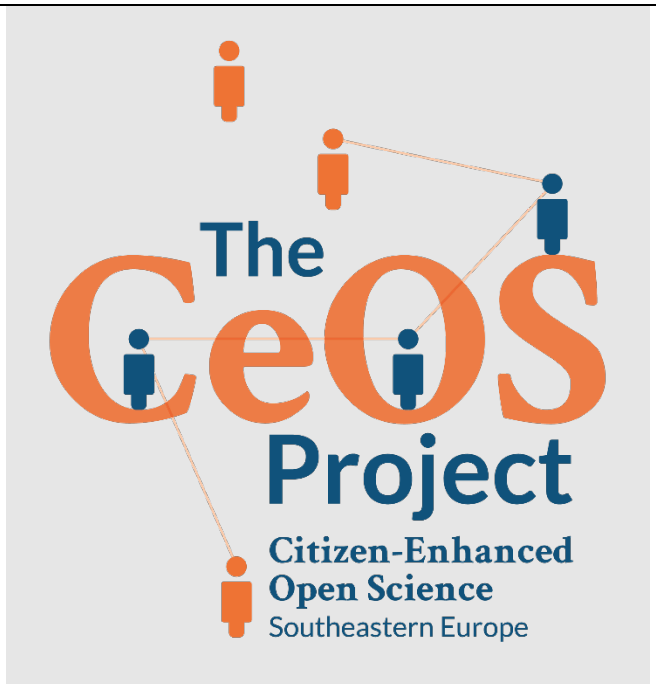


Upscaling collaboration between academic and public libraries for CeOS in SE Europe

Study

AUTHORS:

Dolores Mumelaš

Alisa Martek

Dorja Mučnjak

Citizen-enhanced Open Science

Southeastern Europe

Erasmus+

Overview	
Document title	Upscaling collaboration between academic and public libraries for CeOS in SE Europe : Study
Dissemination Level	Public
Date of completion	30.11.2022.
Type	Study
Version	3
Number of Pages	216

The information in this document reflects only the author's views and the European Community is not liable for any use that may be made of the information contained therein. The information in this document is provided "as is" without guarantee or warranty of any kind, express or implied, including but not limited to the fitness of the information for a particular purpose. The user thereof uses the information at his/ her sole risk and liability. This deliverable is licensed under a Creative Commons Attribution 4.0 International License.

Deliverable Factsheet	
Project number	KA220-HED-15D886A6
Project acronym	CeOS_SE
Project title	Citizen-enhanced Open Science in Southeastern Europe Higher Education knowledge hubs
Document title	Upscaling collaboration between academic and public libraries for CeOS in SE Europe: study
Authors	Dolores Mumelaš, Alisa Martek, Dorja Mučnjak
Output	PR2A3
Due date according to contract:	31/08/2022
Editor(s)	-
Contributor(s)	All project partners
Reviewer(s)	Giannis Tsakonas (UP)
Approved by	All project partners
Abstract	This study looks at methods of upscaling the collaboration between academic and public libraries in coordinating citizen science activities, through case studies from across Europe.
Keyword list	Open science; citizen science; collaboration
Copyright	CC BY 4.0

The information in this document reflects only the author's views and the European Community is not liable for any use that may be made of the information contained therein. The information in this document is provided "as is" without guarantee or warranty of any kind, express or implied, including but not limited to the fitness of the information for a particular purpose. The user thereof uses the information at his/ her sole risk and liability. This deliverable is licensed under a Creative Commons Attribution 4.0 International License.

CONSORTIUM			
Organisation	Short Name	Country	Author
Stichting LIBER	LIBER	The Netherlands	Project Coordinator
Syddansk Universitet	SDU	Denmark	Partner
Università degli Studi di Torino	UT	Italy	Partner
Panepistimio Patron	UP	Greece	Partner
University of Cyprus	UCY	Cyprus	Partner
Univerzitetska biblioteka Svetozar Marković	UNILIB	Serbia	Partner
Nacionalna i sveučilišna knjižnica u Zagrebu	NSK	Croatia	Partner
Universitet po Bibliotekoznanie Informacionni Tehnologii	UniBIT	Bulgaria	Partner

DOCUMENT HISTORY			
Version	Date	Description	Author
0.0	4.11.2022.	Creating the structure and concept of the study, writing methodology, elaboration of sub-chapters, data entry of surveys and questionnaires and analysis of strengths and challenges	Dolores Mumelaš
1.0	5.11.2022.	Analysis of conducted interviews and CSAs	Alisa Martek, Dolores Mumelaš, Dorja Mučnjak
2.0	15.11.2022	Language editing	Alisa Martek through AJE Digital Editing

List Of Tables

Table	Name	Page
Table 1	PR2A1 CSA practices	19
Table 2	PR2A2 CSA practices	20
Table 1.1.	“Wiki Marathons” strengths and challenges analysis	25
Table 1.2.	“Workshop of Democratisation of Digitization in Libraries" strengths and challenges analysis	29
Table 1.3.	“Transcribathon” strengths and challenges analysis	33
Table 1.4.	“Language Laboratory” strengths and challenges analysis	36
Table 1.5.	Project “Abeirar”	41
Table 1.6.	“Find the lake”	44
Table 1.7.	“Narrative medicine”	47
Table 2.1.	About “Plastic Spotting Citizen Science activity”	53
Table 2.2.	About “Citizen Science and Partnerships”	55
Table 2.2.1	“Citizen Science and Partnerships” activity concept	57
Table 2.2.2.	“Citizen Science and Partnerships” activity concept analysis	58
Table 2.2.3.	“Citizen Science and Partnerships” library staff organisational skills	59
Table 2.2.4.	“Citizen Science and Partnerships” library staff organisational skills analysis	60
Table 2.2.5.	“Citizen Science and Partnerships” promotion	61
Table 2.2.6.	“Citizen Science and Partnerships” promotion analysis	61
Table 2.2.7.	“Citizen Science and Partnerships” collaboration	62
Table 2.2.8.	“Citizen Science and Partnerships” collaboration analysis	66
Table 2.2.9.	“Citizen Science and Partnerships” participants evaluation	66
Table 2.2.10.	“Citizen Science and Partnerships” participants evaluation analysis	68
Table 2.3.	About “Citizen Science for a research open to all”	70
Table 2.3.1.	“Citizen Science for a research open to all” activity concept	72
Table 2.3.2.	“Citizen Science for a research open to all” activity concept analysis	73
Table 2.3.3.	“Citizen Science for a research open to all” library staff organisational skills	73
Table 2.3.4.	“Citizen Science for a research open to all” library staff organisational skills analysis	75
Table 2.3.5.	“Citizen Science for a research open to all” promotion	75
Table 2.3.6.	“Citizen Science for a research open to all” promotion analysis	76
Table 2.3.7.	“Citizen Science for a research open to all” collaboration	76
Table 2.3.8.	“Citizen Science for a research open to all” collaboration analysis	80
Table 2.3.9.	“Citizen Science for a research open to all” participants evaluation	80
Table 2.3.10.	“Citizen Science for a research open to all” participants evaluation analysis	83
Table 2.4.	About “Per Scientia, ad Astra: active citizens and dark skies”	85

Table	Name	Page
Table 2.4.1.	"Per Scientia, ad Astra: active citizens and dark skies" activity concept	87
Table 2.4.2.	"Per Scientia, ad Astra: active citizens and dark skies" activity concept analysis	88
Table 2.4.3.	"Per Scientia, ad Astra: active citizens and dark skies" library staff organisational skills	89
Table 2.4.4.	"Per Scientia, ad Astra: active citizens and dark skies" library staff organisational skills analysis	90
Table 2.4.5.	"Per Scientia, ad Astra: active citizens and dark skies" promotion	91
Table 2.4.6.	"Per Scientia, ad Astra: active citizens and dark skies" promotion analysis	92
Table 2.4.7.	"Per Scientia, ad Astra: active citizens and dark skies" collaboration	92
Table 2.4.8.	"Per Scientia, ad Astra: active citizens and dark skies" collaboration analysis	96
Table 2.4.9.	"Per Scientia, ad Astra: active citizens and dark skies" participants evaluation	96
Table 2.4.10.	"Per Scientia, ad Astra: active citizens and dark skies" participants evaluation analysis	99
Table 2.5.	About "Citizen Science: active citizens in conducting, producing and utilising research"	100
Table 2.5.1.	"Citizen Science: active citizens in conducting, producing and utilising research" activity concept	102
Table 2.5.2.	"Citizen Science: active citizens in conducting, producing and utilising research" activity concept analysis	103
Table 2.5.3.	"Citizen Science: active citizens in conducting, producing and utilising research" library staff organisational skills	104
Table 2.5.4.	"Citizen Science: active citizens in conducting, producing and utilising research" library staff organisational skills analysis	105
Table 2.5.5.	"Citizen Science: active citizens in conducting, producing and utilising research" promotion	106
Table 2.5.6.	"Citizen Science: active citizens in conducting, producing and utilising research" promotion analysis	107
Table 2.5.7.	"Citizen Science: active citizens in conducting, producing and utilising research" collaboration	107
Table 2.5.8.	"Citizen Science: active citizens in conducting, producing and utilising research" collaboration analysis	111
Table 2.5.9.	"Citizen Science: active citizens in conducting, producing and utilising research" participants evaluation	112
Table 2.5.10.	"Citizen Science: active citizens in conducting, producing and utilising research" participants evaluation analysis	114
Table 2.6.	About Workshop "Citizen Science"	116
Table 2.6.1.	Workshop "Citizen Science" activity concept	118
Table 2.6.2.	Workshop "Citizen Science" activity concept analysis	119
Table 2.6.3.	Workshop "Citizen Science" library staff organisational skills	119

Table	Name	Page
Table 2.6.4.	Workshop “Citizen Science” library staff organisational skills analysis	121
Table 2.6.5.	Workshop “Citizen Science” promotion	121
Table 2.6.6.	Workshop “Citizen Science” promotion analysis	122
Table 2.6.7.	Workshop “Citizen Science” collaboration	123
Table 2.6.8.	Workshop “Citizen Science” collaboration analysis	127
Table 2.6.9.	Workshop “Citizen Science” participants evaluation	127
Table 2.6.10.	Workshop “Citizen Science” participants evaluation analysis	130
Table 2.7.	About Creating a thematic collection "Bees, life, people”	132
Table 2.7.1.	Creating a thematic collection "Bees, life, people” activity concept	134
Table 2.7.2.	Creating a thematic collection "Bees, life, people” activity concept analysis	135
Table 2.7.3.	Creating a thematic collection "Bees, life, people” library staff organisational skills	136
Table 2.7.4.	Creating a thematic collection "Bees, life, people” library staff organisational skills analysis	138
Table 2.7.5.	Creating a thematic collection "Bees, life, people” promotion	138
Table 2.7.6.	Creating a thematic collection "Bees, life, people” promotion analysis	139
Table 2.7.7.	Creating a thematic collection "Bees, life, people” collaboration	140
Table 2.7.8.	Creating a thematic collection "Bees, life, people” collaboration analysis	143
Table 2.7.9.	Creating a thematic collection "Bees, life, people” participants evaluation	143
Table 2.7.10.	Creating a thematic collection "Bees, life, people” participants evaluation analysis	146
Table 2.8.	About “Citizen Science and Copyright in Libraries”	147
Table 2.8.1.	“Citizen Science and Copyright in Libraries” activity concept	149
Table 2.8.2.	“Citizen Science and Copyright in Libraries” activity concept analysis	150
Table 2.8.3.	“Citizen Science and Copyright in Libraries” library staff organisational skills	151
Table 2.8.4.	“Citizen Science and Copyright in Libraries” library staff organisational skills analysis	152
Table 2.8.5.	“Citizen Science and Copyright in Libraries” promotion	153
Table 2.8.6.	“Citizen Science and Copyright in Libraries” promotion analysis	154
Table 2.8.7.	“Citizen Science and Copyright in Libraries” collaboration	155
Table 2.8.8.	“Citizen Science and Copyright in Libraries” collaboration analysis	158
Table 2.8.9.	“Citizen Science and Copyright in Libraries” participants evaluation	158

Table	Name	Page
Table 2.8.10.	"Citizen Science and Copyright in Libraries" participants evaluation analysis	161
Table 3.1.	The location where the CSA was held	163
Table 3.2.	The field of science covered by CSA	163
Table 3.3.	The target group of the CSA	164
Table 3.4.	The participants' tasks in CS	165
Table 3.5.	Integration of CSA into the existing process or service of the university library	165
Table 3.6.	Number of library staff participated in CSA organisation	166
Table 3.7.	Library staff skills before and after conduction of CSA	167
Table 3.8.	The tools used for CSA promotion	167
Table 3.9.	CSA promotion through local/national media	168
Table 3.10.	CSA promotion influenced public interest in the activity	168
Table 3.11.	CSA collaboration ratings	169
Table 3.12.	The ratings of CSA collaboration barriers	170

List Of Figures

Figure	Name	Page
Figure 1.	"Per Scientia, ad Astra: active citizens and dark skies" promotional visual	91
Figure 2.	"Citizen Science: active citizens in conducting, producing and utilising research" promotional visual	106
Figure 3.	Workshop "Citizen Science" promotional visual	121
Figure 4.	Creating a thematic collection "Bees, life, people" promotional visual	138
Figure 5.	"Citizen Science and Copyright in Libraries" promotional visual	153

Table of Contents

LIST OF TABLES 5
LIST OF FIGURES 8
Executive summary 11
Introduction 12
Scope and audience 13
Methodology and data 13
1. PART 1 – Good CSA practices in European countries 18
1.1. "Wiki-marathons" - UNILIB 19
1.2. "Workshop of Democratisation of Digitization" – UNILIB 21
Introduction 21
1.3. "Transcribiton" - UNILIB 25
Introduction 25
1.4. "Language Laboratory" – UNILIB 27
Introduction 27
1.5. Project "aBEIRAr "– ULBI 32
Introduction 32
1.6. Project Find a lake – SDU 35
1.7. Project Nature up close and personal – SDU 37
1.8. Project Narrative medicine – SDU 39
2. Part 2 – CSAs organised as part of the CeOS_SE project 43
2.1. Plastic Spotting Citizen Science Activity – LIBER 44
2.2. "Citizen Science and Partnerships" – SDU 46
2.3 "Citizen science, for a research open to all" – a dialogue with citizens, libraries and funders" – UT 60
2.4 "Per Scientia, ad Astra: active citizens and dark skies" – UP 73
2.5 "Citizen Science: active citizens in conducting, producing and utilising research" – UCY 87
2.6. Workshop "Citizen Science" – UNILIB 102
2.7. Creating a thematic collection "Bees, life, people" – NSK 117
2.8. "Citizen Science and Copyright in Libraries" – UniBIT 132
Lessons learned from all CS activities conducted by project partners 147
CONCLUSION 156
References 158
Annex A – NSK part of the survey questions (SDU survey) 161
Annex B – Transcription of conducted interviews 165

Annex C – Survey: Citizen Science activity organisation 190
(organisational aspects) 190
Annex D – Questionnaire: Citizen Science activity participants..... 199

List of Abbreviations	
EOSC	European Open Science Cloud
FAIR	Open data principles Findable. Accessible. Interoperable. Reusable.
CS	Citizen Science
CSA	Citizen Science Activity
OS	Open Science
SE	South - Eastern
ULBI	University Library of Beira Interior

The information in this document reflects only the author's views and the European Community is not liable for any use that may be made of the information contained therein. The information in this document is provided "as is" without guarantee or warranty of any kind, express or implied, including but not limited to the fitness of the information for a particular purpose. The user thereof uses the information at his/ her sole risk and liability. This deliverable is licensed under a Creative Commons Attribution 4.0 International License.

Executive summary

In the last few years, there has been a growing interest in the organisation of Citizen Science Activity (CSA) in all library types. Considering their role, libraries have proven to be excellent implementers of this type of activity, considering that they have the possibility of bringing together the local and scientific community. CSA relates to the cooperation of not only scientists and citizens but also internal and external partners of libraries. It is also convenient for various types of libraries to cooperate with each other, but few libraries use that potential. This study will present examples of good practices of cooperation between university libraries and public libraries in the implementation of CSA.

The study is the result of the LIBERs international Erasmus+ project Citizen-enhanced Open Science in Southeastern Europe Higher Education knowledge hubs, and it is part of the PR2 package led by NSK. For the purposes of this study, NSK conducted several surveys, a questionnaire and guided interviews. The study is divided into two parts. The first part refers to the implementation of the PR2A1 package, which investigated examples of good practice in the implementation of CSA in cooperation with university libraries and public libraries, independent of the CeOS_SE project. The second part refers to the presentation of CSA carried out by the project partners with a detailed analysis with an emphasis on advantages and disadvantages in creating CSA with public libraries. The study presents the objectives of the activity, activity context, library staff organisational skills, CSA promotion, collaboration with the public library and participant evaluations.

This study aims to show that there are multiple benefits in the organisation of CSA between university libraries and public libraries, and it can serve as an inspiration to other libraries around the world to organise similar events.

Introduction

Citizen science, CS, is one of the eight pillars of open science, OS, together with open data (FAIR), European Open Science Cloud (EOSC), New Generation Metrics, future of scholarly communication, rewards, research integrity and education and skills (European Commission, 2019). With the CeOS_SE project, the potential of OS and CS in the implementation of library operations is emphasised. The concepts of *cocreation*, *participation* and *collaboration* are often associated with CS, given that it is never the product of an individual person or a single institution but a combination of partnerships. Some of the important factors that should be considered in the creation of CS, while focusing on collaboration, are "codefining and addressing real-world problems, shared language and visual thinking, building the research community, the role of mediation and participatory meetings and participation tools and channels" (Senabre Hidalgo, E. et al., 2021).

Collaboration is the main theme of CeOS_SE PR2, which NSK was in charge of and is called *PR2: Report on implementation of citizen-enhanced open science in various open knowledge hubs in SE Europe*. NSK was chosen to be the leader of this package considering its role in the library system of the Republic of Croatia, where in addition to supervising the work of public libraries, it often jointly organised various activities. PR2 is divided into three units:

- PR2A1. *Collection of practices of university and public libraries' collaboration in SE Europe to mainstream CeOS*
- PR2A2. *A report on CS cocreated activities by university and public libraries and application to SE Europe*
- PR2A3. *Study: Upscaling collaboration between academic and public libraries for CeOS in SE Europe*

The result of PR2A1 is the collection of examples of good practice of cooperation between university libraries and public libraries in the joint creation of CSA. The examples were discovered on the basis of a survey carried out together with the SDU under PR1, and the university libraries that met the criteria were contacted and guided interviews were conducted to describe the examples of good practice in more detail. These examples are presented in the first part of the study. One of the tasks of PR2A2 was that each project partner organises and implements CSA in cooperation with public libraries. The project partners were required to keep documentation about the CSA, give CSA participants a questionnaire to fill out, and had to fill out the online survey. In this way, the organisational aspect and the aspect of the participants of each CSA were investigated. As part of PR2A3, NSK was tasked with creating this study to present and analyse the results of PR2A1 and PR2A2 in one place.

Scope and audience

This study shows 8 examples of good practice of cooperation between university libraries and public libraries in the organisation of CSA identified in a survey conducted within PR2A1. Additionally, 8 examples of CSA organised by project partners in the period between April and October 2022 within the framework of PR2A2 were presented and analysed in detail.

Although the primary audience of this study is the project partners, it is also intended for experts from all types of libraries with an emphasis on university libraries and public libraries, as well as the interested public.

Methodology and data

This study is based on several data collection methods that included two online surveys, one post evaluation questionnaire and guided interviews.

The part of the study that refers to the presentation of examples of practice in the collaboration of university libraries and public libraries in the CSA organisation (which were not related to the CeOS_SE project) is based on data collected through an online survey and conducted interviews. NSK teamed up with SDU to create an online survey aimed at university libraries across Europe. SDU was in charge of most of the survey questions, considering that this was their task in PR1A2 (*Skills and practises audit in UL in SE Europe*). NSK was in charge of the cooperation between university libraries and public libraries in the creation of CSA. The online survey was created by the SurveyXact tool and was pretested by all project partners. It was launched on 15 March 2022 and closed on 15 May 2022. It is difficult to estimate the exact number of dispatched surveys, given that each project partner was in charge of their own and even a wider geographical area. A total of 82 European university libraries participated in the survey.

For the purposes of this study, answers about the cooperation between university libraries and public libraries were analysed. Only 5 out of 82 university libraries declared that they had cooperation with the public library in the matter of organising a joint CSA, which is 6% of the examined libraries. Furthermore, only 4 out of 5 marked libraries decided to reveal their identity, namely, SDU, Oulu University Library (Finland), ULBI (Portugal) and UNILIB. An e-mail was sent to the mentioned libraries to ask for their approval to arrange a guided interview. The guided interview method was chosen considering the small sample, as well as for a more personal and intimate approach to the topic. Three libraries agreed to perform the guided interview: SDU, ULBI, and UNILIB. The interviews were held at the beginning of June in three languages: English (SDU), Spanish (ULBI) and Croatian (UNILIB). In detail, there are 4 examples of a good practice explained from UNILIB, one from ULBI and 3 from SDU. The interviews were transcribed and translated into English (page 181).

The major part of the study refers to the detailed presentation of the CSA carried out by the project partners. The methodology included an online survey and printed questionnaire. Both the survey and the questionnaire were pretested by all project partners.

According to the project rules, questionnaires were distributed to the participants of each CSA on the spot immediately after the end of the CSA. The reason for this was to investigate the general satisfaction of CSA participants on the spot with the fresh impressions. It took approximately 5 minutes for completion. Each project partner translated the questionnaire into their national language to make it easier for the participants to fill them out and to express themselves better in their native language in the open-ended questions. The questionnaire consisted of seven questions, five of which were mandatory and closed-ended, and two questions were optional and open-ended. The project condition was that 55% of the questionnaires were completed, and the default number of CSA participants was a minimum of 20 people. Questionnaires represent feedback from the participants, which is very important because with them libraries can get information about whether they have organised a good CSA, as well as suggestions for improving such activities in the future.

The organisational aspect of the CSA was also investigated, considering that for most of the project partners, it was the first time a CSA was carried out in cooperation with the public library (with the exception of SDU and UNILIB, which had previous experience). The survey was completed by the partners after the CSA. It was available on a Google form, and the link was distributed to all project partners. It consisted of 28 questions, and it took approximately 15 minutes to complete. Eight of those questions were open-ended, ten were closed-ended, five were multiple choice questions, and five were Likert-type questions. The survey was divided into several parts, and it investigated CSA basic data, CSA concept, library staff organisational skills, CSA promotion and CSA collaboration with public libraries (and other potential collaborators). All project partners responded to the survey, which means that the response rate was 100%. The value of those results is not only that they offer a detailed overview of the organisational aspect of CSA but also the opportunity for each library to reflect on the work it has carried out and see its strengths and weaknesses to improve them in the creation of the future CSA.

Considering the diverse methodology, two types of data were collected: quantitative and qualitative. Quantitative data refer to data collected through questionnaires and online surveys, which can be expressed in numbers and are targeted. Qualitative data are represented in open-ended questions and guided interviews. Conducted interviews are based on descriptions and recollections, and because they were not conducted immediately after the activities, they do not have much quantitative data. To present the CSA mentioned in the examples, available online sources that describe the activity in more detail were also used.

Structure

The study is conceptually divided into two parts. The first part refers to the presentation of European CSA (examples of good practice) in collaboration between university libraries and public libraries, which were held before the CeOS_SE project and independently of it (part of PR2A1). The second part refers to the detailed analysis

of CSA carried out by the project partners in cooperation with public libraries for the needs of the CeOS_SE project under the leadership of NSK (part of PR2A2).

Each CSA good practice example (part of PR2A1) is structured as follows:

- CSA introduction, which includes basic data on the name of the activity, year of implementation, participants and main goal
- organisational experiences that are based more on qualitative data from guided interviews in which librarians recount personal experiences and impressions
- collaboration in which the role of the public library in the implementation of CSA is revealed
- Strengths and challenges in implementing CSA
- conclusion and opinion of university libraries about CS and CSA

Data will include quotes from conducted interviews, as well as CSA-related data found online. The following table presents CSA.

Table 1 PR2A1 CSA practices

University library	Number of CSA	CSA name	Public library involvement	Interview date
UNILIB	4	1. Wiki marathon 2. Workshop of democratisation of digitization 3. Transcribiton 4. Language laboratory	YES	8 June 2022
ULBI	1	1. Project Abeirar	YES	8 June 2022
SDU	3	1. Find the lake 2. Nature up close and personal 3. Narrative medicine	YES	9 June 2022

The part of the study related to the CSA examples implemented by the project partners within the CeOS_SE project (part of PR2A2) is structured as follows:

- introduction to CSA; view of the summary of the activity, collaborative tasks and data analysed
- activity description, CSA details and CSA results
- CSA organisational aspects with units: CSA concept, library staff organisational skills, CSA promotion and CSA collaboration with public library
- CSA participants aspect
- conclusion

Data obtained through an online survey, a questionnaire for participants, accompanying documentation provided by partners, and information and news found online were analysed. The following table provides an overview of all CSA within the CeOS_SE project.

Table 2 PR2A2 CSA practices

University library	Public library	CSA name	CSA date
LIBER	Leiden University **according to project rules, LIBER selected university library to implement CSA*	"Plastic Spotting Citizen Science Activity"	3 July 2022
SDU	Odense Centralbibliotek, Kolding Bibliotek, Aalborg Bibliotekerne, Silkeborg Bibliotek, Glostrup Bibliotek	"Citizen Science and Partnerships"	28 September 2022
UT	Turin public libraries	"Citizen science, for a research open to all" – a dialogue with citizens, libraries and funders	7 and 8 June 2022
UP	Papacharalambeios Public Central Library	"Per Scientia, ad Astra: active citizens and dark skies"	13 May 2022
UCY	Strovolos Municipality Library	"Citizen Science: Active citizens in conducting, producing and utilising research"	24 June 2022

UNILIB	Public Library “Milutin Bojić”	Workshop “Citizen Science“	24 May 2022
NSK	Public library Ivanić-Grad	Creating a thematic collection: “Bees, Life, People”	2 to 8 May 2022
UniBIT	National Library "Ivan Vazov" - Plovdiv	“Citizen Science and Copyright in Libraries“	19 April 2022

1. PART 1 – Good CSA practices in European countries

As part of PR2A1, NSK collected a collection of successful CSA practices of university and public libraries' collaboration. These examples are collected not only to highlight good practice but also to make CeOS_SE partners aware of some CSAs that they may not even know exist. According to the project rules, it was necessary to find 10 cases of good practice, but 9 cases were found with the help of the joint survey. Given that one library did not respond to the request to participate in a conducted interview in order to present its CSA in more detail, 8 detected CSAs are described in this study. The project partners decided that the detected 8 cases show diverse world examples, and that their smaller number only proves the lack of cooperation between university libraries and public libraries in organizing joint activities. As noted in the methodology and structure part of this study, 3 university libraries that have implemented CSA in cooperation with public libraries. These 8 examples will be presented in detail in this unit to draw attention to the following:

1. University libraries CAN organise CSA in cooperation with public libraries, regardless of whether they are located in stronger or less developed countries in Europe.
2. Public libraries can help organisationally in several ways: by offering their own space, attracting users, promoting the CSA to the local community in which they operate, offering collections, offering staff...
3. In addition to being able to collaborate with public libraries, university libraries can include other external partners in the implementation of CSA.
4. The CSA must be designed in such a way that it is comprehensible to citizens and that they can easily participate in it.
5. It is important to transfer knowledge about the importance of CS not only to citizens but also to professionals, with an emphasis on librarians.
6. Enthusiasm is more necessary than finances to conduct a CSA.
7. The key to a successful CSA is collegiality.

