					



9. Did professionals from memory	/ institutions	(libraries,	museums,	archives)	participate i	n the
project/activity?*						

- 1. Yes
- 2. No (in this case please proceed with question No. 13)
- 3. I don't know (in this case please proceed with question No. 13)
- 10. Please evaluate the performance of professionals from memory institutions (libraries, museums, archives)? (For each statement please indicate the most appropriate one)*

erformance	performance	performance	involved in such a task	know
			+	
_				
g with prof	essionals fro	om memory	institutions	

(libraries, museums, archives)?	



13. In general, how do you evaluate the following aspects in the project/activity community among participants?*

Communication between all involved parties	
Opportunity to meet in person	
Opportunity to meet in virtual space	
Clarity about the overall goal of the project/activity	
Clarity about the task to be performed	
Opportunity to use an online platform	
Easy navigation on the online platform	

14. Would you like to collaborate with professionals from memory	institutions	libraries,
museums, archives) in research projects/activities in the future?*		

- 1. Yes
- 2. No (in this case please proceed with question No. 16)
- 3. I don't know (in this case please proceed with question No. 16)

15. What do you expect from the participation of professionals from memory institutions in a research project/activity with citizens involved?*
16. What is needed to improve collaboration between professional researchers, amateur researchers and specialists from memory institutions (libraries, museums, archives)?*
17. If you have any further comments, please write them here!

18. You are based in*

- 1. Estonia
- 2. Latvia
- 3. Lithuania
- 4. Other _____

19. Do you consent to be contacted by the LibOCS project team for further information regarding your responses, if necessary?*

- 1. Yes
- 2. No



Name		
Email Address		

- A. Please fill in the questionnaire for amateur researchers or citizens (volunteers) here.
- B. Please fill in the questionnaire for memory institutions specialists here.





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Appendix D.

Survey "Collaboration on research between researchers, citizens, memory institution specialists": questionnaire for amateur researchers and citizens (volunteers)



University libraries strengthening the academia-society connection through citizen science in the Baltics

Collaboration on research between researchers, citizens, memory institution specialists

Questionnaire for amateur researchers and citizens (volunteers)

Created by the Library of the University of Latvia with contributions of other LibOCS partners.



This project is funded under the Erasmus+ KA2 Strategic Partnerships program.

Project Number: 2021-1-EE01-KA220-HED-000031125

Project duration: 01.01.2022 - 30.06.2024



Collaboration on research between researchers, citizens, memory institution specialists

Hello! This survey aims to gather opinions on collaboration between researchers, citizens and libraries and other memory institutions specialists on research activities or projects with citizen engagement. Filling out the survey takes up to 15 minutes. Participating in the study is voluntary and you may withdraw from it at any point. Your responses will be strictly confidential and data from this research will be reported only in the aggregate. Your information will be coded and will remain confidential. The survey is extended until Monday the 5th of September. If you have questions at any time about the survey or the procedures, you may contact Gita Rozenberga by email: gita.rozenberga[@]lu.lv. Thank you very much for your time and support.

Questions marked with * require an answer.

- 1. How familiar are you with the concept of Citizen Science?*
 - 1. I don't know what it is
 - 2. I have little idea about what it
 - 3. I have an average understanding of what it is
 - 4. I am confident about what Citizen Science means
 - 5. I am very familiar with Citizen Science
- 2. When was the most recent research project/activity with citizen engagement you worked in?*
 - 1. more than 5 years ago
 - 2. between 3 and 5 years ago
 - 3. between 1 and 3 years ago
 - 4. I am currently involved in an ongoing citizen science project
- 3. What was your motivation to participate in research projects/activities with citizen engagement?
- 4. Please remind yourself the most recent or memorable project/activity with citizen engagement and share your experience in the next questions. Please describe your role in that project!*
 - 1. Researcher (in this case please proceed with question A)
 - 2. Amateur researcher/citizen (volunteer)
 - 3. Research supporter (incl. fundraising, software development, information gathering, research data management, research results archiving, recruiting volunteers etc.) (in this case please proceed with question B)



5. What were the main tasks you had to perform in the project/activity?*					
6. Did professional researchers participate in th	e project/ac	tivity?*			
1. Yes					
No (in this case please proceed with quest	-				
3. I don't know (in this case please proceed	with question	on No. 9)			
7. Can you name any positive aspects of working	g with profe	ssional rese	archers?		
O. Con visit manner and mannetive connects of worlding		!!	anahana?		
8. Can you name any negative aspects of working	ng with prot	essionai rese	earcners?		
9. Did professionals from memory institutions (libraries, mu	ıseums, arch	ives) partici	pate in the	
project/activity?*					
1. Yes					
2. No (in this case please proceed with ques	stion No. 13)				
3. I don't know (in this case please proceed	with question	on No. 13)			
10. Please evaluate the performance of professi					
museums, archives)? (For each statement pleas	e indicate th	ie most appi	opriate one)*	
	Valuable	Average	Weak	They were	I don't know
		performance		-	
				in such a	
				task	
They initiated the idea of research					
They provided a space for meetings of engaged					
participants and likeminded people (onsite or online,					

	performance	performance	performance	not involved	
				in such a	
				task	
They initiated the idea of research					
They provided a space for meetings of engaged					
participants and likeminded people (onsite or online,					
including technical equipment)					
They organized educational events about the					
research process and Citizen Science options					
They assisted with finding relevant					
information/theoretical materials/data					
They performed as specialists on archiving					
publications, data, and other research results					
They participated in the creation of the online					
platform for the Citizen Science project/activity					
They assisted with distributing the research results					
They contributed to recruitment of citizen scientists					
They contributed to raise awareness of the project					



11. Can you name any positive aspects of working with the professionals from m (libraries, museums, archives)?	emory institutions
12. Can you name any negative aspects of working with the professionals from minstitutions (libraries, museums, archives)?	nemory
13. In general, how do you evaluate the following aspects in the project/activity among participants?*	community
Communication between all involved parties	
Opportunity to meet in person	
Opportunity to meet in virtual space	
Clarity about the overall goal of the project/activity	
Clarity about the task to be performed	
Opportunity to use an online platform	
Easy navigation on the online platform	
 14. Would you like to collaborate with professionals from memory institutions (limuseums, archives) in research projects/activities in the future?* Yes No (in this case please proceed with question No. 16) I don't know (in this case please proceed with question No. 16) 15. What do you expect from the participation of professionals from memory ins 	
research project/activity with citizens involved?*	
16. What is needed to improve collaboration between professional researchers, a researchers and specialists from memory institutions (libraries, museums, archiv	



17. If you have any further comments, please write them here!
18. You are based in*
1. Estonia
2. Latvia
3. Lithuania
4. Other
 19. Do you consent to be contacted by the LibOCS project team for further information regarding your responses, if necessary?* 1. Yes 2. No
Name
Email Address

- A. Please fill in the questionnaire for professional researchers here.
- B. Please fill in the questionnaire for memory institutions specialists here.





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