The seven factors mentioned above run through all the examples of CSA mentioned in this part of the study and indicate how much CSA characterises library operations, enriches knowledge and contributes to the scientific and local community and creates strong business ties.

1.1. "Wiki-marathons" - UNILIB

Introduction

The wiki-marathon is a CSA that has been carried out within the *Wiki-Librarian* project continuously since 2016. The main organisers of the project are UNILIB and Wikimedia Serbia. Wikimedia Serbia is a non-profit civic association founded in 2005 with the intent of strengthening the free transfer and sharing of knowledge (Blagojević, M., Milošević, D., 2014). Project Wiki-Librarian started in 2015, and its main aim was to enrich Wikipedia with the professionally selected library fund and to promote open access to knowledge. The librarians working within the aforementioned project are not only librarians from UNILIB but also librarians of all types of libraries, and in the period from 2015 to 2021, a total of 34 public libraries participated in the project (Stakić, Đ., Popović, A., 2021). With *Wiki-Marathon,* participants produce articles using the library's collection and upload them to Wikimedia Commons so that they are available to everyone. Marathons are conducted under the supervision of librarians, often in the space of university libraries and public libraries. In this way, more than 400 articles were produced in cooperation between citizens and librarians. Articles can be found on the Wikimedia Commons pages, as well as lists of conducted *Wiki-marathons*, of which the following can be highlighted: *Open access scientific journals*, *My Street*, *Agricultural Sciences in Serbia*, *Jovan Cvijić* and *Serbian humorous magazines* (Wikimedia Commons, 2022).

Although librarians initially participated in *Wiki-Marathons*, over time, all other interested citizens joined, primarily students. UNILIB librarians in a guided interview mentioned the following:

> Wiki-marathons *refer to article writing and supplementing the articles with bibliographic references. Activities are carried out with public libraries and citizens. Additional training for the preparation of articles is also available within the Centre for Continuous Professional Development of Librarians Serbia, and both university librarians and public librarians participate in it. Citizens participate in* Wiki-Marathons *and work for a period of three days. Most successful participants receive a prize.*

Some of the institutions whose participants (citizens) took part in *Wiki-Marathons* are the University of Belgrade Faculty of Mathematics, Faculty of Economics and Business and Faculty of Geography, Institute of Technical Sciences of SASA (The Librarians' Section of the Serbian Association of Institutes, 2016), Vinča Institute of Nuclear Sciences, The Museum of Applied Art Serbia, Serbian Institute of History, Military Medical Academy (Serbia), University of Niš Faculty of Philosophy (Wikipedia, 2019) and many others.

Organisational experiences

UNILIB staff confirmed that the organisation of this CSA was not complex. The reason for this is the previous co-operational experience with Wikimedia Serbia, and the

central topic is related to information and communication sciences, so it was well known to them. The importance and role of Wikimedia Serbia was emphasised:

> *Wikimedia Serbia is one of the most active Wikimedia in the world. They have a lot of experience, and they saw us as good partners. We previously promoted OS together, and this was a continuation of the collaboration.*

In the interview, cooperation with librarianship students at the Faculty of Philology was also mentioned:

> *Additionally, writing Wiki articles is an integral part of practice for librarianship and informatics students, and they need to write a certain number of articles. First, they are trained, and then they independently write articles that are reviewed by the librarians of UNILIB. We have a very good cooperation with that department, and it entered into the faculty curriculum.*

Wiki-marathons are often accompanied by surveys, so they are evaluated, and participants express their satisfaction with the activity:

> *Our accredited seminar includes a part with a survey where they leave their opinions about the seminar, evaluate the acquired knowledge, how many new things they learned, how satisfied they are with the presentation, whether they will apply the acquired knowledge, etc. That seminar is recognised as very good and is reaccredited every year (accredited by the Commission for National Libraries of Serbia).*

As a general impression of the overall CSA, the UNILIB librarian stated the following:

> *I think CSA was extremely useful because Wikipedia went from being a tool that was considered not even verified information to the point where it has reached the proportions of a real encyclopaedia, precisely because now it also has bibliographic references that must be reliable, and we also use them more when we do normative records for authors. We believe that the development of Wikipedia will go in a direction where it will become a truly serious and not a superficial bibliographic source. Of course, in our* Wiki-Marathons *are texts (articles) that are not interesting to us at all, but that is simply a civic decision – what will be written. We also have verification, that is, a check to see if that person (historical figure) deserves to have a Wiki article; you can't write about everyone, you can't write about people who don't have any references.*

Collaboration with public libraries

Public libraries participate in *Wiki-marathons* in several ways. Public librarians participate in the Centre for Continuous Professional Development of Serbian librarian training and become experts in creating Wiki articles. That's why they can conduct Wiki-marathons on their own, help citizens and monitor their work. In addition, public libraries offer places to work (rooms with computers), attract the local community to participate, and offer platforms (websites and social networks) to promote activities. This was also confirmed in the interview:

> *The librarians of the public library participate in the training and then they further train the citizens. Public librarians also invite citizens (their users) through their channels to participate in writing articles for the* Wiki-Marathon. *We (UBSM) do not have such a direct connection with citizens as public libraries have. Citizens do this from home.*

According to available sources (Wikimedia Commons, 2022), these are some of the public libraries that participated in CSA public library Belgrade, Lajkova, Vladislav Petković, Dis, Pančevo, Bor, Njegoš, Smederevo Milutin Srećković, Antonije Popović, Bora Stanović, Branko Ćopić, Ljig, Užica, Osečina, Arilje, Novi Sad, Slobodan Ž, Marković... The number of institutions that participated in *Wiki-marathons*, as well as the fact that they cover different fields of science, indicate the importance and magnitude of this activity and that it aroused great public interest.

Table 1.1. "Wiki Marathons" strengths and challenges analysis

Strengths	Challenges
Strong cooperation and distribution in various institutions throughout Serbia. The creation of Wiki-articles (product of Wiki marathons) entered the curriculum of the faculty. Articles created by *Wiki-marathons* are still available online and are in open access. It is possible to use various topics from all fields of science.	Lack of computers to carry out activities (not enough number of computers compared to the number of interested parties). Lack of time that had to be invested in checking the text of the articles and all accompanying references.

1.2. "Workshop of Democratisation of Digitization" – UNILIB

Introduction

"Democratisation of digitalization: new digital technologies for users of cultural institutions" is one of the projects supported through the public competition of the Foundation "Audience in Focus" with funds allocated from the AP Vojvodina budget for 2017. The project is jointly implemented by the City Library in Novi Sad and the UNILIB, with the support of project partners Matica Srpska Library and the Historical Archive of the City of Novi Sad, and its ultimate goal is to involve as many users as possible in the process of digitising library and archival materials. To make it more accessible (Novi Sad – Europska prijestolnica kulture, 2022). Within the project, the CSA Workshop of Democratisation of Digitization is developed.

The UNILIB partner explained that the workshop is also part of the second project:

> *We were part of the European project READ – a large European project that dealt with the reading of manuscript material. We were associated partners in that project, and a special tool was developed within the framework of the Transcribus platform; a special software solution was developed within the platform for the tool to read someone's handwriting. As part of the project, we cleared manuscripts written in Serbian Cyrillic; colleagues worked on clarifying texts in German, English and Dutch, and later, the initiative was extended to a large number of European languages. We based ourselves on the Serbian Cyrillic script, considering that it was originally the least represented of the scripts from which the translation was made. The byproduct of that large READ project is the creation of new technologies that would enable fast, simple and efficient scanning for very little money invested. For this purpose, an application was developed on a mobile phone that, with the help of a small device called a tent, places publications that need to be scanned, and on top of that tent (Scan Tent), there is an opening where a mobile phone camera can be placed; the application is DocScan. This whole application and scanning present the democratisation of digitization for scanning without practically investing money and enabling the broad masses, i.e., users of the service, especially users of public libraries, to come and scan without some powerful complicated scanners.*

UNILIB library staff stated that in this process, they not only use traditional approaches but also apply the ideology of democratisation of digitization, which involves users in work processes and brings completely new organisational approaches and elements. (Trtovac, Andonovski, Dakić, 2021)

Organisational experiences

In their interview, UNILIB staff clarified how the CS about democratisation of digitation looked like:

> *Therefore, a Scan Tent was placed in the UNILIB library to help users quickly, easily and simply scan the material on their own. Then, we, as a library, held workshops in which we promoted this service and the opportunities it provides, in cooperation with public libraries. There were several workshops; we worked with the City Library in Novi Sad, and we held at least 10 workshops for their branches. We accredited these workshops as seminars for the professional training of librarians. We also present this to a large number of public libraries. Then, through them, we reached a large number of volunteers (that is, their users) who helped us clear the material. In addition, we were helped by students of history, students of the Faculty of Philology.*

These CSA workshops were held in 2017, 2018 and 2019 (UNILIB, 2022), when UNILIB had to stop them because of COVID-19. They stated the following:

> *We tried to hold online workshops as well, but for this kind of workshop, it is simply impossible. We have to approach everyone and individually explain how to use the Scan Tent and how to set everything on the phone.*

The workshops lasted two days, and 12-15 participants could attend them. On the first day, participants learned about digitization of cultural heritage with emphasis on the importance of digitization for the preservation and presentation of manuscript materials in libraries. Digital Tool for processing manuscript archival materials in the world and in Serbia were presented as well as the new free technologies for scanning and transcription of manuscript material such as DocScan mobile application, ScanTent portable device and Transcribus platform. The second day of the workshop was reserved for practical work with new technologies so that participants could train using the ScanTent portable device and Transcribus platform (UNILIB, 2019). It was expected that the use of the Scan Tent would increase due to the workshops, but this did not happen:

> *We have not noticed any significant increase in usage. We expected that after such a campaign and attendance at the workshop, they would truly be used more.*

Perhaps it would be good if the importance of the workshops were emphasised and if they were promoted to an even greater number of potential users. In 2022, workshops continued as well as UNILIBs cooperation with the public libraries.

Collaboration with public libraries

For holding workshops but also for spreading knowledge. UNILIB has partnered with several public libraries, but they pointed out the with the Public Library of Novi Sad:

> *This first part is more related to the workshops with the Public Library of Novi Sad and the involvement of their users; they also had their own project related to the European Capital of Culture, so they had the opportunity to improve something like a library, and since the overall process is a kind of democratisation of society, digitization also fits here, workshops are not only organised in public libraries but also in the smallest places in the Republic of Serbia.*

The Public Library of Novi Sad continued with digitization practices, and the city of Novi Sad was recognised as the new European capital of culture. The implementation of the project "Democratisation of digitization: new digital technologies for users of cultural institutions", which is taking place under the auspices of the "Novi Sad 2021 - European Capital of Culture" Foundation, will last until the end of 2019 and is expected to bring a number of interesting and useful innovations in library business, strengthen cooperation between librarians and end users and make Novi Sad libraries important and indispensable actors in projects to preserve the national cultural heritage. (Novi Sad – Europska prijestolnica kulture, 2022). As for UNILIB's benefit from the collaboration with the aforementioned public library, the staff pointed out that the public library provided space for some of the workshops and attracted participants.

Table 1.2. "Workshop of Democratisation of Digitization" strengths and challenges analysis

Strengths	Challenges
CSAs are incorporated into the existing project, as well as into the professional development program for librarians. Workshops are intended for all interested citizens, most often users of public libraries. Volunteers were also involved in the CSA, and cooperation with the faculty was achieved.	UNILIB has one Scan Tent, so a smaller number of people (12-15) can attend the workshops. No increased use of Scan Tent has been observed, which means that a target audience who would actually use it should be found.

1.3. "Transcribiton" - UNILIB

Introduction

As mentioned in the previous chapter, CSA *Transcribion* is connected with the CSA *Workshop of Democratisation of Digitization.* During the workshop, participants gain knowledge about the tool Transcribus and practice operating it. Participants are usually librarians, but they transfer knowledge to their library users and encourage them to use the tool.

Both CSA are part of the READ project, whose main aim was to build a virtual research environment that can bring together archivists, librarians, information scientists, researchers in the field of humanities and volunteers who, through mutual cooperation, aim to develop cutting-edge technologies for automatic recognition, transcription, indexing and enrichment of handwritten archival documents. In this way, a chance was reated to use specific knowledge and expertise not only for informational professionals but also for volunteers and users who can get a chance to contribute to the community in a transparent and democratic way. One of the tools used in the project is Transcirbus. Transcribus is a platform for automatic recognition, transcription and searching historical documents programmed using JAVA and SWT8 applications, and it consists of the expert tool Transcribus, a web interface and several cloud services (cloud technology). Its main goal is to create a virtual research environment and provide support to users engaged in the transcription of printed or handwritten documents. (Andonovski, Dakić, Trtocvac, 2020).

With the help of the Transcribus tool and in cooperation with the public library, a CSA *Transcribiton* was held in which citizens entered handwritten material to create a single umbrella model reading the Serbian Cyrillic alphabet.

Organisational experiences

The READ project coordinator is the Group for Digitization and Digital Protection at the University in Innsbruck, which also hosts Transcribus. As the Group advocates the principles of OS, most of the software is in open access, and additional information can be found on the Internet. In this way, Transcribus users (either institutional or individual) are enabled to further use the platform unhindered, and the possibility to clear data from handwritten and printed texts through HTR technology, at the same time contributes to it, improvement thanks to the principles of machine learning.

Automatic recognition of a wide spectrum of historical texts, on the other hand, has significant implications for the availability of written records of world cultural heritage.

When asked about the difficulty of organising this activity, UNILIB staff confirmed that the organisation was challenging:

> *Yes, there were a lot of activities, a lot of seminars, a lot of personal contacts, a lot of consultations, everything is a lot, and in order to get to something that is still not perfect - we took one swing and we work on that swing. We are currently focused on some other concepts, and we have new colleagues who are getting involved, so it is interesting for them too.*

Trained participants can also participate from home in Transcribitons, given that the tool is available online and is free for use.

> *The tool is freely available. Every citizen can freely access it and download the software to their computer. It can also be used as a web variant so it can be used directly on the Internet and you do not need to download it to your computer. Every citizen can be trained, there are tutorials on the Internet - how things work; to train and work and produce a model for his needs. We have a model for the Serbian Cyrillic alphabet, and we are trying to make it as good and high quality as possible. That is why we try to incorporate every individual manuscript that exists and create a single umbrella model reading the Serbian Cyrillic alphabet. We are the administrators for that umbrella model and for every model created as a result of our institution's project from our collections.*

Participants are mainly satisfied with the activity and often report to the library staff:

> *Yes, they said it was an extremely positive experience for them. Very often we also receive some mail where they ask us something, say that it was nice for them, or remind me how something is introduced somewhere. (example of Isidore Sekulić's handwriting). Manuscripts are very important for further research and what's interesting is that you can directly make a critical edition, export directly a cleared manuscript in the format you need; no more trouble, for example, when preparing new editions for further procedures and formatting; it is interesting for reuse.*

The positive reaction of the participants, as well as the realisation that one can participate in the activity both physically and online, indicate a quality organisation of this type of CSA.

Collaboration with public libraries

UNILIB emphasised that for the purposes of CSA *Transribtion,* it did not collaborate only with public libraries but also with museums and archives. Considering the valuable material that is part of the fund of these institutions, it is commendable that they were also recognised and included, and thus, the activity resonated more strongly with the public.

This activity is interesting from the aspect of collaboration with public libraries because unlike other CSAs, here, the role of the public library was not only in training public library staff or providing the users, but they also participated by providing the public with insight into their collection and by using the collections;

> *Additionally, as far as cooperation with the public library is concerned - sometimes it happens that the library has part of one person's fund, and we have another part, and with Transcribus we combine that person's funds in one place. We can say that recently, there has been very good cooperation with public libraries.*

Table 1.3. "Transcribiton" strengths and challenges analysis

Strengths	Challenges
CSA is incorporated into the existing project. In addition to public libraries, museums and archives are also included in the CSA. The activity can also be carried out online so the number of participants is unlimited. This activity increases the visibility of materials in cultural institutions	It is difficult to control whether participants enter the correct text in the Transcribus tool.

1.4. "Language Laboratory" – UNILIB

Introduction

Language Laboratory is a CSA connected to the platform of the same name developed by UNILIB and Wikimedia Serbia. It is an ongoing CSA with the goal of "creating and improving a grammatical dictionary of the Serbian language in electronic form and publishing it under a free licence" (Jezička laboratorija, 2022).

UNILIB staff explained how they developed the language laboratory platform followed by CSA:

> *It was initiated by a colleague who came from Wikimedia Serbia; he got a job in UNILIB, he is a programmer and he had this awareness of something socially broader, that is, of socially open knowledge. At that moment, we were also establishing a searchable digital library. The Group for Language Technology at the University of Belgrade has all the dictionaries of the Serbian language, all the morphological forms, everything as it should be, however, in formats that are not very suitable for a digital library, nor were they, as a group from the Faculty of Mathematics, in the mood to just leave it to their decades-old Work. We thought that we needed the digital library to be searchable, and then our colleague Nikola said that we could do something like this, and that is how we started the Language Laboratory.*

The main objective of the Language Laboratory is the creation and development of a free electronic Serbian language dictionary. Their aim is also to publish software code under a free licence. In that CSA, participants work on the enlargement of Wiktionary, in which certain content in the Serbian language (e.g., change of nouns through cases, change of verbs through personal and impersonal, and simple and complex verb forms, etc.) could be generated instead of the previous manual input and correction. Through CSA designed in this way, UNILIB and Wikimedia promote free knowledge and contribute to the creation of free quality content based on volunteer work with the

principle of CS, which implies the volunteer work of participants (Wikimedia Serbia, 2016). Language Laboratory is therefore an excellent example of implementing CSA in an existing library process, or, in this case platform.

Organisational experiences

All interested citizens can contribute to the creation of the Language Laboratory in open access and use the results of its creation. By simply registering on the platform, volunteers gain the right to enter material at their own linguistic discretion. The control of the entered materials is primarily based on the principles of statistical rules and assessments made in the test phase of the platform development but also on the control performed by librarians - experts. In this way, in addition to the important language infrastructure, a valuable source for studying the living Serbian language is obtained, which puts hundreds of thousands of entered language forms at the disposal of linguists, which represents a kind of cross-section of the state of the Serbian language in the segment to which the dictionary is being created (RTS, 2018).

UNILIB gave the details about the organisational concept of CSA Language Laboratory:

> *Participants get a random noun and the/she voluntarily enter its forms by case, meaning declension, and that is what you did for the CSA Language Laboratory. Then, it is incorporated into a digital library and it is searchable by any case, any term you put in. You can change one or a hundred words, so as many as you want. In addition, when we popularised this campaign, we said "it can take you 5 minutes, or 50 minutes, depending on how much time you have."*
>
> *We always have on the page who are the most active users, who entered how many word forms. Retired people actually work the most, they lead. The project was also carried out with some high schools because the professors of the Serbian language and literature heard that it was a good thing and then motivated their students to participate in it. You always rely on people who want to listen to you and who are open-minded enough to understand that this is a socially useful thing.*
>
> *The Language Laboratory is growing, and we connected it with the terms from the Wiki articles. The program offers words from Wiki articles and to begin with that they are only nouns. We are still only on nouns. Each user needs to change that noun according to the cases. If the word library or library is entered, the user obtains everything related to the library, regardless of the case in which it is in the text.*
>
> *We have the idea to extend it to other morphological forms, verb forms, but there are so many nouns that we can work on them for several years. If you come across a noun that you are not sure how to decline correctly, you can skip it, so that is also a possibility and it is a convenience for the user.*

With this type of CSA, it is truly possible to involve a large number of citizens, and the nouns include a wide range of search words. However, there is a question of the correct entry of the noun in the platform:

There is no control. Somewhere in the header it says "People's dictionary", which means it is not "Professionals dictionary", that is why we fenced ourselves off because there is no rector's team that could monitor and control all of this. Even if the shapes are not regular, someone will look for them (search) even under that irregular shape. It is important that it is searchable.

Collaboration with public libraries

As with other activities, Serbian public libraries also participate here by activating their own users and promoting them. Public libraries become involved after UNILIB staff promotes activities in the media at professional conferences, webinars, training and similar events:

We promoted the Language Laboratory everywhere. The growing number of users, that is, the number of citizens who respond, shows how successful the promotion was. Whatever and wherever we hold any lecture related to our library, we always mention those additional services and projects as well as activities in order to inform as many colleagues and users as possible.

Table 1.4. "Language laboratory" strengths and challenges analysis

Strengths	Challenges
CSA is incorporated into the existing library process. CSA is located online so a great number of participants can collaborate whenever they want. This CSA is connected with the CSA Wiki-marathon because the source of the nouns are Wiki-articles.	There is no control of the nouns which are entered into the platform and the grammar can be incorrect.

Lessons learned

UNILIB organised and implemented 4 CSAs before and independently of the CeOS_SE project. Each of those 4 activities was organised several times and in cooperation with several public libraries, and most of them were organised with other external partners, such as Wikimedia Serbia, museums, archives, etc. Considering the number of organised activities, it is interesting to know that UNILIB accidentally stumbled upon to the concept of CS, as mentioned in the conducted interview:

Our university implements the concepts of OS, which is determined by law. However, the concept of CS is something new in our environment, and as a library, we came upon this concept more intuitively than we had it theoretically.

> *It was more like "we heard that something is being done somewhere" - can we try it too? As a university library, we cooperated with researchers, scientists and students, and through some projects, we started to cooperate with the public, including public libraries. It turned out that these project activities fit into the concept of CS, so we can say that we intuitively stumbled on the path of CS. We must add that we also wanted to include volunteers, and the best way to reach volunteers was to include public libraries. Along the way, we showed them what we were doing and included them (public libraries), and they were indispensable to us because we could not even overcome the amount of work we had. In addition to public libraries, a network of higher education libraries, museum libraries, archives, i.e., special libraries, participated in our CS activities.*

UNILIB staff also said that they upgraded their knowledge about CS while searching the articles on the internet and studying the other CSA projects. They also like to exchange experiences and share articles with each other continuously working on knowledge transformation and self-education. The presence of teamwork is visible, which UNILIB confirms:

> *The people who work in our CSA get along well. Collegiality is crucial. Those of us who work in the university library function strangely as one family, we love our institution very much, and these things happen on the basis of enthusiasm, much more than on the basis of some material support, for someone it may have been important in order to advance to a professional position, so that means there can be some side interests.*

It is important to note that UNILIB manages to organise and implement CSA without major financial expenditures. They said they do not work for the CSA to get some profit and the only expenses they have are for travel. The organisation of CSA is mostly based on personal acquaintances.

Regarding collaboration with public libraries, UNILIB staff stated that public libraries help them in receiving participants. Their (UNILIB) library does not have much contact with citizens, but through public libraries, they can connect with the local community. The public library knows its users well, they have a different type of audience than university libraries, and they know how to communicate with their users and how to attract them. In the conducted interview, UNILIB staff said:

> *Perhaps we were lucky that the libraries we chose were open to cooperation. I cannot say with certainty that every library we could contact would be so eager to cooperate. We cooperated more with those libraries that contacted the US because they heard that we were doing something and were interested in cooperation. That is why the cooperation was easy because the feedback from the other side (public libraries) was also good. Another thing, we have a lot of conferences, meetings, where we meet fellow librarians of public libraries, so there are also personal acquaintances and their interest in hearing something from us, and we also hear something from them, and then we connect.*

The CSAs organised by UNILIB are linked to digital technology. UNILIB aimed to use digital tools to attract more participants because "everyone is on some devices". Digital technology is familiar and easily accessible to people, so they are more interested in

participating in activities. UNILIB believes that in the first place is not scientific research but the fact that their activity is interesting from the technological aspect.

These four successfully organised CSAs, implemented in cooperation with public libraries, prove that such activities can be implemented without much funding in small environments, and the most necessary factors are the creativity and enthusiasm of the staff. In this case, the university library is most often the main creator of CSA, implementer and educator, while public libraries are used here to connect the local community with the university library and to acquire new skills and knowledge. Public libraries often give space and part of their library fond. It is highly commendable that UNILIB managed to connect and even upgrade the combined CSAs. The constant promotions they carry out are also very important because in this way, even more libraries and other cultural institutions obtain information about CS and want to become involved in the implementation of activities. UNILIB has created an excellent basis for the development of further CSAs; it has acquired strong business ties with public libraries throughout Serbia and beyond, so it is to be expected that it will continue with this good practice of CSA production in the future.

1.5. Project "aBEIRAr "– ULBI

Introduction

The CSA is called aBEIRARr, which is a word play – because the region in Portugal is called Beira Interior and *aBEIRAr* in Portuguese means 'to bring closer'. aBEIRAr is a CS partnership for the enhancement of the territory whose mission is to enhance civic involvement and participation with science, promote dialogue between scientists and citizens and arouse community interest in building knowledge and valuing the territory. aBEIRAr was born from the crossing of common objectives between the Intermunicipal Network of Libraries of Beiras and Serra da Estrela of CIMBSE, the Open Science Platform – Municipality of Figueira de Castelo Rodrigo, the UNESCO World Star Geopark and the University of Beira Interior. The first aBEIRAr initiative covered the 15 municipalities of CIMBSE in a sequence of three cycles, each dedicated to a central theme for the territory – Water, Sky, Rock – which will take place in spring, summer and autumn, respectively (CIMBSE, 2022). The project was divided into steps for all participants: the first step – water, the second step – sky – night sky, and the third step – rock, stone.

The participants were all interested in the project; there were people from the library, from the city, from the university – six hundred people participated, dozens of people from the library organisation and the authors of literature and science combined.

This year (2022), in 2022, the objective was to reinforce the networking of the various institutions linked to science, culture and civil society of the region and train local agents. As such, through collaborative work and co-creation among the CIMBSE municipalities, aBERIAR is developing in a synergy between citizens, scientists, cultural professionals and topics relevant to the territory (SciCom Pt, 2022).

Organisational experiences

The colleague from ULBI confirmed initial difficulties regarding the global pandemic because there couldn't be a lot of people in one place. The greatest organisational difficulty presented the safety of the participants because the activity was organised in mountains and the organisers could not guarantee the safety of all gathered participants. Nevertheless, many people came at their own risk, and the activity was a great success:

> *The difficulties of the project: Yes, there were difficulties, mostly because of the financing. Beira is a large region, and we who were involved in this project, we had to use our own vehicles to travel around the region. It has always been the weekend, Saturday or Sunday, or the night and we weren't paid and this is a problem. Then, we have another difficulty, it has been COVID, because we combined a researcher and when the date approached the scientist fell ill and we had to combine the other and many times it was difficult. Another difficulty has been to secure people because we did not dislocate the natural areas, and if someone falls, we have no security. We told ourselves that he was not sure, but people came despite everything. Security has been complicated.*

The organisers met in their free time, as their region is large, they used their own vehicles. The biggest problems were with the financial support of the activities.

The CSA initially received support from the University of Beira Interior, but there were problems in agreeing on the dates of the activities. Activities were organised during the weekend and in the evening. Despite everything, the results of the activity were great, and the activity was well covered by the media; all local and national media reported on the activity. It was featured on national television in the program for culture.

The organisation of the second *aBEIRAr* activity is planned[1], and it received funding due to the good media coverage of the first CSA and excellent results. The ULBI staff is very satisfied with the CSA:

> *Now we are planning the second Abeirar that we had the meeting last week to implement in September. It will be something within the same parameters, but more linked to orality and ancestry – the league of legends, and we are going to do a part of the science and the local, and we are going to do something that goes to call coffee the Cha. Because we are going to ask some old ladies who hide the medicinal plants to make the cha, then the chemical scientists are going to analyse the cha, and then the population is going to be surrounded in all the cafes because it will be winter and they took the tea in all the coffees. In addition, with the technical viability of that special tea.*

The aBEIRAr project was identified as a very successful one that successfully overcame economic and logistic barriers at the High-Level Policy Event *Citizen Science for Policy across Europe*. (Radicchi et al. 2021).

Collaboration with public libraries

There were no problems with the cooperation of libraries in the organisation CSA because there is a network of libraries, CIMBSE and libraries have learned to cooperate with each other:

> *We, at the universities, are promoting the science part, and the public libraries will add the literature part. (...) Each public library proposed a local author from the city in the municipality, and the university library was a connection between the researchers and the authors. All the municipalities proposed someone from the literature who wrote about water, who knew something about water. Then, there was a connoisseur of oral heritage about the sky, and authors who wrote about the sky and about stone were invited. A philosopher interpreted heaven from the point of view of philosophy, and the participants loved it because it was not a formal form, and they could freely talk, participate in the activity and it was spectacular. Similar to topic water, researchers were invited to specialise in groundwater, thermal water, mountain water, and glaciers. Then, an author wrote about the water, and the participants actively participated.*

[1] Op. aut. The second aBEIRAr was organised in September 2022. As the interview was conducted on 8 June 2022. that is why the colleague was still promoting it.

Considering that they are more involved in the community, public libraries recommended authors dealing with CSA topics and at the same time attracted the audience or their users.

CSA strengths and challenges

Table 1.5. Project "Abeirar"

Strengths	Challenges
Strong cooperation between university and public libraries in the library network Great media coverage secured more financing for the second aBEIRAr. Great attendance and public response. CSA is recognised both nationally and globally.	Excessive number of participants compared to the number of security people; participants participated at their own risk. Problems with public gatherings because they were held during the COVID pandemic. Lack of financing for the CSA organisation.

Lessons learned

The greatest asset in organising CSA *aBEIRAr* is CIMBSE, the library network of the Beiras and Serra da Estrela regions where public and university libraries learned to cooperate in all kinds of activities; thus, cooperation on the CSA was not a problem. On the other hand, there were all kinds of organisational problems, mostly financial, because the only support was given by the University of Beira Interior, so the organisers met in their free time and used their own vehicles because the region is large. Global pandemics also presented difficulty because there could not be many people in one place at once. That is why they organised the activity outside, but then the safety of the people could not be guaranteed. Nevertheless, fewer participants came (six hundred), and the CSA was a great success.

> *Yes, because we have done it happily, informally and all of us, the libraries and ourselves. Nothing very formal because we have formalism every day. This served to participate, for people to learn and smoke. In addition, we have all done this with a good voice. We are the whole team, that is, the hard core is seven people, the representatives of the network (of the libraries), Geo Park, the citizen science of the other city and us.*

There was good media coverage.

> *We have been very surprised because from the television, from all the regional ones, they have reported the news, the television, cultural programs, and the national television has broadcasted about the project.*

The second aBEIRAr activity was conducted in September 2022, and it received funding due to the good media coverage of the first CSA and excellent results.

1.6. Project Find a lake – SDU

Introduction

In Denmark, there are numerous lakes and ponds – approximately 200,000 in total. Large and small, clean and dirty, natural and human-made. Due to nutrients, etc., from their surroundings, many of the lakes have poor water quality, which causes problems such as algae growth and poor living conditions for animals and plants. Climate changes also affect the lakes, but only a minor part of the lakes is regularly inspected; therefore, we know very little about many Danish lakes. The project Find a lake seeks to gain more knowledge on the water quality in different types of lakes and how climate changes affect these. (https://www.sdu.dk/en/findalake, 2022). The project included pupils from primary school, high schools and citizens and ran from August 17th - October 18th 2020.

The CSA was organised in a way that people could borrow to *do it themselves science kits* in their local library. These kits are basically suitable for testing the quality of water. After a person reports the results to an interface, an app and a website, they turn the kits back to the library. The results are visible on the websites several seconds after reporting them via the app.

Public libraries lent the kits and took care of the water samples. Additionally, they promoted the project and helped people to be a part of the project. Before this project, there were 50 samples of water, and after it, there were more than 500 samples.

The target group was mainly elementary school students. The scientists of the Department of Biology of SDU used those results to better understand how climate changes affected the water quality of lakes.

The biggest outcome of the project is its spin-off project “Lakes in spare time” (https://www.sdu.dk/en/forskning/forskningsformidling/citizenscience/soer-i-fritiden/om-projektet, 2022).

Organisational experiences

The colleagues from SDU claimed that there were some initial concerns about the project, but since this was not their first CS project, they had previous experience. The most difficult thing was to assemble the water samples because they had to be stored in certain climate conditions (temperature…).

The second concern was how to promote the project because the CSA was somewhat demanding towards the participants (borrow the kit, go to nature, take the water sample, test the quality of water, report the results).

> *We need them to find a water bottle. We need them to make sure it is clean. We need them to go out to a lake and spend time doing that. In addition, then we need to get them to hand it back.*

Collaboration with public libraries

The collaboration with public libraries was excellent. Every single project partner knew what their responsibilities were, and they delivered them perfectly. Public libraries had some unique skills (reaching out to the public, promoting the project, communication with the public, etc.).

> *Yes, I would say when we do it, it is excellent. I would like to do it a lot more. I would wish that we had public libraries as partners in every single project that we had. Right now, it is more on when there is a truly good fit.*

CSA strengths and challenges

Table 1.6. "Find the lake"

Strengths	Challenges
Strong cooperation between project partners. Clear understanding of needed skills and responsibilities among project partners. Great response from the public. Spin-off project *Lakes in spare time* for pupils and students.	The collecting of water samples, storing them at certain climate conditions. The great demands are towards the public (come to library, borrow kit, go to the lake, take samples, repost results via app, return kit, take the clean bottle...).

1.7. Project Nature up close and personal – SDU

Introduction

In Denmark, nature organisations and state- and municipality-oriented initiatives therefore increasingly call for insect-friendly garden design and maintenance, both privately and in public, green areas. However, after centuries of a historically grounded norm of 'proper' gardening, individual citizens have a long way to go to incorporate these sustainable gardening trends.

It takes knowledge to create ideal conditions for insects in the garden, whether you want insect-friendly perennials, shrubs and trees or wild host and nectar plants. The biodiverse garden breaks with the classic, aesthetic garden with exotic flower beds and no weeds as well as with the modern, maintenance-free garden with a clean lawn, tiles, granite chippings and a few fruit trees. Consequently, citizens' views on biodiverse gardens need to be changed to ensure comprehensive acceptance and support for greater biodiversity in public and private areas.

This project is based on the *Who Owns Nature*? research project, which in 2021 looked into garden trends, the growing interest in biodiversity among garden owners and how Danes relate to nature and culture within their gardens. We discovered that the shift to a more insect-friendly garden required citizens to acquire new knowledge about plants and that interest in supporting biodiversity was present regardless of age, nature views and the type of garden.

The *Nature – up close and personal* project investigates how local biodiversity initiatives are experienced by the citizens of the Municipality of Nyborg and to what extent these initiatives affect their individual garden consumption practices and thereby their focus on biodiversity.

It is done through two subprojects:

1. *Play for Learning* – learning about insect-friendly plants in schools (acquisition of knowledge)
2. *From the Castle Ramparts to the Private Garden* – meeting wild flowers in the public space (exposure).

The project relied on the participation of the Nyborg public library in three ways. First, during 'Kulturnatten' (Culture Night), pupils exhibited drawings regarding their learning experience while their parents voiced their opinion on participating. Second, outreach and communication to the public while recruiting participants for events. Third, hosting a town hall meeting in a partnership with the local newspaper (Café Stiften) and a host of other stakeholders, the results and possible path for the future were discussed. All three components provided data and the citizens interpretation for the SDU-researchers.

The project was held during 2022. The target group is everyone from 7 to 100 years of age.

Organisational experiences

The organisation of this project was marked by the collaboration of multiple partners. They all had very distinct roles in the project according to the skills they had. SDU has remarkable experience as a project manager, but CSAs need various partners with different skills to be organised as well as possible.

Collaboration with public libraries

The project relied on the participation of the Nyborg Public Library in three ways. First, during "Kulturnatten" (Culture Night), pupils exhibited drawings regarding their learning experience while their parents voiced their opinion on participating. Second, outreach and communication to the public while recruiting participants for events. Third, hosting a town hall meeting in a partnership with the local newspaper (Café Stiften) and a host of other stakeholders, the results and possible path for the future were discussed. All three components provided data and the citizens interpretation for the SDU-researchers.

> *We are the project managers of this project. We are collaborating with the Public Library to reach the citizens of this municipality because again, they know their citizens. They know their users. They have a big network, and they do events all the time. However, we are collaborating with them and a local school on doing walks, doing a, having SDU researchers out to organise the talks and walkabouts, where are the problems? What should we discuss? The local school did a project and a display of what the pupils were doing that was an exhibition at the local library, and they promoted the project in order for researchers to get data the other way. So they're a partner in this. Just like the community is, just like the local newspaper, just like the Local Nature Association. In addition, they are an equal partner. Just like anybody else.*

1.8. Project Narrative medicine – SDU

Introduction

The purpose of the project was to have citizens read and interpret the literature, ultimately making them reflect on the literature. The experiment was conducted as a reading and writing workshop. For the experiment, several texts were chosen, read and discussed with one or more of the groups. The group(s) contributed to the literature suggestions and texts in the workshop. The citizens were encouraged to suggest literature that made sense for them in regard to health/disease. Parallel to this, a couple of literary bloggers provided a platform at TV2/Fyn, where the participants could discuss the literature in a blog.

In medical education at SDU, students are instructed in narrative medicine, which enhances their awareness of language and increases their empathy and reflection.

Narrative medicine is used as a supplement to the traditional treatment of various diseases. This is conducted through creative writing, where the participants use the process of creative writing to develop a different understanding of their situation. These workshops are part of a research project that seeks to examine where and how narrative medicine can contribute to the treatment of different patient groups.

In the same way, literary workshops for regular citizens are important contributions to the research within narrative medicine. A citizen science project like that supports the research that is conducted among the different groups of patients.

> *Therefore, at SDU Medicine School that doctoral students have a 5 or 10 ETS course where they read, uh, literary articles done by authors, poets in order to discuss their view on illness and treatment and cures and not their own, so it is a reflective tool for doctors to become more aware of patients point of views.*

In October 2018, SDU and TV2/Fyn launched a new Citizen Science project translated "Literature on the Go" where citizens were invited to take part in a literary workshop. Here, they could meet scientists, authors and other citizens interested in literature and share their experiences with the literature. 'Literature on the Go' was composed of several literary workshops where citizens, as well as healthcare professionals, shared their experiences and thoughts about literature. These literary workshops were created to bring about a dialogue among the participants on themes such as "the Hospital World", "Life's beginning and end" and the literature's importance and possibility in relation to health and disease.

(https://www.sdu.dk/en/forskning/forskningsformidling/citizenscience/afviklede-cs-projekter/litteraert-vaerksted, 2022)

> *About our activity was that we did a project in the whole island where we lived with a media partner where we wanted to have doctors to discuss their view on a certain set of literary texts, and we wanted the public through the media and the libraries to discuss the same set of texts. Then, we put them together for a discussion group that was facilitated by the Public Library, and we did a public*

hearing on television that the Public Library organised for us and the media partner.

Organisational experiences

The organisation of this project was marked by the collaboration of multiple partners. They all had very distinct roles in the project according to the skills they had.

> *They were for the literary school at ASU. However, besides, I mean what I'm trying to say, it is not only a Public Library research library partnership, there were researchers., there were literary authors. There was a media partner. There was an NGO, so we were six partners in this project.*

SDU has great experience in running CS projects so they are aware of downsides and they can prevent them.

Collaboration with public libraries

The collaboration with public libraries was excellent. Every single project partner knew what their responsibilities were, and they delivered them perfectly. Public libraries had some unique skills (reaching out to the public, promoting the project, communication with the public, running the book clubs, etc.). Every project partner had their unique skills, so they matched perfectly.

> *And the Public Library, they have many followers and people who are coming to the library. So they promoted the project and recruited the citizens that we needed, and they had a literate, they had a literature club going and reading groups already. So we tapped into their infrastructure and their knowledge in facilitating this because we, as a research library who were in charge of the project, did not have that knowledge, that skill, that infrastructure.*
>
> *Their experience and their network were larger than ours.*

CSA strengths and challenges

Table 1.7. "Narrative medicine"

Strengths	Challenges
Strong cooperation between project partners. Clear understanding of needed skills and responsibilities among project partners. Great response from the public.	Finding the way to gather all partners and use their skills as necessary. Internal communication and the division of leadership. Research and public libraries need to make a clear division of responsibility?

Lessons learned

The three aforementioned CSAs conducted by SDU are not the only CSAs in SDU. SDU has great experience in running CS projects. Overall, from the perspective of a project partner with a lot of experience in running citizen science projects, the following conclusions can be drawn:

1. For the successful implementation of citizen science projects, the cooperation of a large number of partners is essential because each partner possesses certain knowledge and skills important for the project.

2. Public libraries are a very important partner in the implementation of citizen science activities precisely because of their set of skills: communication with different publics, organisation of events, and contacts with the media.

   And the Public Library, they have many followers and people who are coming to the library. So they promoted the project and recruited the citizens that we needed, and they had a literate, they had a literature club going and reading groups already. Therefore, we tapped into their infrastructure and their knowledge in facilitating this because we, as a research library who were in charge of the project, did not have that knowledge, that skill, that infrastructure.

3. A successful project requires a different set of skills, and to bring together project partners who will cover all the necessary skills, it is important to map the skills of all project partners so that it is immediately clear what can be expected from whom and who will do what work.

   I think that in all citizen science projects, it is a new negotiation. It is a new partnership every single time. Because you cannot just repeat and plug and play a citizen science project. There are transferable skills, but if staff are not trained or seasoned in doing it, you are starting from scratch each time. Therefore, when I say these things now, it is not a critique of public libraries. It could be said in every new citizen science project we try to begin. So of course, there was a discussion of what is the goal? What is the common goal that took some time? There was some discussion. OK, which staff would be suited to do this?

   I think primarily skills from my own stuff at the research library, they have been fairly trained, they have been on a number of projects. I think their skills will, we always learn something to pick something new up, hmm but we lack the competences that we have at our library for every single employee and make sure that they can live up to that so we do not put people in the wrong position at the wrong product. However, I think something that could easily be worked on is a more systematic skill set for public libraries. Because they do not have it as a service that is available all the time like we do. I mean, it is a core thing for my library to run a citizen science service for researchers and the public. However, that is not the way it is at public libraries, so they check into projects from time to time. There is no continuation of skills and development.

4. Cooperation is crucial.

Which events and which things do we take ownership of? So of course, there was a division of labour and a prioritisation of resources which is in every single citizen science project. However, because we knew these people in advance and worked with them also on other things, there were almost no conflicts, there was almost no friction and there were no very few misunderstandings, it was pretty much plug and play.

5. The goal of citizen science is similar to the roles and functions of public libraries, and citizen science activities should be included in the regular activities of public libraries; for this purpose, advocacy with the administration is extremely important.

   However, I think the whole problem, issue is that libraries in Denmark can very much see, or at least some library management can see that what public libraries are put in the world to do in Denmark it is very transferable to citizen science. It has some of the same goals.

   It is strategy and advocacy. It is mapping and locking of skills and translating of. That is why I call it transferable skills. Umm? And then there is a truly interesting component. That is leadership and prioritisation. Because you cannot go out to an employee at a Public Library and say we think you should work on this citizen science project. If it is not a part of their strategy, if they are not trained for it, and if they are not told that they should do it, it is not a voluntary exercise. In addition, you need to be very on point. We are prioritising this just as we do as loaning books out, for example.

   However, I think what what what, as a personal note? I think there is an enormous potential not only in research libraries but also in public libraries. In addition, when I discuss with library management and the head of the Danish Public Library Association, why, why, why are there public libraries? Well, it is to enhance knowledge society, it is for democratic conversation to happen. It is that we have free and clear knowledge for everybody. It is available for everybody. It is to mitigate fake news. I mean, those are some of the wise for citizen science. It is exactly the same for public libraries.

   And to be honest, I think that could be a barrier in research libraries as well, because I can see from my own library that a lot of the skills our staff have are transferable skills that we use in citizen science projects, and I will bet that at many Danish public libraries the same skills are there. They are good at doing events. They're good at communicating. They are good at doing evaluation, they are too good at doing reading groups. They are good at all kinds of things. However, they are not aware that it fits into citizen science.

There are potential barriers to the implementation of citizen science projects in public libraries:

1. the reduction of library budgets and the reluctance to do more for less money,
2. the knowledge of what citizen science is.

The answer to those barriers is advocacy, cooperation and mapping the skills.

2. Part 2 – CSAs organised as part of the CeOS_SE project

For the purposes of PR2A2, each project partner had a task to hold a CSA in cooperation with the public library. This means that CSAs will enable partners in sustained exchange and collaboration with the public libraries (associated partners in the project) and other potential external partners. The main aim is to maximise citizen involvement in OS in SE_Europe. The project emphasised that at least 7 partners must participate in the implementation of the CSA, which was achieved. LIBER also organised the CSA, which, according to the project proposal, had to choose the university library that would participate in the CSA. Given that LIBER is an association of research libraries and has (together with the chosen university library) joined an already existing activity, surveys for the organisers and questionnaires for the participants are not applicable; therefore, LIBER's CSA will not be presented in detail.

On the other hand, the activities of other partners are presented in detail, and their strengths and challenges are analysed. It could be said that the project partners approached the CSA organisation in two ways:

1. by organising lectures on CSA and providing examples of good practice and sharing experience
2. by involving citizens in research with scientific contribution

In the first method, participants were passive, and in the second, they were active. That does not diminish the value of organising lectures, workshops and discussions but emphasises the strong need for libraries to transfer knowledge about CS to the local community and other librarians. This part of the study will be devoted to organisational aspects and participants aspects of CSA and their analysis. It will show how less experienced project partners coped with CSA organisation compared to more experienced ones, whether they used external partners other than public libraries, in which locations CSAs were held and what type they were, what were the library staff organisational skills before and after CSA, methods of CSA promotion and so on. Special emphasis will be placed on the perspective of the participants and on their opinion about the activities held.

2.1. Plastic Spotting Citizen Science Activity – LIBER

Table 2.1. About "Plastic Spotting Citizen Science activity"

Summary of the activity			
Date: 12 July 2022	**Duration:** 3 hours	**Participants:** All interested citizens	**Number of participants:** 5
Library (partner): Leiden University Library *according to project rules, LIBER selected university library to implement CSA		**Field of science**: natural sciences and agricultural sciences	
Other external partners: Plastic Spotters		**Location**: outdoors	**Activity type:** Measurement, specimen/sample collection
Collaborational tasks			
LIBER - connection with Plastic Spotters (Leiden)		**Leiden University Library** - providing the participants	
Data analysed			
CS report		Completed	
Survey for the organisers		Completed (N/A)	
Questionnaire for the participants		Completed (N/A)	
Other data and resources		internal documentation, articles	

Activity description

Context and programme

Main theme: environment of the Leiden city centre canals

Framework: part of the CeOS_SE project

Organisers: LIBER, Leiden University Library, Plastic Spotters

Mode of engagement of the participants: measurement, specimen/sample collection

Aim: The goal was to watch, learn, participate, and gather data for future CeOS_SE and to clean Leiden canals from plastic and other rubbish

CSA details and results

LIBER joined the Leiden University Library and Plastic Spotters on a CSA named "Plastic Spotting Citizen Science Activity" on 12 July 2022. Every Sunday, plastic spotters are a team of citizen scientists who pick waste from the Leiden canals. LIBER took the opportunity to join that valuable event. Plastic spotters are well known in Leiden; their main aim is to "monitor and reduce plastic pollution in the urban water system" (Tasseron et al. 2020).

Before they started cleaning the canals, LIBER presented to the participants the CeOS_SE project and its role in popularising CS and OS. On the three-hour trip around the inner-city canals, the participants found bottles, cans, cups, a football, a signpost, two chairs, and a bicycle.

After cleaning, participants counted the waste they found, and the count data were taken for further scientific uses. Recyclable material was separated and recycled in appropriate places. The activity was a great example of successful and engaged citizen science.

This activity showed that libraries can become involved in already existing activities that are carried out in the same city by encouraging their users to participate.

2.2. "Citizen Science and Partnerships" – SDU

Table 2.2. About "Citizen Science and Partnerships"

Summary of the activity			
Date: 29 September 2022	**Duration:** 5 hours	**Participants:** Teaching staff, library staff, managers	**Number of participants:** 23
Public library (partner): Odense Centralbibliotek, Kolding Bibliotek, Aalborg Bibliotekerne, Silkeborg Bibliotek, Glostrup Bibliotek, The Royal Library		**Speakers/lecturers** Pia Friis Kent Skov Anja Pedersen Berit Elisabeth Alving Lotte Thing Rasmussen Mette Fentz Haastrup Thomas Kaarsted Charlotte Dale	**Number of speakers/lecturers:** 8
Other external partners: None		**Location:** library	**Language:** Danish
Collaborational tasks			
SDU - main organiser - providing experts and designing the workshop concept		**Public libraries** - providing the participants	
Data analysed			
CS report		Completed	
Survey for the organisers		Completed	
Questionnaire for the participants		Completed	
Other data and resources		Internal documentation	

Activity description

Context and programme

Main theme: libraries and their contribution and collaboration on CS

Framework: part of the CeOS_SE project

Organisers: SDU, Odense Centralbibliotek, Kolding Bibliotek, Aalborg Bibliotekerne, Silkeborg Bibliotek, Glostrup Bibliotek, and the Royal Library.

Mode of engagement of the participants: classification or tagging, data entry, finding entities

Aim: develop a dialogue with public libraries regarding the collaborative organisation and implementation of CS and strengthen the communication between university and public libraries

CSA details

SDU partnered with several public libraries and created a workshop "Citizen Science and partnerships" on 29 September 2022. It was a creative workshop lasting several hours in which the attendees discussed the possibilities of CSA and joint implementation of such activities through teamwork, dialogue and discussion.

The program was opened by Pia Friis and Kent Skov, who greeted the participants, and then Kristian H. Nielsen and Thomas Kaarsted gave a lecture "What is Citizen Science?". Lectures were discussed, and participants gave their reflections that arose. After that, employees from SDU, Anja Pedersen, Berit Elisabeth Alving, Lotte Thing Rasmussen, and Mette Fentz Haastrup talked about their experiences with CS projects. This was followed by a presentation "The big question 'why libraries'?" by Thomas Kaarsted, who presented international and SDU CS cases and projects. The participants were asked "Why should public libraries participate in collaboration on Citizen Science?" They discussed it.

The second part of the program included a workshop "Dialogue carousel" led by Charlotte Dale. Participants were divided into 4 groups and had to write key words about how libraries can contribute and collaborate in CS at 4 stations. The first station was about the employee perspectives in the work with CS, the second was about dissemination and communication between the libraries in CS projects, the third tried to determine how libraries involve citizens in CSA, and the fourth referred to potential partnerships in the organisation of CSA. Participants had 5 minutes to observe each station.

CSA results

Participants concluded that when creating collaborative CSA, libraries must think about the local context. It was stated that if libraries can create something in the methodological set that lasts, then it can easily reach the smaller municipalities despite the distance to the SDU. It has been established that the CSA context has to be spoken OUT (not down) to the public libraries. Participants agreed that CS is socially beneficial, useful and important there and that it is necessary to focus more attention on the 'contract' between partnerships.

CSA organisational aspect

Table 2.2.1. "Citizen Science and Partnerships" activity concept

Activity concept (source post activity survey for CSA organisers)			
Name of the activity	"Citizen Science and Partnerships"		
Activity location	Kolding libraries		
Activity duration	5 hours		
Participants expected Participants achieved	20 23	Participations rate: (difference between the participants expected and achieved)	100%
Field of science covered by CSA	Natural Sciences, Engineering and Technology, Medical and Health Sciences, Agricultural Sciences, Social Sciences, Humanities		
Targeted participants	Teaching staff, library staff and managers		
Participants tasks in CeOS activity	Classification or tagging, dana entry, finding entities		

Analysis

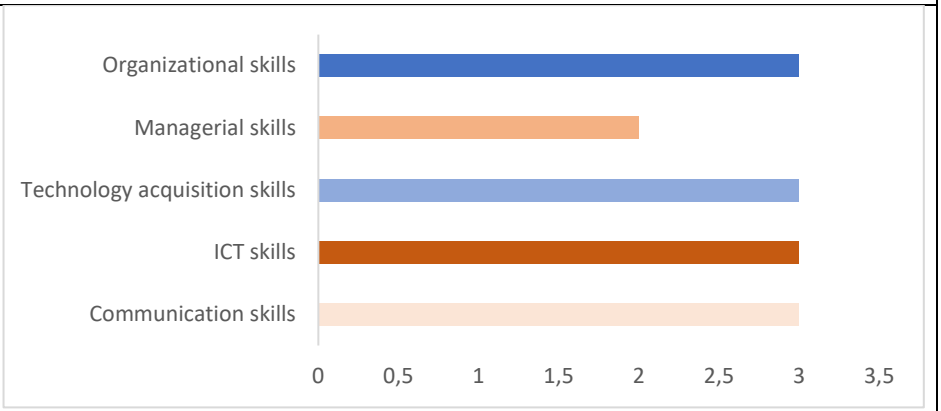
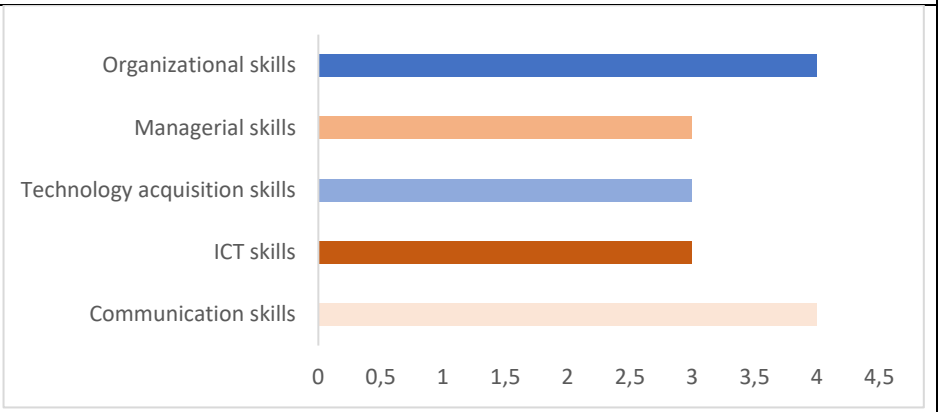
Table 2.2.2. "Citizen Science and Partnerships" activity concept analysis

Strengths	Challenges
SDU cooperated with several libraries in order to strengthen teaching staff, libraries and managers in terms of CSA, with an emphasis on partnership. The activity was carefully worked out for five hours, starting with education and ending with an interactive workshop. Given the well-developed concept of activities, SDU managed to touch all fields of science	The colleagues didn't report any challenges they were facing

CSA organisational aspect

Table 2.2.3. "Citizen Science and Partnerships" library staff organisational skills

Library staff organisational skills	
Previous experience in conducting CSA	Yes
CSA integration in the existing process or service of the university library	Yes
Number of the university library staff participated in	6-10

organisation of CSA	
Rating of library staff skills **before** CSA	
Rating of library staff skills **after** CSA	
New knowledge aobut CS that university library gained through CSA	*A clear dialogue with public libraries and stronger focus on communication*
Experience of conducting CSA will expand university library user service in the future	Yes
University library plans to conduct CSA in the future	Yes

Analysis

Table 2.2.4. "Citizen Science and Partnerships" library staff organisational skills analysis

Strengths	Challenges
SDU has extensive experience in conducting CSA in history, which certainly helped in designing and implementing CSA for the needs of the CeOS project and for the possible future activities. CSA was integrated in the existing process of the SDU. A large number of library staff (6-10) were involved in CSA, so tasks could be properly distributed. After the implementation of the CSA, an improvement was observed in library staff skills, i.e., organisational, managerial and communication skills.	Even though they had previous experience in CSA organisation, SDU library staff claim that they lacked managerial skills. However, after CSA "Citizen Science and Partnerships" they noticed progress.

Table 2.2.5. "Citizen Science and Partnerships" promotion

CSA promotion	
Tools used in CSA promotion	university library official website, production of visual, leaflets and/or posters
Local and national media coverage?	No
Promotion of the CSA influenced on the public interest of the activity	Yes
CSA visuals	N/A

Analysis

Table 2.2.6. "Citizen Science and Partnerships" promotion analysis

Strengths	Challenges
Considering previous experiences and cooperation with public libraries, it was relatively easy for SDU to find the required participants.	SDU used a small number of communication channels to promote CSA. The reason for this is probably the target participants, but by spreading news about CS on social networks, the wider audience can also get information that could arouse their interest and awareness that there is a CS topic.

Table 2.2.7. "Citizen Science and Partnerships" collaboration

<table>
<tr><th colspan="2">CSA collaboration</th></tr>
<tr><td>Previous collaboration with (any) public library</td><td>Yes</td></tr>
<tr><td>Name of the public library who was CSA partner</td><td>Odense Centralbibliotek, Kolding Bibliotek, Aalborg Bibliotekerne, Silkeborg Bibliotek, Glostrup Bibliotek</td></tr>
<tr><td>Rating statements about the collaboration with public library in CSA*</td><td>
<table>
<tr><th>RATING</th><th>STRONGLY AGREE</th><th>AGREE</th><th>DISAGREE</th><th>STRONGLY DISAGREE</th></tr>
<tr><td>My library easily chose the public library to co-organise the CSA</td><td></td><td></td><td></td><td></td></tr>
<tr><td>The aims of the collabo-ration were clear</td><td></td><td></td><td></td><td></td></tr>
<tr><td>The collabo-ration met</td><td></td><td></td><td></td><td></td></tr>
</table>
</td></tr>
</table>

	our strategic priorities				
	It was easy to run and manage collaborative CSA				
	All sides put in equal effort				
	The public library staff demonstrated skills and knowledge in creating CSA				
	The university library staff of acquired new skills thanks to the public library staff				
	We plan to organise more CSA in the future in collaboration with public library				

Rating statements about **barriers** in the collaboration with public library in CSA

RATING	STRONGLY AGREE	AGREE	DISAGREE	STRONGLY DISAGREE
lack of resources (staff, time, etc.)				
lack of experience in co-organising events				
different work culture between the libraries				
administrative barriers				
financial barriers				
insufficient technical equipment				
geographical distance of libraries				
lack of knowledge about CS				

<table>
<tr><td>Rating statements about benefits in the collaboration with public library in CSA</td><td>
<table>
<tr><th>RATING</th><th>STRONGLY AGREE</th><th>AGREE</th><th>DISAGREE</th><th>STRONGLY DISAGREE</th></tr>
<tr><td>It had positive outcomes for the local population</td><td></td><td></td><td></td><td></td></tr>
<tr><td>It had positive outcomes for the scientific population</td><td></td><td></td><td></td><td></td></tr>
<tr><td>It had positive outcomes for university library</td><td></td><td></td><td></td><td></td></tr>
<tr><td>It helped library staff with knowledge transform</td><td></td><td></td><td></td><td></td></tr>
<tr><td>It made libraries more visible to public</td><td></td><td></td><td></td><td></td></tr>
<tr><td>It helped with improving existing library services</td><td></td><td></td><td></td><td></td></tr>
<tr><td>It has created strong business ties</td><td></td><td></td><td></td><td></td></tr>
</table>
</td></tr>
<tr><td>Other institutions that collaborated in conducting CSA</td><td>No</td></tr>
<tr><td>Role of the other institutions</td><td>N/A</td></tr>
</table>

Analysis

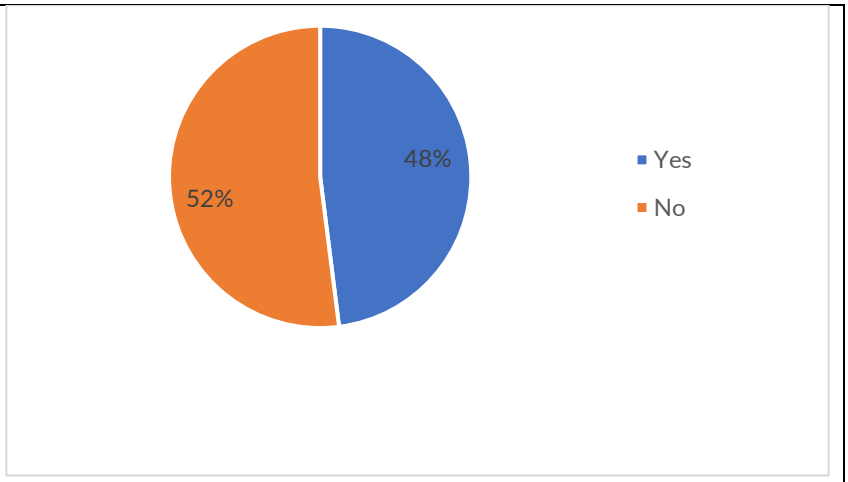
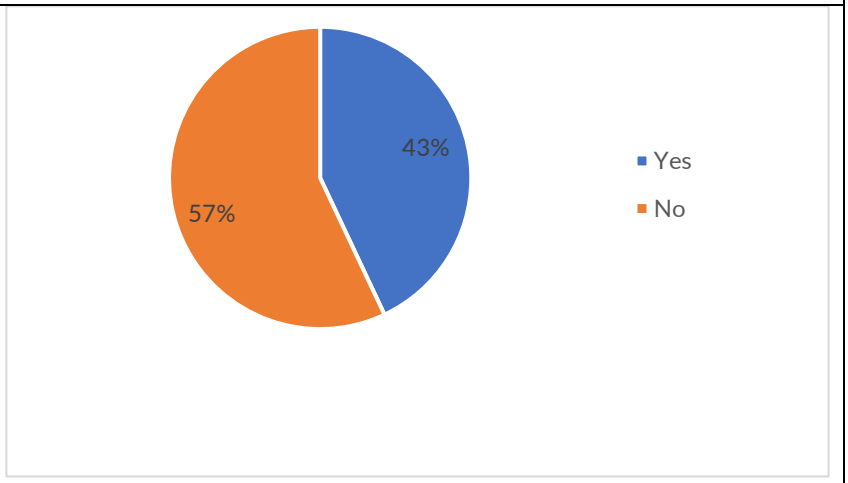
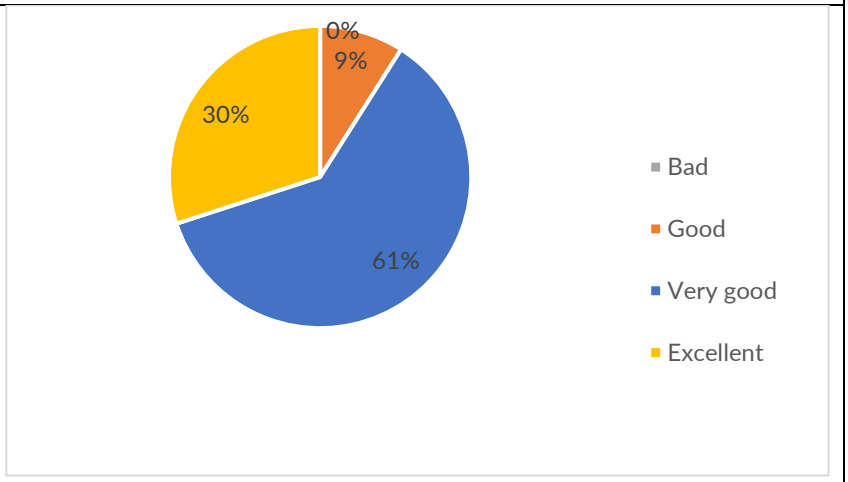
Table 2.2.8. "Citizen Science and Partnerships" collaboration analysis

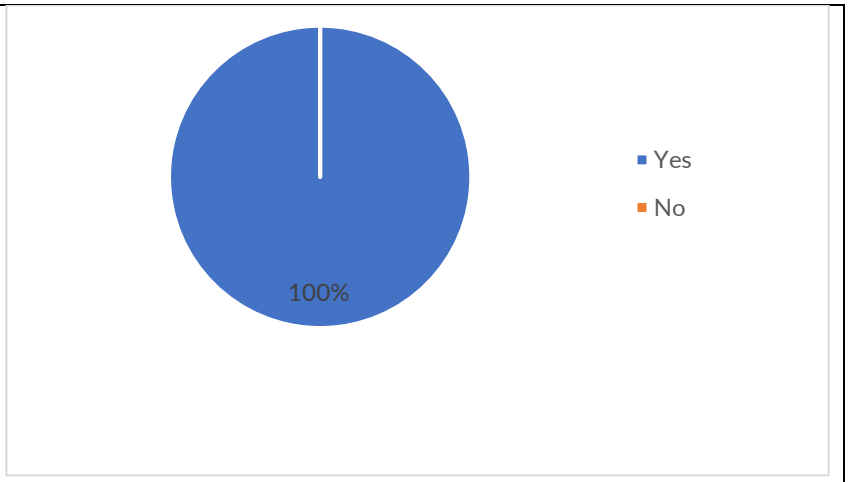
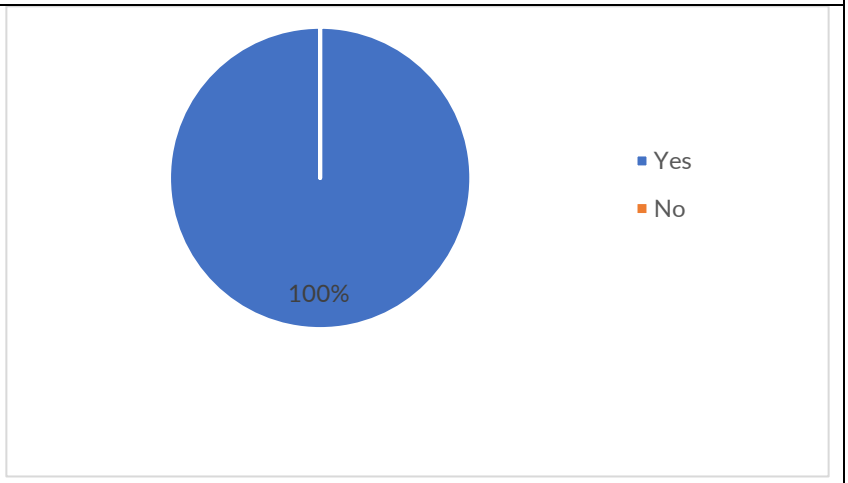
Strengths	Challenges
Given that it is known that SDU organised CSA in collaboration with many public libraries, it is commendable that it was determined that all sides put in equal effort and that the public library staff demonstrated skills and knowledge in creating CSA. During the collaborative organisation of CSA, there were no administrative barriers, and the technical equipment was sufficient. It was emphasised that the biggest benefits were the library staff knowledge transformation and the increase in the visibility of libraries to the public.	Challenges faced by SDU in conducting CSA were lack of resources and lack of finances. Different work culture between the libraries was also mentioned as a challenge, but considering the excellent results of CSA, it can be said that this challenge was successfully overcome. Although CSA talked about partnership as a topic, SDU did not use the opportunity to invite other external partners besides libraries to join the dialogue.

CSA participants aspect

Table 2.2.9. "Citizen Science and Partnerships" participants evaluation

Participants evaluation (post-event questionnaire)	
Number of participants	23

Awareness of the existence of CS and/or OS before CSA	
Participation in the CS and/or OS before CSA	
Rating of satisfaction of CSA	
Explanation of the satisfaction rating *optional	None

Gaining new knowledge in CSA	
Knowledge gained in CSA will be used in the future	
Ideas for the future CSA *optional	None

Analysis

Table 2.2.10. "Citizen Science and Partnerships" participants evaluation analysis

Strengths	Challenges
Almost 50% of the participants were previously familiar with OS and CS topics, and 43% of them participated in them in the past. The participants mostly rated CSA as very good.	Unfortunately, none of the participants explained their satisfaction rating, so SDU did not receive information about what they might be able to repeat in future activities and what they might need to improve.

It is impressive that 100% of the participants, regardless of the fact that it turned out that they already knew something about CS and OS topics, claimed to have gained new knowledge, and 100% of the participants will be able to use that. new knowledge in the future.	The participants also did not express themselves and make suggestions for future CSAs, so the SDU does not have information about which future topics might be of interest to the participants.

Conclusion

With its CSA "Citizen Science and Partnerships", SDU managed to collaborate with a large number of public libraries and transfer its own knowledge and experience about CS to them, as well as establish a dialogue and strengthen business ties. The CSA concept was successfully developed, and the workshops encouraged all participants to actively participate and express their thoughts on the given topics to gain new knowledge. By transferring experiences and showing examples of world practice, SDU touched all fields of science, and by implementing CSA, the library staff increased their organisational, managerial and communication skills. To attract even more attention to the subject of CS, SDU should think about larger and more comprehensive promotion in future activities and consider involving other external institutions (except public libraries). The most valuable result of the workshop was the transfer of knowledge about CS, and the participants confirmed that they would use this knowledge in their future business.

2.3 "Citizen science, for a research open to all" – a dialogue with citizens, libraries and funders" – UT

Table 2.3. About "Citizen Science for a research open to all"

Summary of the activity			
Date: 7 and 8 June 2022	**Duration:** 2 days	**Participants:** Teaching staff, students	**Number of participants:** 50
Public library (partner): Turin public libraries		**Speakers/lecturers:** Andrea Sforzi Alessia Smaniotto Michelle Riccardi Camelia Boban	**Number of speakers/lecturers:** 4
Other external partners: ECSA Italia		**Location**: online	**Language:** Italian
Collaborational tasks			
UT - connection with the ESCA Italia - organisation of the event and providing experts		**Turin public libraries** - providing the participants (public library users and librarians)	
Data analysed			
CS report		Completed	
Survey for the organisers		Completed	
Questionnaire for the participants		Completed	
Other data and resources		internal documentation	

Activity description

Context and programme

Main theme: CS in Italian libraries

Framework: part of the CeOS_SE project

Organisers: TU, Turin public libraries, ESCA Italia

Mode of engagement of the participants: lecture, dialogue

Aim: enhancing the CS dimension to Italian libraries and their users

CSA details

In collaboration with the Turin public libraries, UT organised a two-day event “Citizen science, for a research open to all. A dialogue with citizens, libraries and funders'' with the aim that a larger number of participants could attend the event was organised online on June 7 and 8, 2022. ESCA Italia joined the organisation, and the main goal was to raise awareness of CS among public libraries and their users.

CS and OS practices were presented on the first day. The main expert for CS in Italy and Director of the Maremma Natural History Museum, Andrea Sforzi, explained to the attendees what is and what is not CS and gave some good examples of successful CS projects. Alessia Smaniotto, OPERAS Research Project Coordination Manager, gave examples of how to connect CS with the humanities and social sciences. Michelle Riccardi, Deputy Director and Senior Researcher at Transcrime presented a practical implementation of CS on crime data reused by journalists. Chair and co-founder of WikiDonne User Group, Camelia Boban, gave an engaging talk on how as citizens we can all contribute to knowledge creation using Wikimedia and Wikipedia.

The workshop on 8 June was organised following a template by ECSA Italy and was targeted mostly to funders and public libraries. The discussion touched on the issues of articulation between traditional funding and tools such as digital crowdfunding, the importance of evaluator panels in choosing which CS projects to fund, the importance of professional diversity within them, and their reward. The issue of integrating research ethics and integrity dimensions into the evaluation of citizen science projects was also discussed.

CSA results

The Turin public libraries librarians and users learned about the topic of CS with many examples of world practice with tips on how to become involved in the activities and how to fund it.

CSA organisational aspect

Table 2.3.1. "Citizen Science for a research open to all" activity concept

Activity Concept (source postactivity survey for CSA organisers)			
Name of the activity	"Citizen science, for a research open to all. A dialogue with citizens, libraries and funders"		
Activity location	TU		
Activity duration	2 days		
Participants expected Participants achieved	20 50	Participations rate: (difference between the participants expected and achieved)	100%
Field of science covered by CSA	Social sciences		
Targeted participants	Teaching staff, students, university and public libraries staff		
Participants tasks in CeOS activity	Listeners		

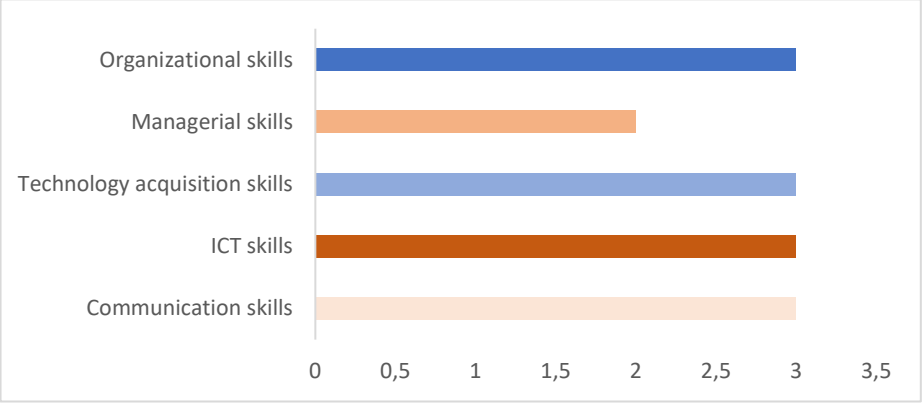
Analysis

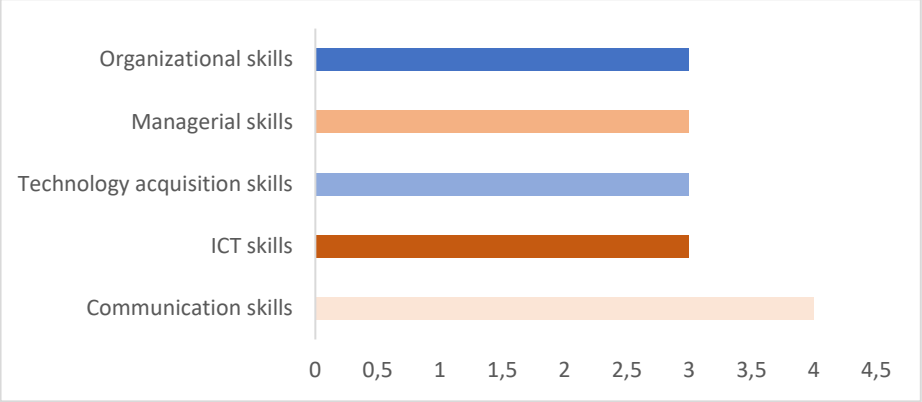
Table 2.3.2. "Citizen Science for a research open to all" activity concept analysis

Strengths	**Challenges**
TU connected with a large number of Turin public libraries so that the number of participants was very large. TU gathered top Italian experts in the field of CS, who could explain all the details about the advantages and benefits of CS with their own examples.	The participants of the event learned a lot about the subject of CS, but they could not experience it themselves, but only hear about other people's experiences.

Given that the event was organised online, participants could actively engage in the conversation with questions and participate in the discussion	

Table 2.3.3. "Citizen Science for a research open to all" library staff organisational skills

Library staff organisational skills	
Previous experience in conducting CSA	No
CSA integration in the existing process or service of the university library	No
Number of the university library staff participated in organisation of CSA	2-5
Rating of library staff skills **before** CSA	

Rating of library staff skills **after** CSA	
New knowledge about CS that university library gained through CSA	*What Citizen Science is, relationship between Open Science e Citizen Science, main CS tools and guides, Italian CS projects, UE CS projects, COESO*
Experience of conducting CSA will expand university library user service in the future	Yes
University library plans to conduct CSA in the future	Yes

Analysis

Table 2.3.4. "Citizen Science for a research open to all" library staff organisational skills analysis

Strengths	Challenges
After the implementation of the CSA, the library staff's skills, namely, managerial and communication skills, increased.	In addition to having no experience in organising CSA, TU library staff did not have fully developed some of the main skills, especially managerial skills.

Given that CS experts were present at the event, the TU library staff learned more about the subject of CS and professionally grew in that direction.	TU did not try to implement CS in the existing processes of the library.

Table 2.3.5. "Citizen Science for a research open to all" promotion

CSA promotion	
Tools used in CSA promotion	university library official website, university library Facebook page, newsletter
Local and national media coverage?	No
Promotion of the CSA influenced on the public interest of the activity	I don´t know
CSA visuals	N/A **because it was online event, the call for registration was send via email*

Analysis

Table 2.3.6. "Citizen Science for a research open to all" promotion analysis

Strengths	Challenges
Given that the event was online, the invitation could be sent to a large number of e-mails.	CSA was not promoted in the local and national media, and considering that the invitations were sent to libraries, TU could not have control over the promotion of CSA to the citizens themselves.

Table 2.3.7. "Citizen Science for a research open to all" collaboration

<table>
<tr><th colspan="2">CSA collaboration</th></tr>
<tr><td>Previous collaboration with (any) public library</td><td>Yes</td></tr>
<tr><td>Name of the public library who was CSA partner</td><td>Turin public libraries</td></tr>
<tr><td>Rating statements about the collaboration with public library in CSA*</td><td>
<table>
<tr><th>RATING</th><th>STRONGLY AGREE</th><th>AGREE</th><th>DISAGREE</th><th>STRONGLY DISAGREE</th></tr>
<tr><td>My library easily chose the public library to co-organise the CSA</td><td></td><td></td><td></td><td></td></tr>
<tr><td>The aims of the collaboration were clear</td><td></td><td></td><td></td><td></td></tr>
<tr><td>The collaboration met our strategic priorities</td><td></td><td></td><td></td><td></td></tr>
<tr><td>It was easy to run and manage collaborative CSA</td><td></td><td></td><td></td><td></td></tr>
<tr><td>All sides put in equal effort</td><td></td><td></td><td></td><td></td></tr>
<tr><td>The public library staff demonstrated skills and knowledge in creating CSA</td><td></td><td></td><td></td><td></td></tr>
<tr><td>The university library staff of acquired new skills thanks</td><td></td><td></td><td></td><td></td></tr>
</table>
</td></tr>
</table>

	to the public library staff					
	We plan to organise more CSA in the future in collabo-ration with public library					

Rating statements about **barriers** in the collaboration with public library in CSA

RATING	STRONGLY AGREE	AGREE	DISAGREE	STRONGLY DISAGREE
lack of resources (staff, time, etc.)				
lack of experience in co-organising events				
different work culture between the libraries				
administrative barriers				
Financial barriers				
insufficient technical equipment				
geographical distance of libraries				
lack of knowledge about CS				

<table>
<tr><td>Rating statements about benefits in the collaboration with public library in CSA</td><td>
<table>
<tr><th>RATING</th><th>STRONGLY AGREE</th><th>AGREE</th><th>DISAGREE</th><th>STRONGLY DISAGREE</th></tr>
<tr><td>It had positive outcomes for the local population</td><td></td><td></td><td></td><td></td></tr>
<tr><td>It had positive outcomes for the scientific population</td><td></td><td></td><td></td><td></td></tr>
<tr><td>It had positive outcomes for university library</td><td></td><td></td><td></td><td></td></tr>
<tr><td>It helped library staff with knowledge transform</td><td></td><td></td><td></td><td></td></tr>
<tr><td>It made libraries more visible to public</td><td></td><td></td><td></td><td></td></tr>
<tr><td>It helped with improving existing library services</td><td></td><td></td><td></td><td></td></tr>
<tr><td>It has created strong business ties</td><td></td><td></td><td></td><td></td></tr>
</table>
</td></tr>
<tr><td>Other institutions that collaborated in conducting CSA</td><td>Yes (ESCA Italia)</td></tr>
<tr><td>Role of the other institutions</td><td>Providing a lecturers and leading a discussion</td></tr>
</table>

Analysis

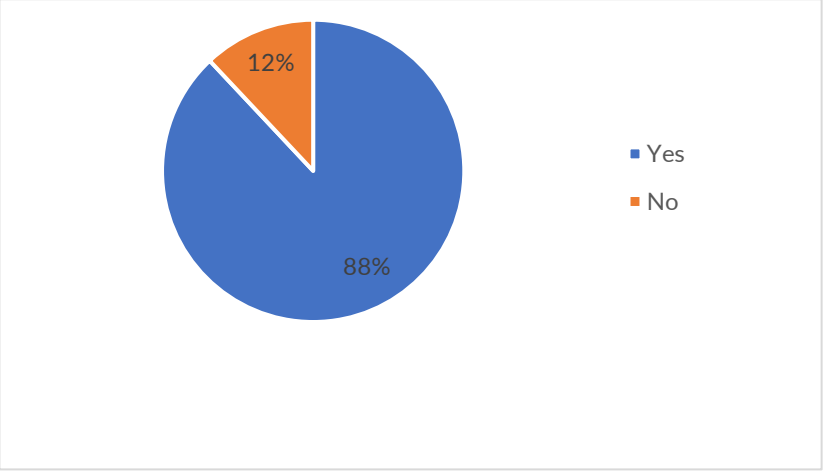
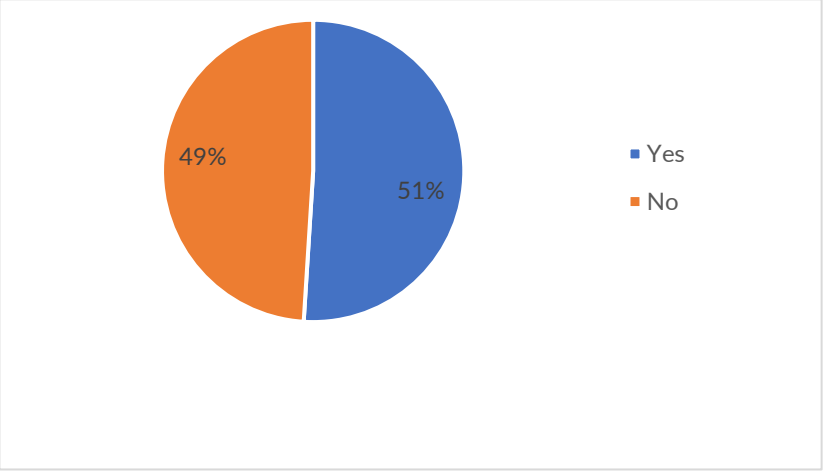
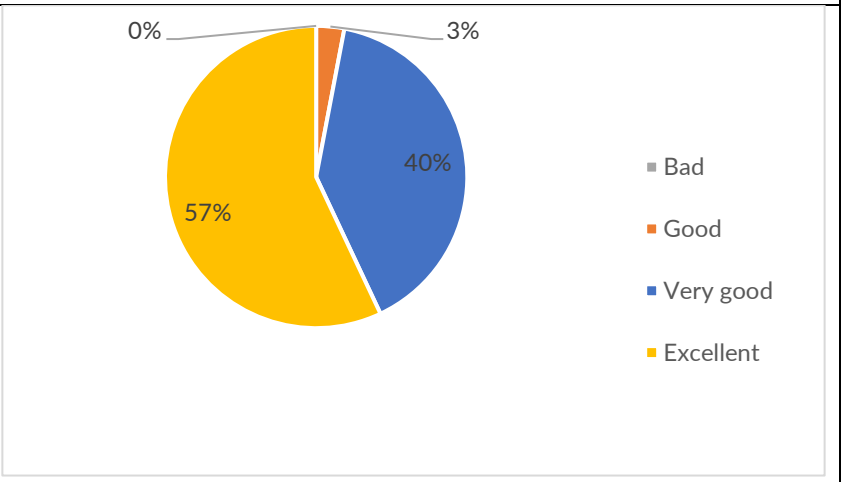
Table 2.3.8. "Citizen Science for a research open to all" collaboration analysis

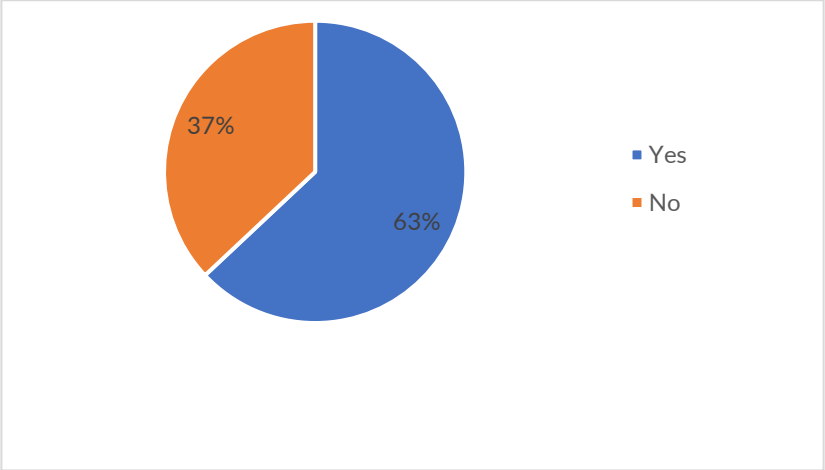
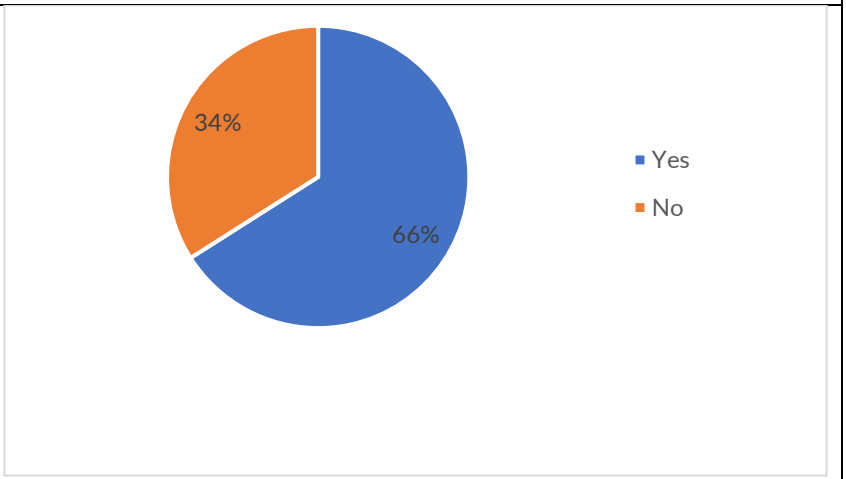
Strengths	Challenges
Considering that in the past it had experience in organising events in collaboration with public libraries, TU was ready to involve several Turin public libraries in the organisation of the event. Some of the public libraries had previous experience with CS, so they demonstrated skill on that topic. Geographical distance between all libraries was not a problem considering that event was in online form. The event had a positive impact for the scientific population and for the university library and made libraries more visible to the public.	TU has borne most of the burden organisationally, unlike the public libraries with which it achieved globalisation. Organisational challenges were contributed by the different work culture between the libraries as well as administrative and financial barriers. Event has not helped with improving existing library services nor has created strong business ties, regardless of all the potential.

CSA participants aspect

Table 2.3.9. "Citizen Science for a research open to all" participants evaluation

Participants evaluation (post-event questionnaire)	
Number of participants	50 *27 participants answered the post event questionnaire

Awareness of the existence of CS and/or OS before CSA	
Participation in the CS and/or OS before CSA	
Rating of satisfaction of CSA	
Explanation of the satisfaction rating *optional	*1. A broad perspective and a nice choice of examples and activities have been presented* *2. Realtors presented also examples from SSH*

	3. It clarified very well the concept of Citizen science for which I had somewhat confused ideas, due to incomplete information previously acquired *4. Clear Speakers clear and interesting relations* *5. I had never taken part in Citizen Science meetings till today* *6. I found the proposed theme interesting* *7. The relations were precise and well articulated.*
Gaining new knowledge in CSA	
Knowledge gained in CSA will be used in the future	
Ideas for the future CSA *optional	*1. Perhaps it was too little publicised;*

	2. The event was very well organised, both for the choice of speakers and for the contents displayed, so I hope that this type of event will always be organised in this way. *3. The relations and the reports proposed were interesting, I would propose other seminars like this*

Analysis

Table 2.3.10. "Citizen Science for a research open to all" participants evaluation analysis

Strengths	Challenges
It is excellent that almost 90% of the participants were previously familiar with OS and CS topics, and over 50% of them participated in them. The participants are generally very satisfied with the event, they like the choice of speakers, and the precision in explaining and clarifying what CS is. Although only 63% of respondents claimed to have learned something new, this is because most of them were already familiar with CS and OS.	Participants noticed that the event was not well publicised, which probably influenced the lower turnout. Although the speakers were expert and the selected topics were clear, 34% of the participants said that they would not use the acquired knowledge in the future

Conclusion

Event "Citizen science, for a research open to all. A dialogue with citizens, libraries and funders brought together many Turin public libraries as well as Italian experts in CS. Considering the diversity of CS examples, the event was held for two days in a row, and in order for as many public libraries and their users as possible to participate, it was held online. Although the participants did not actively participate, they learned many interesting things, and the TU library staff confirmed that they also gained new knowledge about CS and OS topics and improved their communication skills. When planning the next CSA, TU should think about better promotion of the event, creating visuals, involving a larger number of citizens, and professional training of staff in developing organisational skills. It is valuable that ESCA was involved in the event and

that Italian libraries are quite well versed in CS, which means there is potential to organise CSA in TU in the future.

2.4 "Per Scientia, ad Astra: active citizens and dark skies" – UP

Table 2.4. About "Per Scientia, ad Astra: active citizens and dark skies"

Summary of the activity			
Date: 13 May 2022	**Duration:** 3 hours	**Participants:** students	**Number of participants:** 24
Public library (partner): Papacharalambeios Public Central Library		**Speakers/lecturers:** Giannis Tsakonas, Andreas Papalambrou	**Number of speakers/lecturers:** 2
Other external partners: Greek Branch of International Darksky association, 2nd High School of Nafpaktos		**Location:** library	**Language:** Greek
Collaborational tasks			
UP - connection with the Greek Branch of International Dark Sky association - organisation of the event		**Papacharalambeios Public Central Library** - providing the space for lecture - providing the participants	
Data analysed			
CS report		Completed	
Survey for the organisers		Completed	
Questionnaire for the participants		Completed	

Other data and resources	university library website, public library website, internal documentation

Activity description

Context and programme

Main theme: light pollution and its effect on nature and on astronomical observation

Framework: part of the CeOS_SE project

Organisers: UP, Papacharalambeios Public Central Library of Nafpaktos and Greek Branch of International Dark Sky Association

Mode of engagement of the participants: observation, species identification, classification or tagging, dana entry, measurement

Aim: To inform the students on what CS research is and how it is conducted to engage them in gathering data to measure and assess light pollution.

CSA details

For its CSA, UP chose the theme of light pollution: "Per Scientia, ad Astra: active citizens and dark skies", which was organised in collaboration with the public library and another external partner - the Greek Branch of the International Dark Sky Association.

The CSA consisted of several parts. First, Giannis Tsakonas, Acting Director of the Library and Information Centre of the University of Patras, introduced the participants to the topic of CS as well as the goals of the CeOS_SE project.

After that, the representative of the Greek branch of the International Dark Sky Association spoke about the need to control light pollution for the benefit of astronomical research, flora and fauna, as well as human health. It was emphasised that controlled light consumption can help the urban environment, and CSA can influence the making of better decisions.

Citizens (students) participated by recording the degrees of dark sky visibility, the type of light in the area they are in, and the temperature of the light. They had the task of measuring light pollution at the end of May, when the night sky is moonless. The measurement method used was IDA (explained in the lecture), and the records were entered via an online form.

CSA results

The end result of the activity was a map with data on star visibility. A total of 9 participants recorded 20 distinct recordings on different days. Most of them identified a medium range of star visibility. Most of the recordings of Figure 4 were in a suburban

area, whereas in the centre of Nafpaktos city, there were observations of fewer starry skies. However, the few observations of clearer skies managed to give a greater number of stars, 109, in the central districts of Nafpaktos, while the remaining 99 were attributed to suburban areas, such as Ano Platanitis, Dendro and Managouli.

The results showed that most of the public light fixtures cut the distribution of light (30), and most of these were observed in Ano Platanitis. It is encouraging that in the central parts of Nafpaktos, light fixtures fully cut the distribution of light, and only six lights were partially cut. Fifty-five of the light fixtures are using warm temperature light, and only 12 are using cold; almost all of them are in central Nafpaktos (CeOS_SE Project, 2022)

CSA organisational aspect

Table 2.4.1. "Per Scientia, ad Astra: active citizens and dark skies" activity concept

Activity Concept (source postactivity survey for CSA organisers)			
Name of the activity	"Per Scientia, ad Astra: active citizens and dark skies"		
Activity location	UP		
Activity duration	3 hours		
Participants expected Participants achieved	20 24	Participations rate: (difference between the participants expected and achieved)	100%
Field of science covered by CSA	Natural sciences		
Targeted participants	Students (2nd High School of Nafpaktos)		
Participants tasks in CeOS activity	observation, species identification, classification or tagging, dana entry, measurement		

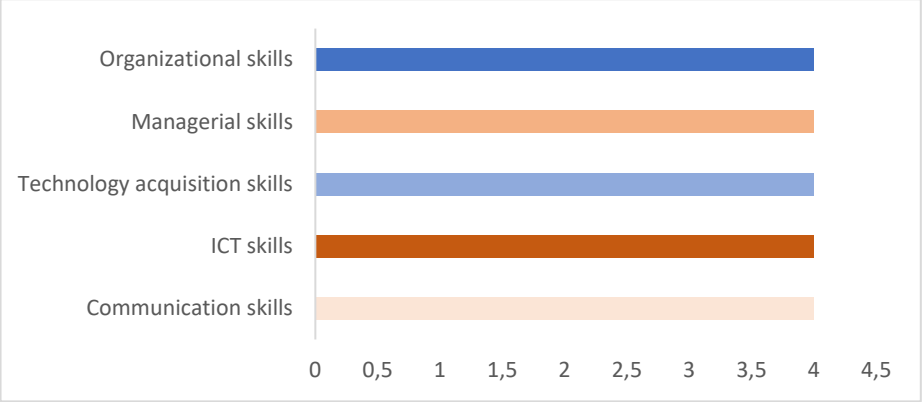
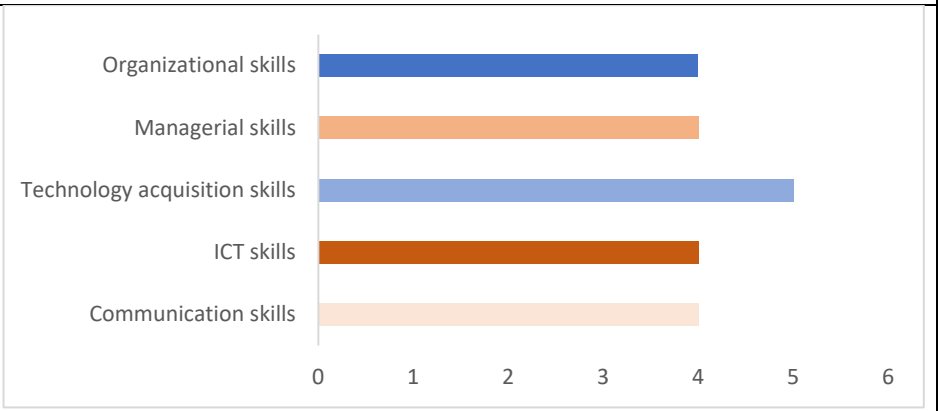
Analysis

Table 2.4.2. "Per Scientia, ad Astra: active citizens and dark skies" activity concept analysis

Strengths	Challenges
UP had a strictly targeted group of participants for its CSA, so the content of the CSA could be more easily prepared and aimed at that age group. The chosen topic is very interesting and close to the students, and the CSA tasks were clear enough so the students could participate effectively and, most importantly, understand the purpose of the CSA and the benefit of the research itself.	Given that 9 out of 24 participants took part in the activity itself, the reason for this may be insufficient motivation and incentive to participate.

Table 2.4.3. "Per Scientia, ad Astra: active citizens and dark skies" library staff organisational skills

Library staff organisational skills	
Previous experience in conducting CSA	No
CSA integration in the existing process or service of the university library	No
Number of the university library staff participated in organisation of CSA	2-5

Rating of library staff skills **before** CSA	
Rating of library staff skills **after** CSA	
New knowledge about CS that university library gained through CSA	*We learned the importance of citizen participation in science as well as the process of activating citizens through these actions. We also learned about the consequences of light pollution.*
Experience of conducting CSA will expand university library user service in the future	Yes
University library plans to conduct CSA in the future	Yes

Analysis

Table 2.4.4. "Per Scientia, ad Astra: active citizens and dark skies" library staff organisational skills analysis

Strengths	Challenges
Although it has never organised a CSA, the UP library staff showed a great number of skills that it used to create the activity. After the implementation of CSA, an increase in library staff technology acquisition skills was observed. In addition to the fact that the staff learned about the importance of citizen participation in scientific research they also learned something more about the subject of light pollution.	UP did not integrate CSA within the existing library process, although the selected topic had potential for integration (for example, digitization/storage in the repository of the folder with light pollution results).

Table 2.4.5. "Per Scientia, ad Astra: active citizens and dark skies" promotion

CSA promotion	
Tools used in CSA promotion	university library official website, university library Facebook page https://library.upatras.gr/event/darkskycitizens https://library.upatras.gr/news/perscientiaadastra
Local and national media coverage?	Yes
Promotion of the CSA influenced on the public interest of the activity	Yes

CSA visuals	 *Figure 1 "Per Scientia, ad Astra: active citizens and dark skies" promotional visual*

Analysis

Table 2.4.6- "Per Scientia, ad Astra: active citizens and dark skies" promotion analysis

Strengths	Challenges
UP has an extremely creative staff that makes a beautiful visual that attracts attention.	CSA was targeted at specific participants by sharing information about the activity on multiple channels, the university social media as well as the university newsletter.

Table 2.4.7. "Per Scientia, ad Astra: active citizens and dark skies" collaboration

<table>
<tr><th colspan="2">CSA collaboration</th></tr>
<tr><td>Previous collaboration with (any) public library</td><td>Yes</td></tr>
<tr><td>Name of the public library who was CSA partner</td><td>Papacharalambeios Public Central Library</td></tr>
<tr><td>Rating statements about the collaboration with public library in CSA*</td><td>
<table>
<tr><th>RATING</th><th>STRONGLY AGREE</th><th>AGREE</th><th>DISAGREE</th><th>STRONGLY DISAGREE</th></tr>
<tr><td>My library easily chose the public library to co-organise the CSA</td><td></td><td></td><td></td><td></td></tr>
<tr><td>The aims of the collaboration were clear</td><td></td><td></td><td></td><td></td></tr>
<tr><td>The collaboration met our strategic priorities</td><td></td><td></td><td></td><td></td></tr>
<tr><td>It was easy to run and manage collaborative CSA</td><td></td><td></td><td></td><td></td></tr>
<tr><td>All sides put in equal effort</td><td></td><td></td><td></td><td></td></tr>
<tr><td>The public library staff demonstrated skills and knowledge in creating CSA</td><td></td><td></td><td></td><td></td></tr>
<tr><td>The university library staff of acquired new skills thanks</td><td></td><td></td><td></td><td></td></tr>
</table>
</td></tr>
</table>

to the public library staff					
We plan to organise more CSA in the future in collabo-ration with public library					

Rating statements about **barriers** in the collaboration with public library in CSA

RATING	STRONGLY AGREE	AGREE	DISAGREE	STRONGLY DISAGREE
lack of resources (staff, time, etc.)				
lack of experience in co-organising events				
different work culture between the libraries				
administrative barriers				
financial barriers				
insufficient technical equipment				
geographical distance of libraries				
lack of knowledge about CS				

<table>
<tr><td>Rating statements about benefits in the collaboration with public library in CSA</td><td>
<table>
<tr><th>RATING</th><th>STRONGLY AGREE</th><th>AGREE</th><th>DISAGREE</th><th>STRONGLY DISAGREE</th></tr>
<tr><td>It had positive outcomes for the local population</td><td></td><td></td><td></td><td></td></tr>
<tr><td>It had positive outcomes for the scientific population</td><td></td><td></td><td></td><td></td></tr>
<tr><td>It had positive outcomes for university library</td><td></td><td></td><td></td><td></td></tr>
<tr><td>It helped library staff with knowledge transform</td><td></td><td></td><td></td><td></td></tr>
<tr><td>It made libraries more visible to public</td><td></td><td></td><td></td><td></td></tr>
<tr><td>It helped with improving existing library services</td><td></td><td></td><td></td><td></td></tr>
<tr><td>It has created strong business ties</td><td></td><td></td><td></td><td></td></tr>
</table>
</td></tr>
<tr><td>Other institutions that collaborated in conducting CSA</td><td>Yes (Greek Branch of International Dark Sky Association, 2nd High School of Nafpaktos)</td></tr>
<tr><td>Role of the other institutions</td><td>The Greek Branch of International Dark Sky Association provided the lecture and IDA method.

2nd High School of Nafpaktos provided the participants,</td></tr>
</table>

Analysis

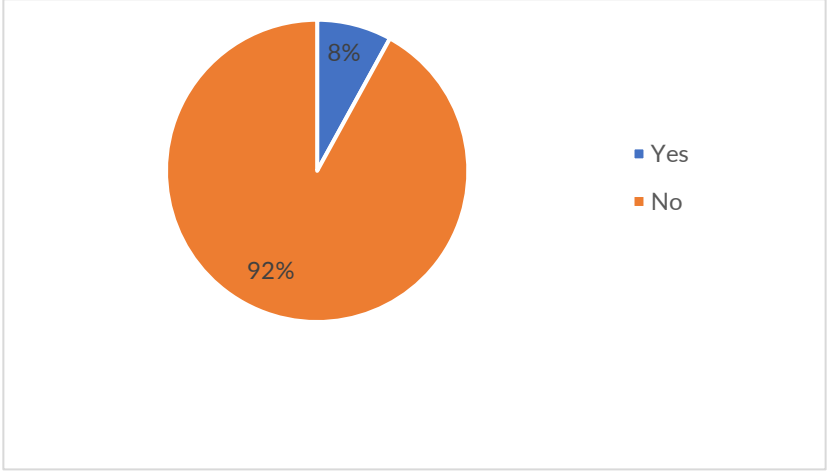
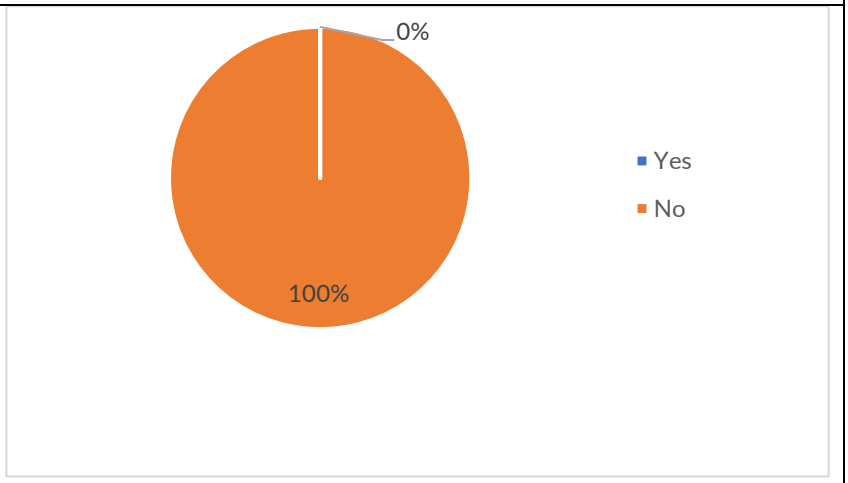
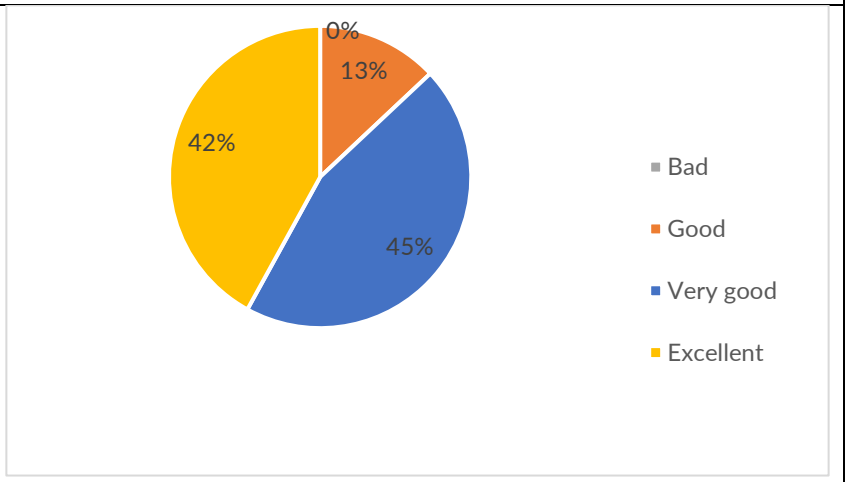
Table 2.4.8. "Per Scientia, ad Astra: active citizens and dark skies" collaboration analysis

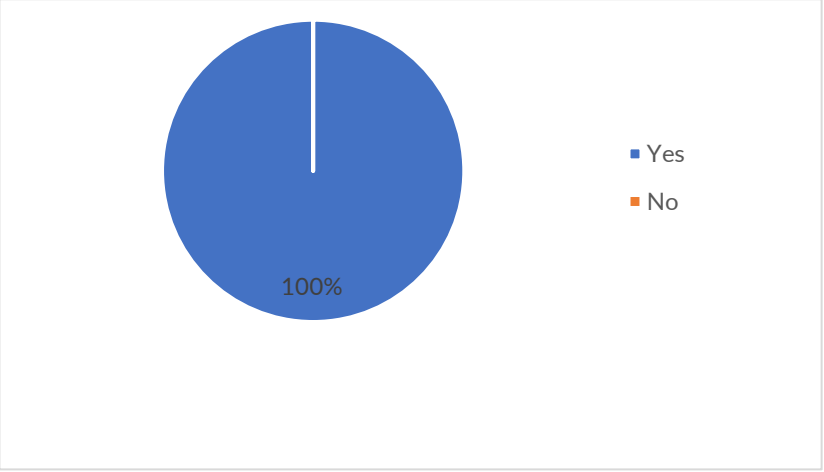
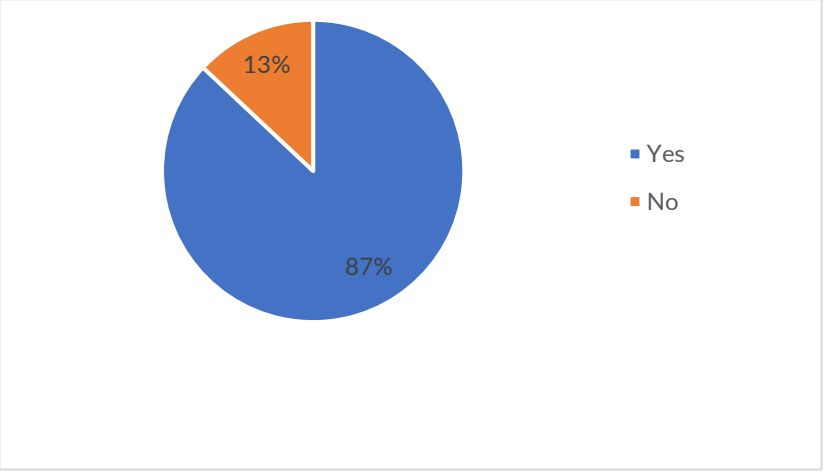
Strengths	Challenges
UP had previous experiences in collaboration with the public, which surely influenced the good organisation of the CSA. It was confirmed that it was easy to choose a public library for collaboration, and jointly manage the CSA because all sides put in equal effort. Collaboration did not require administrative barriers, and CSA was also technically well equipped. CSA had positive outcomes for the local population, and helped the library staff with knowledge transformation.	The barrier they encountered in the joint collaboration was the lack of resources but also the geographical configuration of the terrain, as there is a channel between two libraries. Both the university and the public library were not very familiar with the subject of CS beforehand.

CSA participants aspect

Table 2.4.9. "Per Scientia, ad Astra: active citizens and dark skies" participants evaluation

Participants evaluation (post-event questionnaire)	
Number of participants	24

Awareness of the existence of CS and/or OS before CSA	
Participation in the CS and/or OS before CSA	
Rating of satisfaction of CSA	
Explanation of the satisfaction rating *optional	None

Gaining new knowledge in CSA	
Knowledge gained in CSA will be used in the future	
Ideas for the future CSA *optional	1. *research on flora and fauna* 2. *gained new Knowledge on citizen science, astronomy and the environment* 3. *citizen science research and participation should be presented to more people and more often* 4. *use new Knowledge in the future*

Analysis

Table 2.4.10. "Per Scientia, ad Astra: active citizens and dark skies" participants evaluation analysis

Strengths	Challenges
UP chose a target group that was not familiar with OS or CS topics and did not participate in them, and it was confirmed that 100% of the participants gained new knowledge, which is the essence of CSA and the popularisation of OS and CS. The participants were mostly satisfied with the CSA, and some of them gave suggestions for future activities.	No participant wanted to explain the CSA satisfaction rating, so UP did not receive feedback on the organisational good and bad sides of CSA that could be improved for future activities.

Conclusion

In its CSA "Per Scientia, Ad Astra: active citizens and dark skies", UP brought the topic of light pollution to high school students. In addition to the fact that the activity was organised in collaboration with the public library, a high school and an organisation whose primary activity is observing the sky also joined the organisation. Although the library had no experience organising CSA in the past, UP had experience in collaborating events with the public library, which proved to be a facilitating circumstance for holding this CSA. The target group was carefully selected, and it is important to point out that the library staff also emphasised that they learned something new about the subject of light pollution, and their technology acquisition skills increased. For future similar events, UP should think about using the existing resources of the library or integrating the activity into the active processes of the library and spread information about the activities on several communication channels. UP organised an extremely high-quality CSA where the participants could learn not only something about OS and CS but also the important contribution of qualitative research to the urban environment in which they live.

2.5 "Citizen Science: active citizens in conducting, producing and utilising research" – UCY

Table 2.5. About "Citizen Science: active citizens in conducting, producing and utilising research"

Summary of the activity			
Date: 24 June 2022	**Duration:** 3 hours	**Participants:** all interested citizens, all library users	**Number of participants:** 37
Public library (partner): Strovolos Municipality Library		**Speakers/lecturers:** Sylvia Koukounidou Marina Vryonidou George Artopoulos Christos Laoudias	**Number of speakers/lecturers:** 4
Other external partners: None		**Location:** library	**Language:** Greek
Collaborational tasks			
UCY - providing the space for the event - connection with the Strovolos Municipality, the Cyprus Institute and KIOS Research and Innovation Centre of Excellence		**Strovolos Municipality Library** - providing the participants (public library users)	
Data analysed			
CS report		Completed	
Survey for the organisers		Completed	
Questionnaire for the participants		Completed	

Other data and resources	University library website, public library website, local news website, Social media

Activity description

Context and programme

Main theme: introductory overview of terms and basic knowledge of OS and CS through examples from the cultural heritage field

Framework: part of the CeOS_SE project

Organisers: UCY and Strovolos Municipality Library

Mode of engagement of the participants: listeners

Aim: Increasing awareness of CS as one of the critical components of OS to the local community

CSA details

CS is a rather unknown topic in Cyprus, so UCY took the opportunity to teach the local community about the benefits of CS under PR2A2 part of the project with the event named “Citizen Science: Active citizens in conducting, producing and utilising research” on June 24, 2022.

Introductory presentation was given by Ms. Sylvia Koukounidou of the UCY, in which the project CeOS_SE was presented, as well as everything that citizens should know about CS and OS.

Next, Ms Marina Vryonidou presented the project she curated named "About Strovolos - The creation of an archive of the social history of a city". The project was about the history of Strovolos municipality, where with the active involvement of citizens, they collected and created a cultural heritage archive to be further used by citizens and other stakeholders for research.

Then, Dr. George Artopoulos from the Cyprus Institute made a lecture entitled "Use of digital methods for access to common resources to activate and reintegrate urban heritage into the life of the modern city", in which he presented virtual environments and digital simulation for the study of architecture heritage and the creative exploration of historical narratives. He also presented how with the use of technology and data collection citizens can be part of research and decision making for urban development.

Finally, Dr. Christos Laoudias from the KIOS Research and Innovation Centre of Excellence presented “Crowdsourcing for Citizen Science: Applications of the KIOS Research and Innovation Centre of Excellence in mobile phones for data collection”. His very interesting presentation was focused on how through crowdsourcing many

apps are created for health or urban daily problems solving, e.g., FixCyprus, CovTracker apps.

CSA results

The local community was shown the value of CS within OS, and examples from practice were presented of how they could become involved and participate in such activities.

CSA organisational aspect

Table 2.5.1. "Citizen Science: active citizens in conducting, producing and utilising research" activity concept

Activity Concept (source postactivity survey for CSA organisers)				
Name of the activity	Citizen Science: Active citizens in conducting, producing and utilising research			
Activity location	UCY			
Activity duration	3 hours			
Participants expected Participants achieved	20 37		Participations rate: (difference between the participants expected and achieved)	100 %
Field of science covered by CSA	Humanities			
Targeted participants	all interested citizens, all library users			
Participants tasks in CeOS activity	listeners			

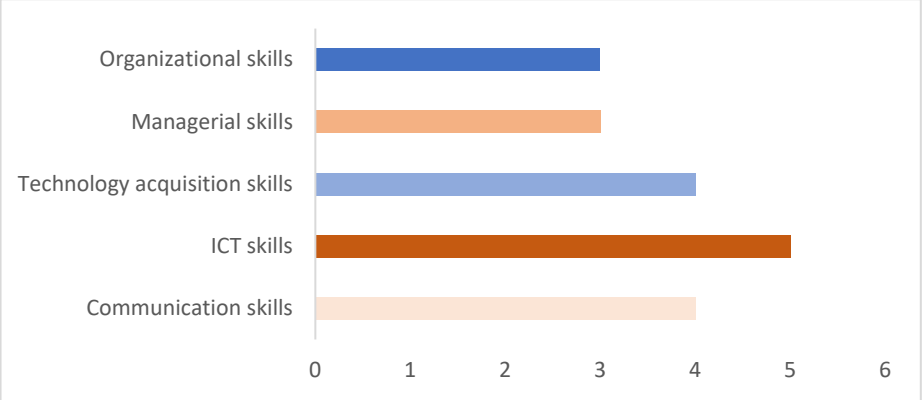
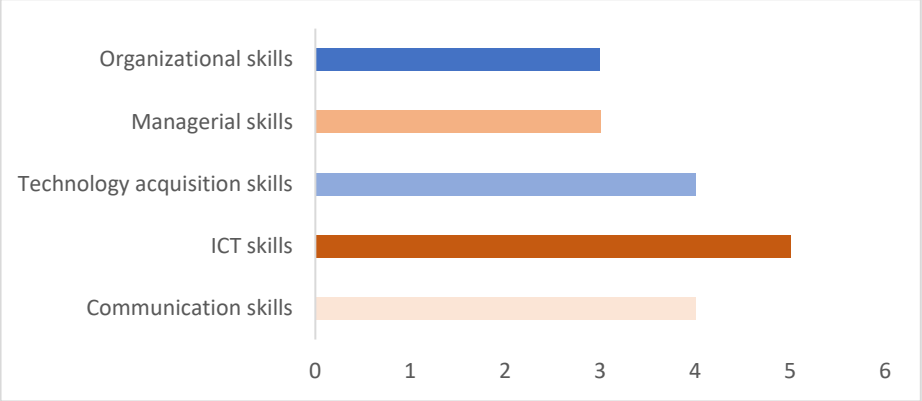
Analysis

Table 2.5.2. "Citizen Science: active citizens in conducting, producing and utilising research" activity concept analysis

Strengths	Challenges
UCY has a lot of space so it was able to accommodate a large number of participants. Both UCY and public library partners are well connected with the community so the response to the event was great. UCY has recognised experts from Cyprus who can present citizen science with examples, so it has chosen 3 interesting lecturers for the event	Although it is a new knowledge and the people participating were interested for it by listening to the examples they were not able to actively participate in the CSA but listened to examples from practice.

Table 2.5.3. "Citizen Science: active citizens in conducting, producing and utilising research" library staff organisational skills

Library staff organisational skills	
Previous experience in conducting CSA	No
CSA integration in the existing process or service of the university library	No
Number of the university library staff participated in organisation of CSA	More than 10

Rating of library staff skills **before** CSA	
Rating of library staff skills **after** CSA	
New knowledge about CS that university library gained through CSA	*"Learned new science potentials with the involvement of citizens"*
Experience of conducting CSA will expand university library user service in the future	Yes
University library plans to conduct CSA in the future	Yes

Analysis

Table 2.5.4. "Citizen Science: active citizens in conducting, producing and utilising research" library staff organisational skills analysis

Strengths	Challenges
More than 10 library staff participated in the organisation of the event, which certainly facilitated the process of realising the CSA UCY library staff has strong ICT skills, which must have influenced the implementation of a successful CSA The good attendance, the reactions of the participants as well as the interesting topics encouraged UCY to think about organising similar activities in the future.	Considering that UCY had not much experience with the CSA organisation in general, the activity was not implemented in the existing library processes It was concluded that the skills of UCY library staff did not change but slightly improved after the implementation of CSA. The reason for this is probably that the CSA was organised in the form of lectures, which did not require the active participation of the citizens, thus reducing the possible additional tasks of the library staff.

Table 2.5.5. "Citizen Science: active citizens in conducting, producing and utilising research" promotion

CSA promotion	
Tools used in CSA promotion	university library official website, university library Facebook page, university library Twitter account, university library Instagram account, production of visuals, leaflets and posters, an article in a local newspaper https://library.ucy.ac.cy/event/%ce%b7%ce%bc%ce%b5%cf%81%ce%af%ce%b4%ce%b1-ceos_se/?lang=en https://paideia-news.com/panepistimio-kyproy/2022/06/20/imerida-pk-epistimi-kai-polites-energoi-polites-sti-dieksagogi-paragogi-kai-aksiopoiisi-tis-ereynas/?utm_source=newsletter&utm_medium=email&utm_campaign=newsletter
Local and national media coverage?	Yes

Promotion of the CSA influenced on the public interest of the activity	Yes
CSA visuals	 *Figure 2 "Citizen Science: active citizens in conducting, producing and utilising research" promotional visual*

Analysis

Table 2.5.6. "Citizen Science: active citizens in conducting, producing and utilising research" promotion analysis

Strengths	Challenges
UCY has many communication channels through which they share the news about CSA, so the local community was well informed about the event. The event was also promoted on the local media which is important for faster and wider information transfer	Placing information on a large number of communication channels probably took a lot of time.

Table 2.5.7. "Citizen Science: active citizens in conducting, producing and utilising research" collaboration

<table>
<tr><th colspan="2">CSA collaboration</th></tr>
<tr><td>Previous collaboration with (any) public library</td><td>No</td></tr>
<tr><td>Name of the public library who was CSA partner</td><td>Strovolos Municipality Library</td></tr>
<tr><td>Rating statements about the collaboration with public library in CSA*</td><td>
<table>
<tr><th>RATING</th><th>STRONGLY AGREE</th><th>AGREE</th><th>DISAGREE</th><th>STRONGLY DISAGREE</th></tr>
<tr><td>My library easily chose the public library to co-organise the CSA</td><td></td><td></td><td></td><td></td></tr>
<tr><td>The aims of the collabo-ration were clear</td><td></td><td></td><td></td><td></td></tr>
<tr><td>The collabo-ration met our strategic priorities</td><td></td><td></td><td></td><td></td></tr>
<tr><td>It was easy to run and manage collaborative CSA</td><td></td><td></td><td></td><td></td></tr>
<tr><td>All sides put in equal effort</td><td></td><td></td><td></td><td></td></tr>
<tr><td>The public library staff demonstrated skills and knowledge in creating CSA</td><td></td><td></td><td></td><td></td></tr>
<tr><td>The university library staff of acquired new</td><td></td><td></td><td></td><td></td></tr>
</table>
</td></tr>
</table>

	skills thanks to the public library staff					
	We plan to organise more CSA in the future in collabo-ration with public library					

Rating statements about **barriers** in the collaboration with public library in CSA

RATING	STRONGLY AGREE	AGREE	DISAGREE	STRONGLY DISAGREE
lack of resources (staff, time, etc.)				
lack of experience in co-organising events				
different work culture between the libraries				
administrative barriers				
Financial barriers				
insufficient technical equipment				
geographical distance of libraries				
lack of knowledge about CS				

Rating statements about **benefits** in the collaboration with public library in CSA	

RATING	STRONGLY AGREE	AGREE	DISAGREE	STRONGLY DISAGREE
It had positive outcomes for the local population				
It had positive outcomes for the scientific population				
It had positive outcomes for university library				
It helped library staff with knowledge transform				
It made libraries more visible to public				
It helped with improving existing library services				
It has created strong business ties				

Other institutions that collaborated in conducting CSA	No
Role of the other institutions	N/A

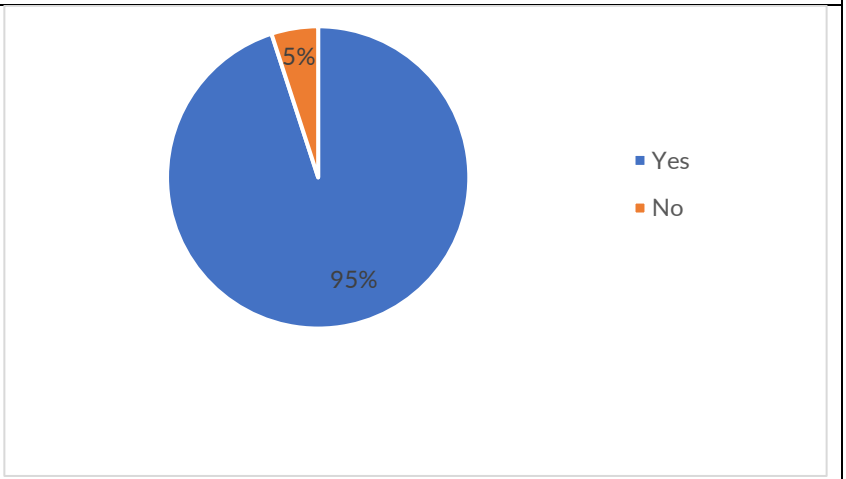
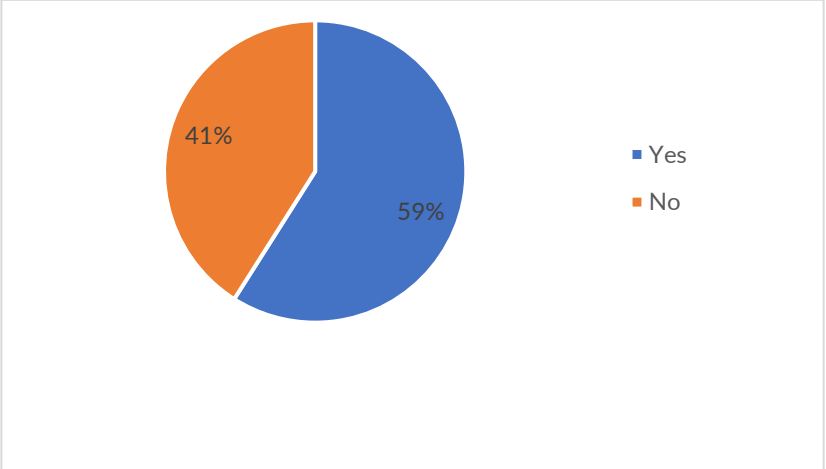
Analysis

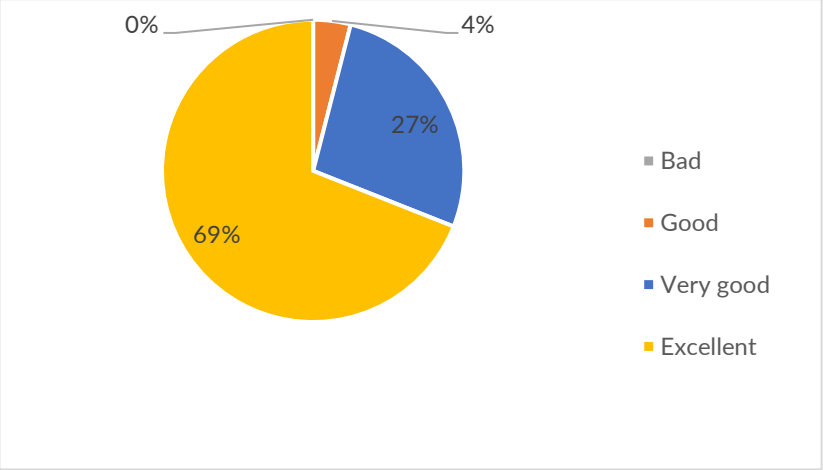
Table 2.5.8. "Citizen Science: active citizens in conducting, producing and utilising research" collaboration analysis

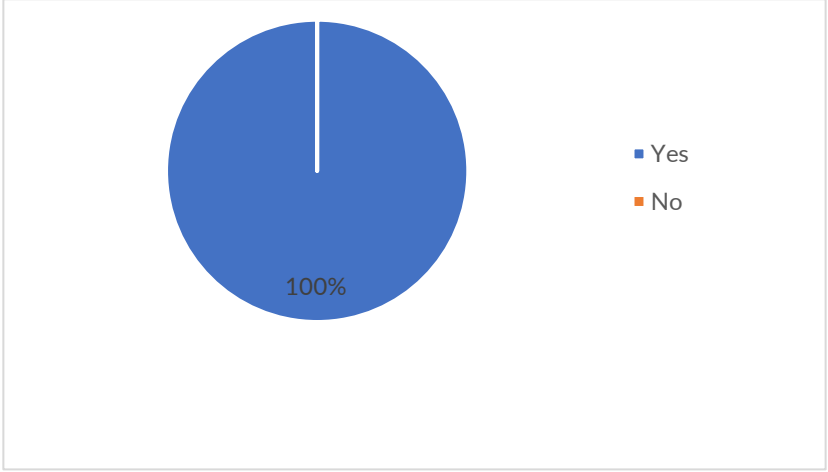
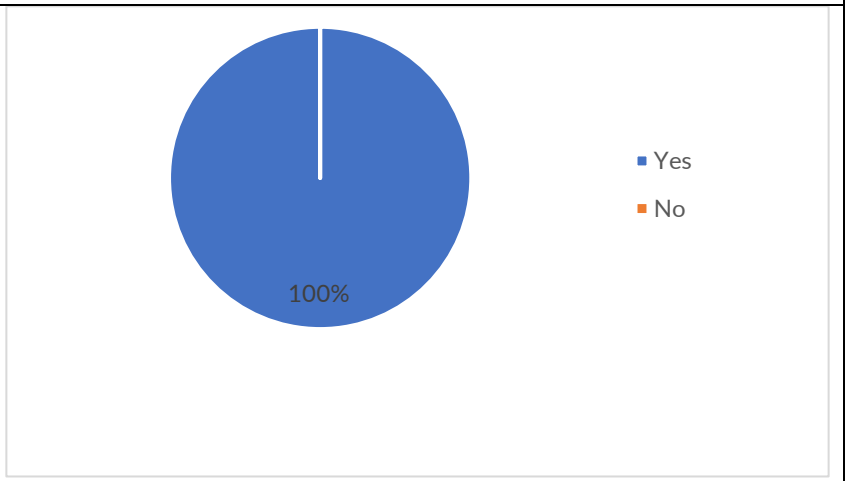
Strengths	Challenges
UCY confirmed that the aims of the collaboration and strategic priorities were clear in the joint organisation of CSA Regardless of the organisational challenges UCY plans to continue cooperating with the public library in the CSA organisation in the future. This means that UCY was able to see what can be improved on its own practical experience and wants to continue developing in the direction of CS. Good administrative and financial organisation of institutions, as well as sufficient technical equipment contributed to the joint organisation. The joint CSA had a positive effect on the local and scientific community, as well as on university and public libraries who want to continue the cooperation.	This was the first time that UCY cooperated with the public library, and given that it was announced that it was also their first CSA, it can be assumed that it was organisationally challenging. The survey also revealed that the public library was not familiar with the topic of CSA before the activity. Organisationally, most of the work tasks belonged to UCY, and they claimed that the different work culture between the libraries was one of the biggest barriers.

CSA participants aspect

Table 2.5.9. "Citizen Science: active citizens in conducting, producing and utilising research" participants evaluation

Participants evaluation (post-event questionnaire)	
Number of participants	37 *22 of them answered the questionnaire
Awareness of the existence of CS and/or OS before CSA	
Participation in the CS and/or OS before CSA	

Rating of satisfaction of CSA	
Explanation of the satisfaction rating *optional	1. *All the presentations were great and the organisation of the event was amazing. Congratulations.* 2. *Presentations were amazing, all with new information.* 3. *The use of innovative methods of Open Access.* 4. *Congratulations for the excellent organisation of the event and the excellent subject matter.* 5. *The presentation "Peri Strovolou". The presentation of Cyprus Institute: very useful technology.* 6. *Knowledge of new activities.* 7. *The interoperability of the presented applications.* 8. *Very interesting presentations.* 9. *The presentations and what was announced about the existing applications.* 10. *The presentations were very informative and the information was impressive*

Gaining new knowledge in CSA	
Knowledge gained in CSA will be used in the future	
Ideas for the future CSA *optional	*1. Practical application of Citizen Science.* *2. Practical application of Citizen Science.* *3. Practical application of Citizen Science in entrepreneurship.*

Analysis

Table 2.5.10. "Citizen Science: active citizens in conducting, producing and utilising research" participants evaluation analysis

Strengths	Challenges
Most of the questionnaire respondents were aware of the existence of OS before CSA, and more than 50% of them participated in OS in some way. The participants showed their satisfaction with the lecture topics chosen by UCY and they pointed out that they got new information and that the event was very interesting for them. All respondents said that they gained new knowledge and that they will be able to use this knowledge in the future	Although the CSA participants were satisfied with the topics, they pointed out that they would like to have also an experience with practical uses of CS – that is, they declared that they themselves would like to participate in the CSA.

Conclusion

UCY, as well as the public library with which it participated in the implementation of the CSA, had no prior knowledge of CS or experience in joint organisation of events (institutional/public libraries together). However, they were familiar with the needs of the local community and knew how to attract participants, which resulted in great attendance. UCY has a big space, a large communication network, and library staff who were interested and skilled. The fact that the participants could not actively participate in the CSA but acted passively as listeners can be highlighted as a disadvantage of the CSA. Nevertheless, the participants confirmed that the topics were very interesting to them and that they were satisfied, and they noted that they would be interested in attending a follow-up event. As a result, UCY decided to organise more CSA events in the future, together with the public library.

2.6. Workshop "Citizen Science" – UNILIB

Table 2.6. About Workshop "Citizen Science"

Summary of the activity			
Date: 24 May 2022	**Duration:** 3 hours	**Participants:** all interested citizens, all library users, scientists, teaching staff, students	**Number of participants:** 28
Public library (partner): Public library "Milutin Bojić"		**Speakers/lecturers:** Aleksandar Jerkov Adam Sogronijević Aleksandra Trtovac Nataša Dakić Branko Todorović Dragan Obrenović	**Number of speakers/lecturers:** 6
Other external partners: Association of Serbian Genealogists "Poreklo"		**Location:** library	**Language:** Serbian
Collaborational tasks			
UNILIB - providing the space for the event - connection with the Association of Serbian Genealogists "Poreklo"		**Public library "Milutin Bojić"** - providing the participants (public library users)	
Data analysed			
CS report		Completed	

Survey for the organisers	Completed
Questionnaire for the participants	Completed
Other data and resources	university library website, public library website, national news website

Activity description

Context and programme

Main theme: research related to the origin of Serbian surnames and Serbian DNA

Framework: part of the programme "Citizen Science"

Organisers: UNILIB and Public library "Milutin Bojić"

Mode of engagement of the participants: observation

Aim: popularisation of OS and CS, presentation of the work of Association of Serbian Genealogists "Poreklo"

CSA details

As a part of PR2A2, UNILIB organised a workshop "Citizen science", cocreated with the public library "Milutin Bojić", on May 24 2022. Worksop was open to the public, but it attracted mostly library users, scientists, teaching staff and students.

The programme consisted of three parts. The first part was the opening speech about the CeOS_SE project and the UNILIB role in it by prof. dr. sc. Aleksandar Jerkov, Director of the UNILIB, and doc. Dr. Adam Sofronijević, Institutional Coordinator of CEOS_SE Project. The second part was led by lecturers Dr. Aleksandra Trtovac and Nataša Dakić, CeOS_SE Project Administrators, who told the public about the CeOS_SE project concept. Through these two lectures, the public learned more about the concepts of OS and CS, as well as the role of libraries in their implementation.

The third part was about the activities of the Association of Serbian Genealogists "Poreklo" in the context of the CS. Lecturers were Branko Todorović and Dragan Obrenović, members of the previously mentioned Association. They talked about the project "Genetical origin of Serbs of Old Herzegovina", where citizens were involved in DNA testing to determine their origin. The activity results were published in the study in May 2022.

CSA results

Participants gained knowledge about the subjects of OS, CS, CSA, and Association of Genetic origin of Serbs of Old Herzegovina “Poreklo” and their work in the domain of CSA.

CSA organisational aspect

Table 2.6.1. Workshop “Citizen Science” activity concept

Activity Concept (source postactivity survey for CSA organisers)			
Name of the activity	Workshop "Citizen Science“		
Activity location	UNILIB		
Activity duration	3 hours		
Participants expected Participants achieved	20 28	Participations rate: (difference between the participants expected and achieved)	100%
Field of science covered by CSA	Natural Sciences		
Targeted participants	all interested citizens, all library users, scientists, teaching staff, students		
Participants tasks in CeOS activity	observation		

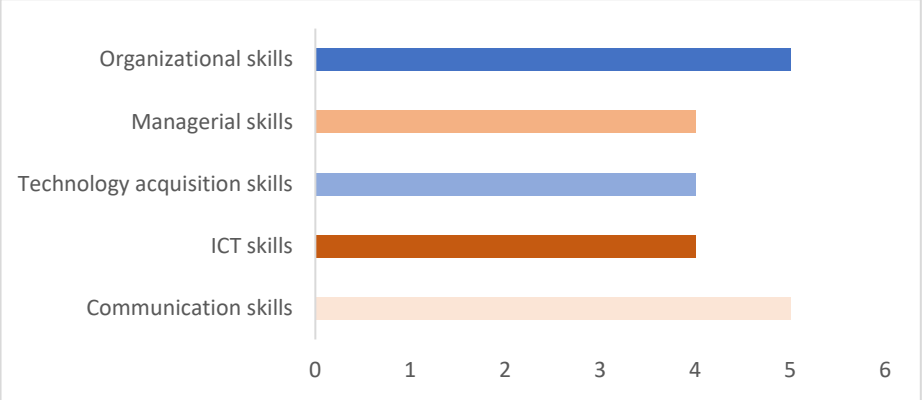
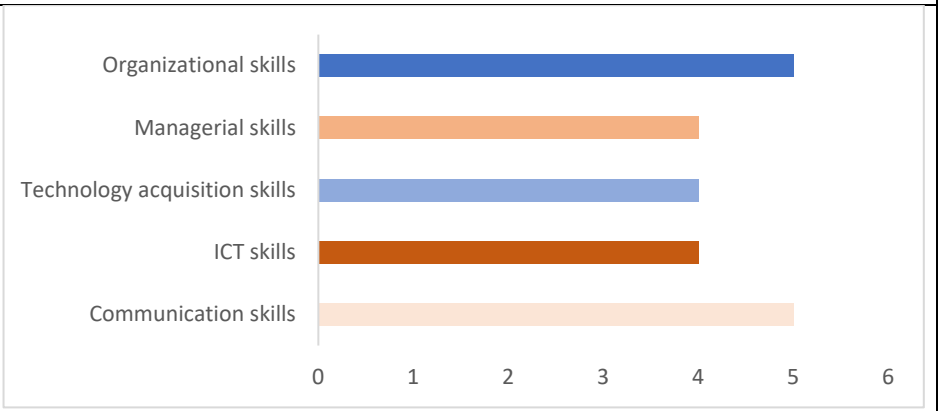
Analysis

Table 2.6.2. Workshop "Citizen Science" activity concept analysis

Strengths	Challenges
The event was well promoted and therefore attracted public interest. It was visited by a larger number of people than expected. The program included lessons from skilful lecturers and experienced CSA implementers. The event was well timed so that the participants could concentrate on the content.	Although the participants observed the results of the CSA (published in the study), they did not participate in its implementation. Considering the content of the lecture, it can be assumed that it was more adapted to scientists and teaching staff, and perhaps less to the vocabulary of the average interested citizen.

Table 2.6.3. Workshop "Citizen Science" library staff organisational skills

Library staff organisational skills	
Previous experience in conducting CSA	Yes
CSA integration in the existing process or service of the university library	No
Number of the university library staff participated in organisation of CSA	2-5

Rating of library staff skills **before** CSA	
Rating of library staff skills **after** CSA	
New knowledge about CS that university library gained through CSA	*"By preparing a workshop we learned a lot about CS, also, workshop helped us to structure gained knowledge and more easily transfer knowledge to the audience"*
Experience of conducting CSA will expand university library user service in the future	Yes
University library plans to conduct CSA in the future	Yes

Analysis

Table 2.6.4. Workshop "Citizen Science" library staff organisational skills analysis

Strengths	Challenges
UNILIB has previous experience in organising CSA, so they are very familiar with its concept. Even before the CSA, the library staff had excellent organisational and communication skills, so that helped them in the organisation. UNILIB plans to organise CSA in the future and to expand this type of activity to library user service	Library staff managerial and technology acquisition skills were not strengthened after the implementation of CSA. When organising the CSA, UNILIB relied on external partners and did not involve any other department of its own library.

Table 2.6.5. Workshop "Citizen Science" promotion

CSA promotion	
Tools use in CSA promotion	university library official website, university library Facebook page, university library Twitter account, university library Instagram account, production of visuals, leaflets and posters, an article in a local newspaper http://www.unilib.rs/vesti/predavanja/2022/poziv-na-radionicu-gradjanska-nauka/
Local and national media coverage?	Yes (national) (https://www.danas.rs/vesti/drustvo/odrzana-radionica-gradjanska-nauka-u-okviru-projekta-erasmus/)
Promotion of the CSA influenced on the public interest of the activity	Yes

CSA visuals	 *Figure 3 Workshop "Citizen Science" promotional visual*

Analysis

Table 2.6.6. Workshop "Citizen Science" promotion analysis

Strengths	Challenges
UNILIB has many communication channels through which they share the news about CSA, so the public was well informed about the event. The post event news was also published on the national portal, so even more people are familiar with the project and CS.	Placing information on a large number of communication channels took a lot of time.

Table 2.6.7. Workshop "Citizen Science" collaboration

CSA collaboration	
Previous collaboration with (any) public library	Yes
Name of the public library who was CSA partner	Public Library "Milutin Bojić"
Rating statements about the collaboration with public library in CSA*	

RATING	STRONGLY AGREE	AGREE	DISAGREE	STRONGLY DISAGREE
My library easily chose the public library to co-organise the CSA				
The aims of the collabo-ration were clear				
The collabo-ration met				

	our strategic priorities					
	It was easy to run and manage collaborative CSA					
	All sides put in equal effort					
	The public library staff demonstrated skills and knowledge in creating CSA					
	The university library staff of acquired new skills thanks to the public library staff					
	We plan to organise more CSA in the future in collabo-ration with public library					

Rating statements about **barriers** in the collaboration with public library in CSA

RATING	STRONGLY AGREE	AGREE	DISAGREE	STRONGLY DISAGREE
lack of resources (staff, time, etc.)				
lack of experience in co-organising events				
different work culture between the libraries				
administrative barriers				
Financial barriers				
insufficient technical equipment				
geographical distance of libraries				
lack of knowledge about CS				

Rating statements about **benefits** in the collaboration with public library in CSA	

RATING	STRONGLY AGREE	AGREE	DISAGREE	STRONGLY DISAGREE
It had positive outcomes for the local population				
It had positive outcomes for the scientific population				
It had positive outcomes for university library				
It helped library staff with knowledge transform				
It made libraries more visible to public				
It helped with improving existing library services				
It has created strong business ties				

Other institutions that collaborated in conducting CSA	Association of Serbian Genealogists “Poreklo
Role of the other institutions	They presented their research related to the origin of Serbian DNA, with the aim of attracting more volunteers to engage in this field of research

Analysis

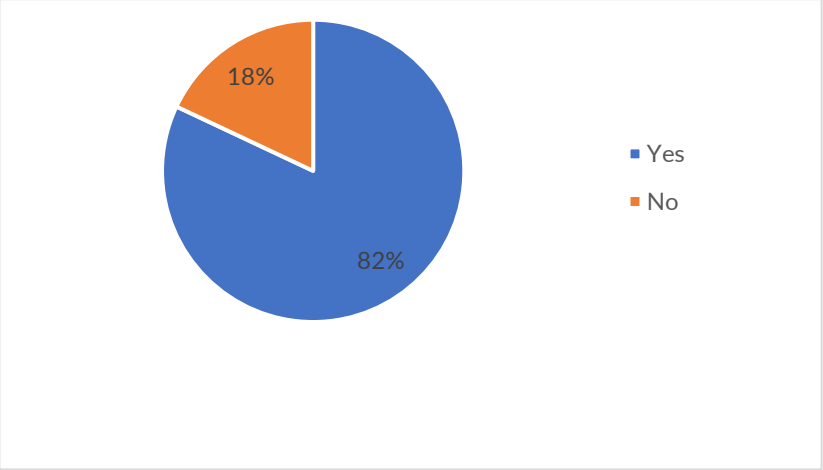
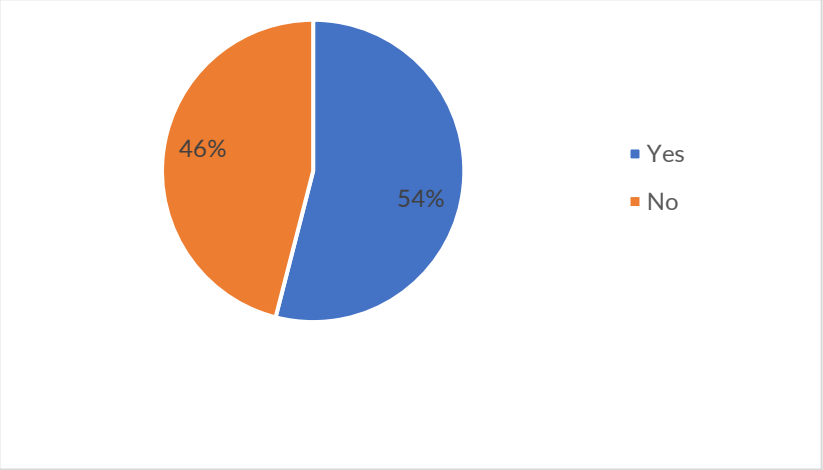
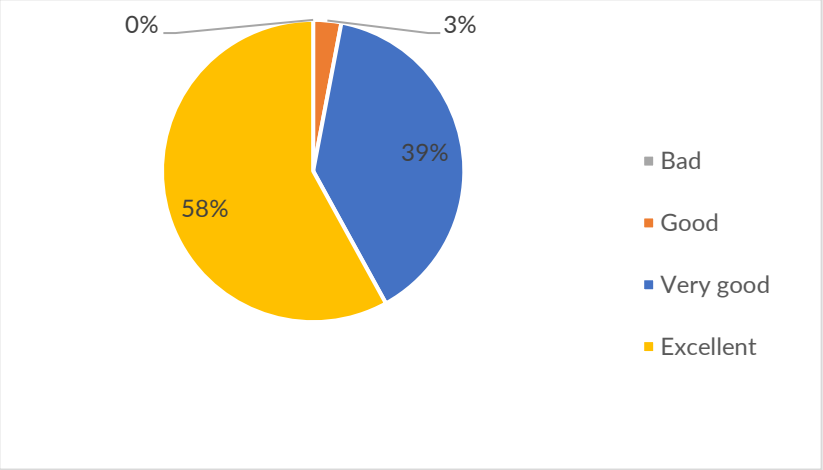
Table 2.6.8. Workshop "Citizen Science" collaboration analysis

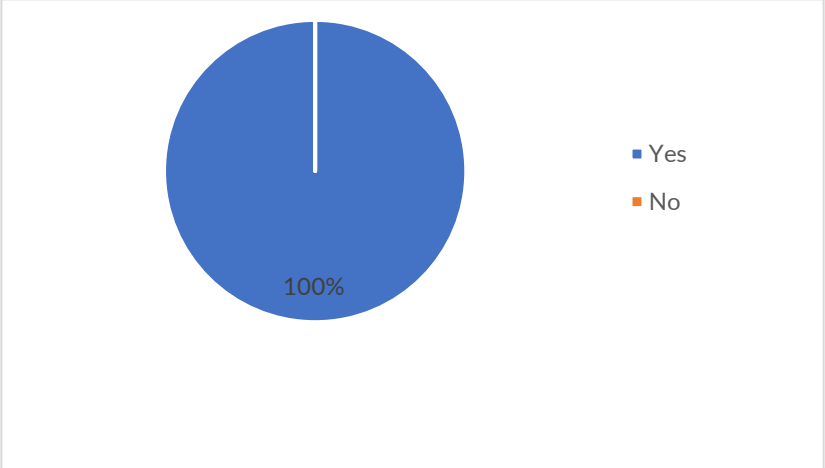
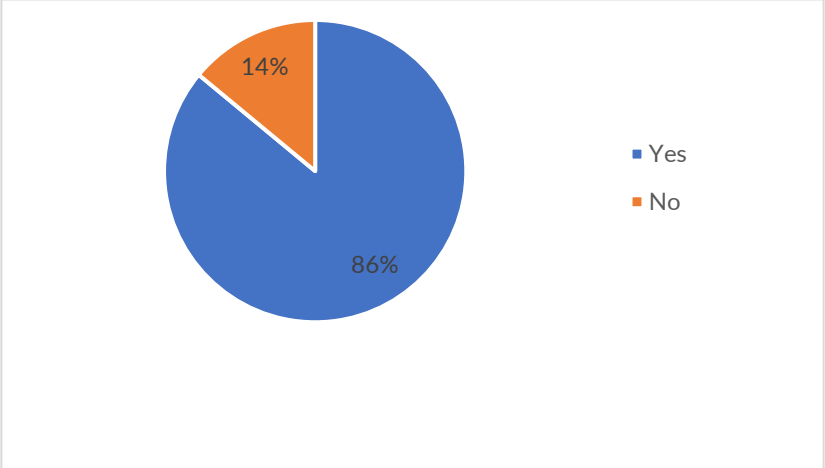
Strengths	Challenges
UNILIB has a lot of experience in co-organising events with public libraries, even in joint organisation of CSA. It was confirmed that UNILIB will continue cooperation with public libraries UNILIB agreed that the aims of collaboration and strategic priorities were clear. The public library with which they organised the workshop is located nearby, which made the organisation easier. The event had a positive outcome on the local and scientific population and made the library more visible to the public.	It was pointed out that the biggest obstacle in the joint organisation of the CSA was the lack of resources with an emphasis on staff and time

CSA participants aspect

Table 2.6.9. Workshop "Citizen Science" participants evaluation

Participants evaluation (post-event questionnaire)	
Number of participants	28

Awareness of the existence of CS and/or OS before CSA	
Participation in the CS and/or OS before CSA	
Rating of satisfaction of CSA	
Explanation of the satisfaction rating *optional	11. *Thank you very much for this inspiring lecture!* 12. *I'm very satisfied with the workshops and gained knowledge!!!* 13. *Excellent organisation, Bravo!* 14. *Lecturers were great, I have learned a lot!*

	15. *Even though I was very sceptical about the topic of Serbs DNA, I was very pleased and felt encouraged to participate in further research!* 16. *I envy you on this interesting project!!!*
Gaining new knowledge in CSA	
Knowledge gained in CSA will be used in the future	
Ideas for the future CSA *optional	*1. Please organise similar event in other university centres* *2. More activities like this would be very useful* *3. Looking forwards to cooperation with University of Ioannina* *4. I would like to be a volunteer of "Poreklo"*

Analysis

Table 2.6.10. Workshop "Citizen Science" participants evaluation analysis

Strengths	Challenges
More than 80% of CSA participants had prior knowledge of OS and/or CS The participants are generally very satisfied with the event. The participants' comments emphasise their satisfaction with the organisational part, as well as the topic of the lecture. All participants declared that they learned something new.	

Conclusion

UNILIB already had experience with organising four CSA in the past, so the organisation of the Workshop "Citizen science" was a logical sequence of this library's operations. In addition, UNILIB organised previous CSA activities in cooperation with public libraries, so it had a good background in the co-organisation segment as well. The emphasis of their "Citizen Science" workshop was on teaching the participants and bringing them closer to the topic of CS and OS, as well as practical examples based on the research conducted by the Association of Serbian Genealogists "Origins". The activity was well promoted, all the library's communication channels were used, and the national level portal was also included. UNILIB staff is characterised by excellent organisational and communication skills, which was reflected in the selection of a suitable CS topic as well as in the good course of the workshop. The great organisational help of the "Milutin Bojić" public library, which is located near UNILIB, was also emphasised. In organising future similar activities, UNILIB should pay attention to greater involvement of citizens in the implementation of the CSA itself, and the staff should work on managerial and technology acquisition skills and try to replace the lack of resources through other channels, perhaps even within their own institution, asking for help from other library departments. Good attendance as well as the satisfaction of the participants, along with the fact of previous experiences in the organisation of CSA, indicate that UNILIB is on the right track to become a role model for other SE libraries in creating CSA.

2.7. Creating a thematic collection "Bees, life, people" – NSK

Table 2.7. About Creating a thematic collection "Bees, life, people"

Summary of the activity			
Date: 2-8 May 2022	**Duration:** 7 days	**Participants:** Highschool students	**Number of participants:** 25
Public library (partner): Public library Ivanić-Grad		**Speakers/lecturers:** Dorja Mučnjak Ingeborg Rudomino Dolores Mumelaš	**Number of speakers/lecturers:** 3
Other external partners: High School "Ivan Švear" Ivanić Grad		**Location:** library, online	**Language:** Croatian
Collaborational tasks			
NSK - providing the space for the on-site event - production of Google Forms for CSA - connection with the Croatian Web Archive		**Public Library Ivanić-Grad** - providing the participants (public library users) - contacting local high school	
Data analysed			
CS report		Completed	
Survey for the organisers		Completed	
Questionnaire for the participants		Completed	
Other data and resources		university library website, public library website, local news website	

Activity description

Context and programme

Main theme: the role and importance of bees in the ecosystem

Framework: part of the national manifestation Festival of Science

Organisers: NSK and public library Ivanić-Grad

Mode of engagement of the participants: data search and collection via Google Forms

Aim: popularisation of OS and CS, education about the Croatian Web Archive, joint collection and creation of a thematic collection in cooperation with citizens

CSA details

NSK organised the event "Bees, life, people" in cooperation with public library Ivanić-Grad. The event was connected with the state manifestation *Science Festival*, which took place in the period from 2-8 May 2022, with the central theme of life.

The Croatian Web Archive, an NSK department, was also included in the organisation. PI Ivanić-Grad contributed to the organisation by gathering interested citizens - high school students from High School “Ivan Švear” Ivanić-Grad, who are also public library users.

The first part of the event took place on 2 May at NSK and included a lecture on the topics of OS and CS, as well as a presentation about the Croatian Web Archive. Dorja Mučnjak talked about OS and CS, Ingeborg Rudomino showed the participants what if Croatian Web Archive, and Dolores Mumelaš explained to them what is their taskThe second part was related to the workshop and it was about web content type, as well as the criteria according to which the content is selected in order to be included and published in the thematic collection of the Croatian Web Archive.

The third part took place online - citizens searched, chose, selected, evaluated and sent URLs of websites on the topic of bees to NSK via Google Forms. Each citizen was given his or her own keyword to search for so that the results would not be repeated. The data collection deadline was 8 May, which was also the last day of the Science Festival event.

The last part of the activity was related to the review of the submitted URLs by NSK librarians. The librarians supplemented the content, harvested it and published it on the Croatian Web Archive on 2 June 2022.

The activity was integrated into the context of the European Year of Youth with regard to the age of citizens and was also connected to the sustainable development goals of the *UN Agenda 2030*: Goal 4 (*Quality education*), Goal 15 (*Life on land*) and Goal 17 (*Partnerships for the goals*).

CSA results

CSA participants gained new knowledge about the topics of OS, CS and the Croatian Web Archive. Together with the librarians, they created the thematic collection "Bees, life, people" published on the Croatian Web Archive.

Thematic collection "Bees, life, people"

Citizens collected a total of 120 URLs on the topic of bees, and librarians added another 25, so the total amount of collected online content was 145. The size of the thematic collection is 239 GB, and content wise gathers entire web pages, parts of web pages, and articles and news from news portals. The collection is published on the Croatian Web Archive and is available in open access. The archived content is permanently stored and serves for the improvement and acquisition of new knowledge. The target users of the collection are researchers but also the entire interested public.

CSA organisational aspect

Table 2.7.1. Creating a thematic collection "Bees, life, people" activity concept

Activity Concept (source postactivity survey for CSA organisers)			
Name of the activity	Creating a thematic collection "Bees, life, people"		
Activity location	NSK and online		
Activity duration	7 days		
Participants expected Participants achieved	20 25	Participations rate: (difference between the participants expected and achieved)	100%
Field of science covered by CSA	Agricultural Sciences and Social Sciences		
Targeted participants	Students		

Participants tasks in CeOS activity	Data entry, site selection and/or description

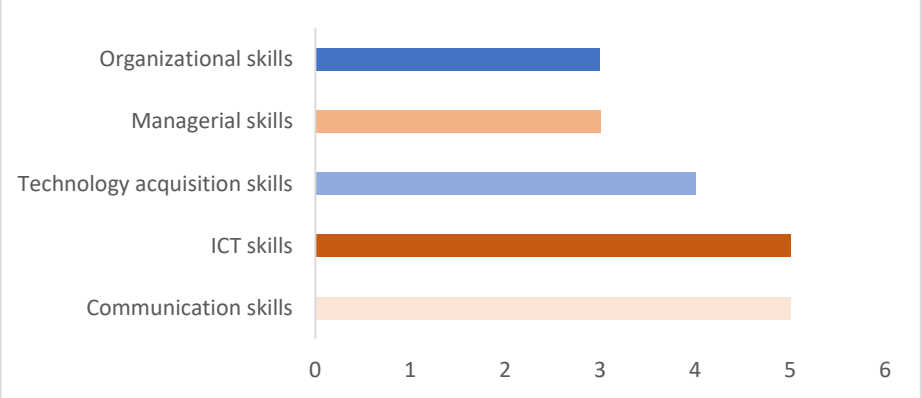
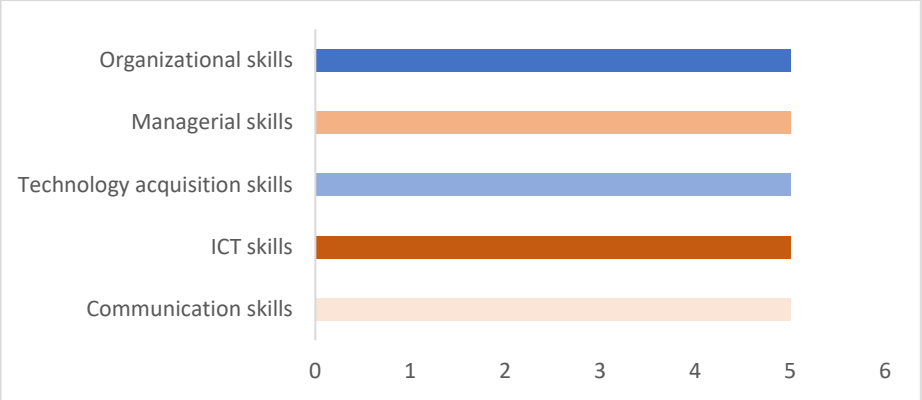
Analysis

Table 2.7.2. Creating a thematic collection "Bees, life, people" activity concept analysis

Strengths	Challenges
Use of existing library resources and inclusion of Croatian Web Archive in CSA. NSK has large halls for such events and sufficient IT equipment, as well as support from other library departments. Good communication with public library Ivanić-Grad and its organisational skills resulted in strengthening ties with the public library. Public library Ivanić-Grad is more connected with the local community, so it easily reaches citizens interested in participating in CSA.	Difficulties in controlling the frequency of arrival of the results searched by the participants given that they were doing it online and at home. A larger number of participants appeared than the expected number, but the public library announced the number in advance, so key words were provided for each participant. The process of publishing the thematic collection is lengthy, so it was published a month after the implementation of the CSA.

Table 2.7.3. Creating a thematic collection "Bees, life, people" library staff organisational skills

Library staff organisational skills	
Previous experience in conducting CSA	No
CSA integration in the existing process or service of the	Yes (Croatian Web Archive)

university library	
Number of the university library staff participated in organisation of CSA	6-10
Rating of library staff skills **before** CSA	
Rating of library staff skills **after** CSA	
New knowledge about CS that university library gained through CSA	*"We learned that, although the concept of open science is known to some extent, the concept of citizen science is not truly represented in our part of Europe. The activity of citizen science is an opportunity for libraries to connect with each other, with other institutions and with the local community, and to jointly contribute to the betterment of the community.*"
Experience of conducting CSA will expand university library user	Yes

service in the future	
University library plans to conduct CSA in the future	Yes

Analysis

Table 2.7.4. Creating a thematic collection "Bees, life, people" library staff organisational skills analysis

Strengths	Challenges
Although it had no previous experience in conducting CSA, NSK managed to organise the activity using existing resources (Croatian Web Archive) and involving several library staff. NSK staff who participated in the CSA even before the activity had outstanding communication and ICT skills, and their other skills improved after organising the CS. NSK staff learned that CSA provides networking opportunities with other libraries as well as an opportunity to connect with the local community.	NSK had no previous experience with the organisation of CSA, therefore its organisation required long-term preparation and reading of professional literature. Before conducting CSA, NSK staff lacked organisational and managerial skills, which made it even more difficult to organise CSA.

Table 2.7.5. Creating a thematic collection "Bees, life, people" promotion

CSA promotion	
Tools use in CSA promotion	university library official website, public library official website, university library Facebook page, production of visuals, leaflets and posters https://www.nsk.hr/en/bees-life-people-new-thematic-collection-available-on-croatian-web-archive-website/

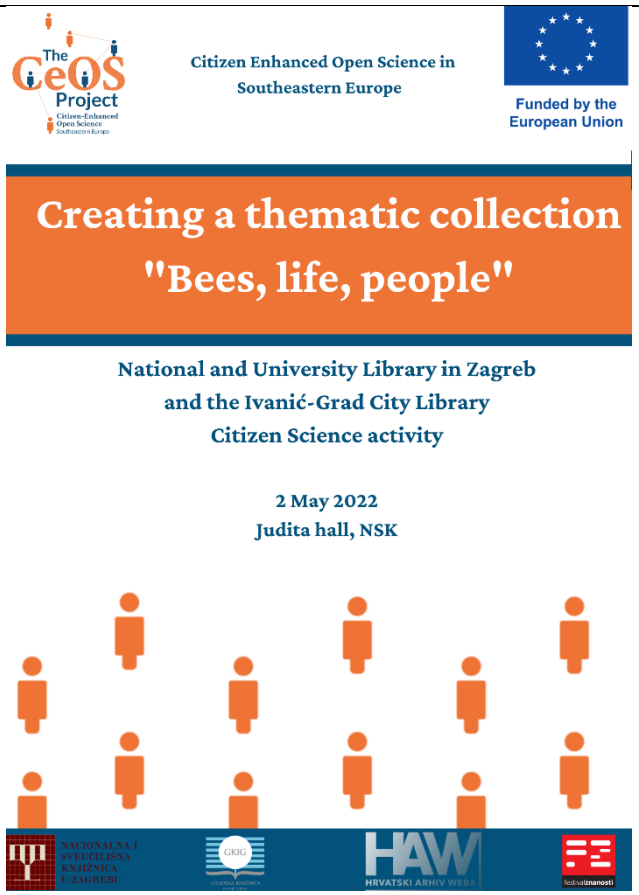
Local and national media coverage?	No
Promotion of the CSA influenced on the public interest of the activity	Yes
CSA visuals	

Figure 4 Creating a thematic collection "Bees, life, people" promotional visual

Table 2.7.6 Creating a thematic collection "Bees, life, people" promotion analysis

Strengths	Challenges
NSK has a very well-structured and developed website as well as a Facebook page that served as an excellent basis for CSA promotion.	Local and national media did not get involved in the promotion of the activity, so the news about it reached a small number of people.

Given that it owns a printing press, NSK used it to print leaflets that served as a reminder to CSA participants about the criteria for selecting the content of the Croatian Web Archive.	

Table 2.7.7. Creating a thematic collection "Bees, life, people" collaboration

CSA collaboration	
Previous collaboration with (any) public library	Yes
Name of the public library who was CSA partner	Public Library Ivanić-Grad
Rating statements about the collaboration with public library in CSA*	

RATING	STRONGLY AGREE	AGREE	DISAGREE	STRONGLY DISAGREE
My library easily chose the public library to co-organise the CSA				
The aims of the collaboration were clear				
The collaboration met our strategic priorities				
It was easy to run and manage collaborative CSA				
All sides put in equal effort				

	The public library staff demonstrated skills and knowledge in creating CSA				
	The university library staff of acquired new skills thanks to the public library staff				
	We plan to organise more CSA in the future in collabo-ration with public library				

Rating statements about barriers in the collaboration with public library in CSA

RATING	STRONGLY AGREE	AGREE	DISAGREE	STRONGLY DISAGREE
lack of resources (staff, time, etc.)				
lack of experience in co-organising events				
different work culture between the libraries				
administrative barriers				
Financial barriers				
insufficient technical equipment				
geographical distance of libraries				
lack of knowledge about CS				

<table>
<tr><td>Rating statements about benefits in the collaboration with public library in CSA</td><td>
<table>
<tr><th>RATING</th><th>STRONGLY AGREE</th><th>AGREE</th><th>DISAGREE</th><th>STRONGLY DISAGREE</th></tr>
<tr><td>It had positive outcomes for the local population</td><td></td><td></td><td></td><td></td></tr>
<tr><td>It had positive outcomes for the scientific population</td><td></td><td></td><td></td><td></td></tr>
<tr><td>It had positive outcomes for university library</td><td></td><td></td><td></td><td></td></tr>
<tr><td>It helped library staff with knowledge transform</td><td></td><td></td><td></td><td></td></tr>
<tr><td>It made libraries more visible to public</td><td></td><td></td><td></td><td></td></tr>
<tr><td>It helped with improving existing library services</td><td></td><td></td><td></td><td></td></tr>
<tr><td>It has created strong business ties</td><td></td><td></td><td></td><td></td></tr>
</table>
</td></tr>
<tr><td>Other institutions that collaborated in conducting CSA</td><td>High School "Ivan Švear“ Ivanić-Grad</td></tr>
<tr><td>Role of the other institutions</td><td>Motivating students to participate</td></tr>
</table>

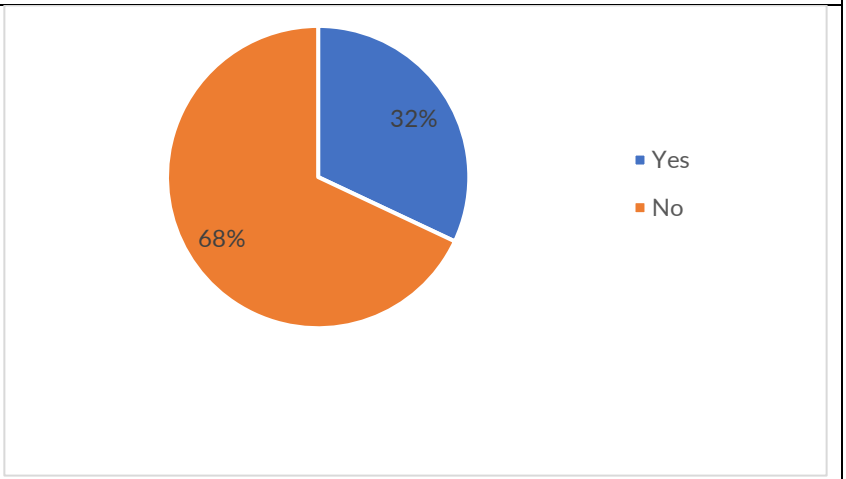
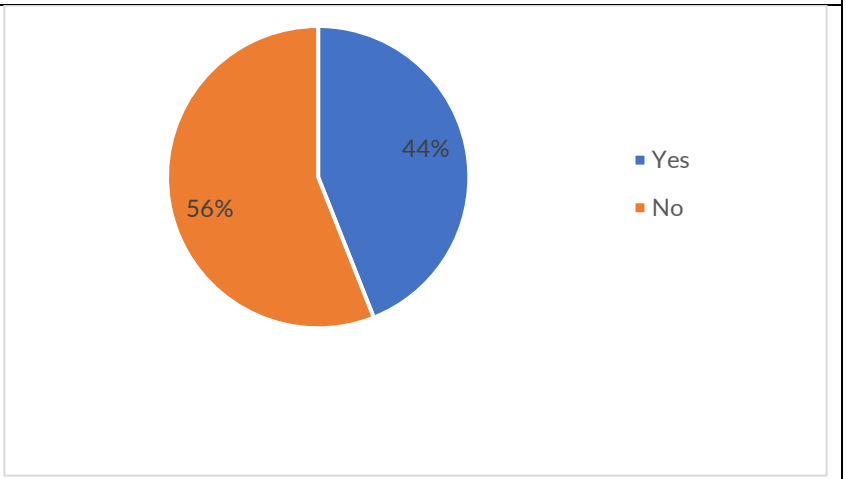
Analysis

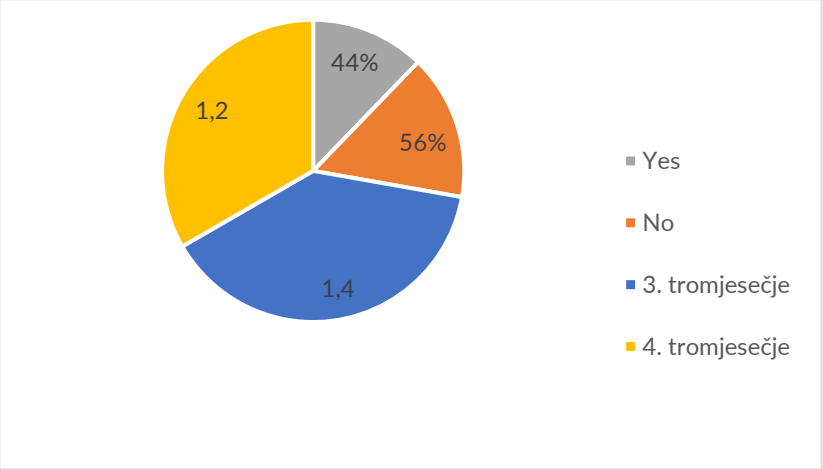
Table 2.7.8. Creating a thematic collection "Bees, life, people" collaboration analysis

Strengths	Challenges
NSK had previous experience in organising events in collaboration with public libraries, so it used that experience to organise CSA.	Given that NSK was the main organiser and host of the CSA, it took over most of the organisation.
The strategic priorities were understandable and easily implemented in the CSA.	Administrative and financial barriers created difficulties in the planning and development of CSA.
CSA had a positive impact on NSK's business and it helped library staff with knowledge transformation.	University library and public library staff did not have much knowledge about CS, so it was more difficult to conduct CSA
CSA helped with improving existing library services, i.e., contributed to the work and development of the Croatian Web Archive	
The implementation of CSA made it possible to strengthen ties not only with public library but also within the NSK departments	

CSA participants aspect

Table 2.7.9. Creating a thematic collection "Bees, life, people" participants evaluation

Participants evaluation (post-event questionnaire)	
Number of participants	25
Awareness of the existence of CS and/or OS before CSA	
Participation in the CS and/or OS before CSA	

Rating of satisfaction of CSA	
Explanation of the satisfaction rating *optional	*17. I am very content because during today's lecture I learned a lot, i.e., a lot of new things and facts that I did not know before* *18. Interesting and new* *19. Everything is well explained and interesting. The presenters did a good job* *20. I am very pleased with today's activity because I have learned a lot. I have known for a long time about the existence of civic and open science but I did not know what exactly these terms meant* *21. It was well explained and expert* *22. Interesting and instructive* *23. I learned something new, it was a little boring but it has to be*

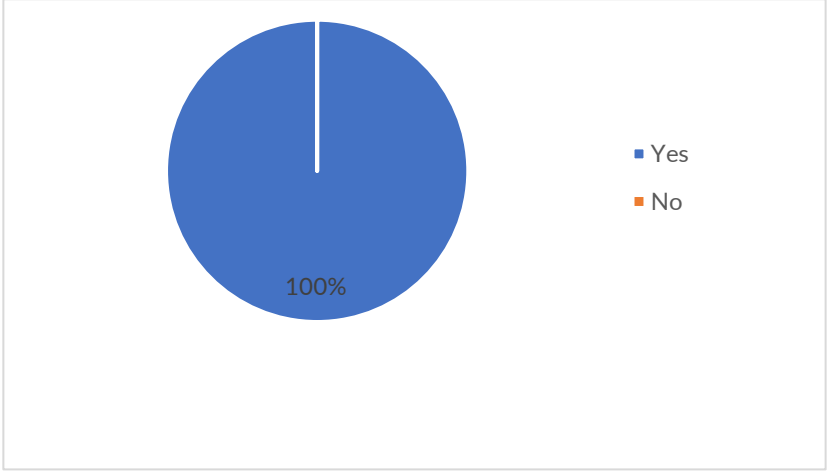
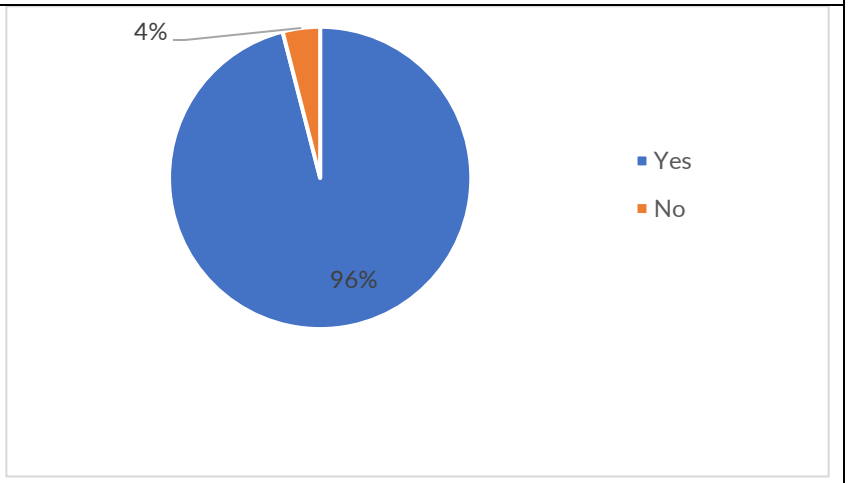
Gaining new knowledge in CSA	
Knowledge gained in CSA will be used in the future	
Ideas for the future CSA *optional	*Thematic collection about Ivanić-Grad*

Table 2.7.10. Creating a thematic collection "Bees, life, people" participants evaluation analysis

Strengths	Challenges
According to the data from the survey, NSK staff performed the educational part of the CSA well. Knowledge about OS and CS was transferred to CSA participants.	The educational part was probably too professional considering the age of the CSA participants.

Conclusion

NSK, as the central library in the Republic of Croatia, had the opportunity to jointly organise various events in cooperation with public libraries, but this is its first CSA. Although the staff involved in the organisation had not previously encountered the subject of CS, they gained new knowledge by participating in the CeOS_SE project as well as by reading professional literature. CSA managed to popularise OS and CS topics but also to introduce the community to the work of the Croatian Web Archive. NSK, as a university library, took on the design of the CSA theme, as well as most of the organisation, but the public library brought the audience to the activity. To organise a successful CSA in the future, NSK should improve and develop the promotion of activities at the local and national levels, create a good financial plan and try to rely on the knowledge of external partners, not only on its own. NSK has a good foundation in terms of the experienced staff who have many creative solutions, excellent ICT infrastructure, developed departments and the possibility of connection to partners at the national level with regard to its national role.

2.8. "Citizen Science and Copyright in Libraries" – UniBIT

Table 2.8. About "Citizen Science and Copyright in Libraries"

Summary of the activity			
Date: 19 April 2022	**Duration:** 2,5 hours	**Participants:** all interested citizens, all library users, scientists, teaching staff, students and elderly	**Number of participants:** 20
Public library (partner): National Library "Ivan Vazov" - Plovdiv		**Speakers/lecturers:** Tereza Trencheva Svetoslava Dimitrova	**Number of speakers/lecturers:** 2
Other external partners: none		**Location**: library	**Language:** Bulgarian
Collaborational tasks			
UniBIT - providing information materials for the event - providing the lecturers (UniBIT staff - CeOS_SE project team)		**National Library "Ivan Vazov" – Plovdiv** - providing the space for the on-site event - providing the participants (public library users) - providing citizens and students	
Data analysed			
CS report		Completed	
Survey for the organisers		Completed	
Questionnaire for the participants		Completed	

Other data and resources	university library website, public library website, local news website

Activity description

Context and programme

Main theme: the importance of copyright in libraries

Framework: dedication to the World Intellectual Property Day (26 April)

Organisers: UniBIT and National Library "Ivan Vazov" – Plovdiv

Mode of engagement of the participants: data analysis

Aim: popularisation of OS and CS, training about the features of the Bulgarian Copyright and Related Rights Act (BCRRA) for libraries through conducting lectures and game-based experiments with citizens and library specialists

CSA details

For the occasion of the World Intellectual Property Day and as a part of the CeOS_SE project, UniBIT and National Library "Ivan Vazov" – Plovdiv co-organised the CSA Workshop on the theme “Citizen Science and Copyright in Libraries”. The central topic was the features of BCRRA for library institutions and archives and sharing knowledge about OS and CS.

The event consisted of four parts and was led by the members of the UniBIT CeOS_SE team. The opening speech was given by Prof. Tereza Trencheva, Institutional Coordinator of CEOS_SE Project & Vice-Rector of Research and International Affairs (UniBIT). In the second part, PhD Svetoslava Dimitrova presented the CeOS_SE project concept in detail. Then, Prof. Tereza Trencheva continued the event with lecture “Copyright in Libraries: Fiction or Reality”. “The basics of copyright were discussed, such as the subject matter that can be copyrighted, the duration and exceptions to copyright, and why copyright issues are so important to libraries and their staff” (The CeOS_SE project, 2022).

After the presentation of the CeOS_SE project and the lecture, UniBIT developed an interesting CSA named “Citizen Science & Open Science vs Copyright in libraries”. The aim of this 20-minute game-based experiment with the citizens/library specialists was to establish the concentration of the audience after the two lectures on the principle of brainstorming activities about the three main presented issues - Citizen Science, Open Science and Copyright. During the experiment, the participants were given fictional roles, and throughout the experiment, they had to imagine their role and breakdown the questions they had to answer during their role. The roles included student-reader at a university library, director of a public library, social media manager, mayor of a small village, graphic designer in an advertising agency, owner of an IT company, freelance translator, teacher in elementary school, etc. The questions were related to diverse

aspects of copyright and how they think their role would answer. The aim was to prove that copyright could be beneficial for all citizens.

CSA results

CSA participants who played the previously mentioned roles learned the benefits of the copyright for each listed role. They also gained new knowledge about OS, CS learned the role of the CeOS_SE project in strengthening CSA activities and the UniBIT CeOS_SE team was invited for organisation of CSA at the University of Agriculture in Plovdiv

CSA organisational aspect

Table 2.8.1. "Citizen Science and Copyright in Libraries" activity concept

Activity Concept (source postactivity survey for CSA organisers)			
Name of the activity	"Citizen Science and Copyright in Libraries"		
Activity location	library		
Activity duration	2,5 hours		
Participants expected Participants achieved	20 20	Participations rate: (difference between the participants expected and achieved)	100%
Field of science covered by CSA	Social Sciences		
Targeted participants	all interested citizens, all library users, scientists, teaching staff, students and elderly		
Participants tasks in CeOS activity	Data analysis		

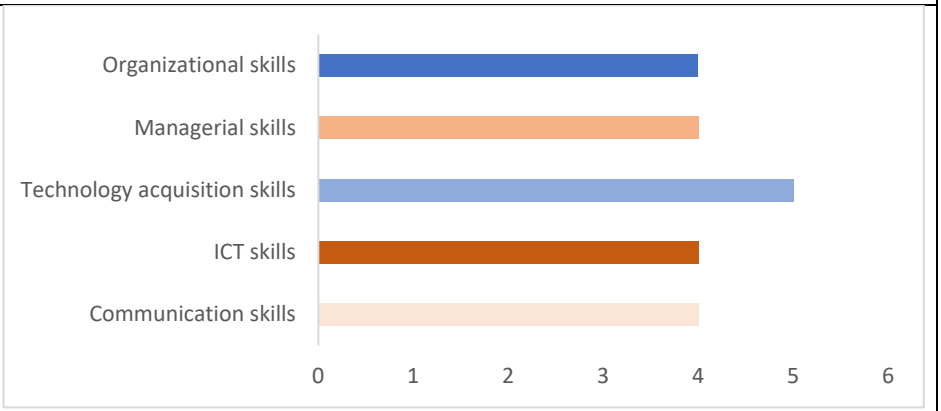
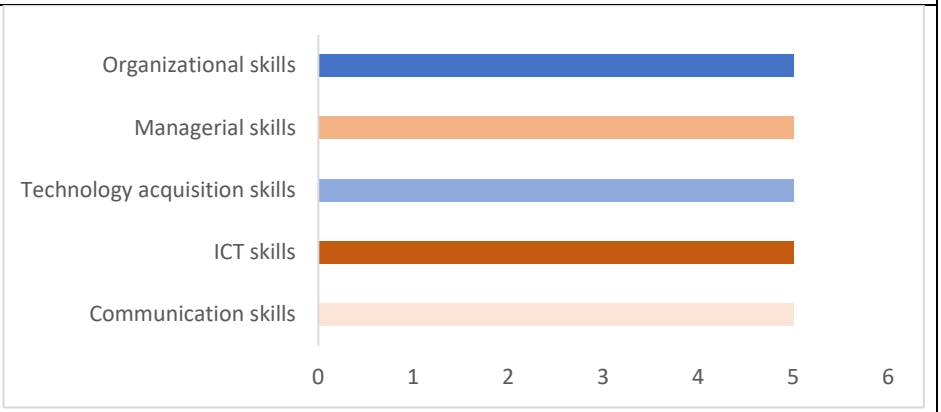
Analysis

Table 2.8.2. "Citizen Science and Copyright in Libraries" activity concept analysis

Strengths	Challenges
Presentation of OS and CS concepts to the general public and library specialists from regional library, because it's an unknown topic for them. Promotion and emphasis on the importance of the CeOS_SE project and CSA in SE Europe The chosen topic of CSA is applicable to a diverse group of citizens. CSA had added value because it was linked to World Intellectual Property Day.	Although the picked CSA topic is diverse, no external collaborators or other internal collaborators are involved except the CeOS SE team. The time limit of the CSA itself was 20 minutes, which may be too short a time for the participants to practise the essence of the issues presented. Difficult inclusion of citizens in this CSA, because there is a big gap of information about CS.

Table 2.8.3. "Citizen Science and Copyright in Libraries" library staff organisational skills

Library staff organisational skills	
Previous experience in conducting CSA	No
CSA integration in the existing process or service of the university library	Yes
Number of the university library staff participated in	6-10

organisation of CSA	
Rating of library staff skills **before** CSA	
Rating of library staff skills **after** CSA	
New knowledge about CS that university library gained through CSA	*We learned that this is a long way for us, in Bulgaria. People are not truly aware that there is a difference between Open Science and Open access. They think it is the same thing, but we are just using other fancy words to describe it. The people are not aware that some activities they performed or took part in are actually Citizen Science. We learned that there is willingness in citizens to participate in such events and to collaborate with us in the future.*
Experience of conducting CSA will expand university library user service in the future	Yes
University library plans to	Yes

conduct CSA in the future	

Analysis

Table 2.8.4. "Citizen Science and Copyright in Libraries" library staff organisational skills analysis

Strengths	Challenges
UniBIT has successfully implemented CSA in the existing process of the library. A great number of library staff participated in the CSA organisation. It was noticed that library staff organisational, managerial, ICT and communication skills increased because of CSA organisation. Because of the succession of CSA, the library staff desire to organise more such activities in the future. The University library at Plovdiv was interested in organising such an activity, too.	Library staff had no previous experience in organising CSA, so they had to bring their skills and knowledge of CS to successfully implement the activity.

Table 2.8.5. "Citizen Science and Copyright in Libraries" promotion

CSA promotion	
Tools use in CSA promotion	university library official website, university library Facebook production of visuals, leaflets and posters https://www.unibit.bg/news/news-events/citizen-science-and-copyright-in-libraries https://www.bta.bg/bg/news/bulgaria/265307-unibit-i-narodna-biblioteka-ivan-vazov-v-plovdiv-se-prevrashtat-v-hab-na-znani

Local and national media coverage?	Yes
Promotion of the CSA influenced on the public interest of the activity	Yes
CSA visuals	 *Figure 5 "Citizen Science and Copyright in Libraries" promotional visual*

Analysis

Table 2.8.6. "Citizen Science and Copyright in Libraries" promotion analysis

Strengths	Challenges
UniBIT has used many tools to promote CSA. News about CSA was also published in the local media and thus attracted the attention of a larger number of people.	Posting information about CSA on various tools as well as contacting the media and writing news probably took a lot of time for the UniBIT staff

Table 2.8.7. "Citizen Science and Copyright in Libraries" collaboration

<table>
<tr><th colspan="2">CSA collaboration</th></tr>
<tr><td>Previous collaboration with (any) public library</td><td>Yes</td></tr>
<tr><td>Name of the public library who was CSA partner</td><td>National* Library "Ivan Vazov" – Plovdiv

*in Bulgarian "national" means "public"</td></tr>
<tr><td>Rating statements about the collaboration with public libraries in CSA*</td><td>
<table>
<tr><th>RATING</th><th>STRONGLY AGREE</th><th>AGREE</th><th>DISAGREE</th><th>STRONGLY DISAGREE</th></tr>
<tr><td>My library easily chose the public library to co-organise the CSA</td><td></td><td></td><td></td><td></td></tr>
<tr><td>The aims of the collaboration were clear</td><td></td><td></td><td></td><td></td></tr>
<tr><td>The collaboration met our strategic priorities</td><td></td><td></td><td></td><td></td></tr>
<tr><td>It was easy to run and manage collaborative CSA</td><td></td><td></td><td></td><td></td></tr>
<tr><td>All sides put in equal effort</td><td></td><td></td><td></td><td></td></tr>
<tr><td>The public library staff demonstrated skills and knowledge in creating CSA</td><td></td><td></td><td></td><td></td></tr>
<tr><td>The university library staff of acquired new skills thanks</td><td></td><td></td><td></td><td></td></tr>
</table>
</td></tr>
</table>

to the public library staff					
We plan to organise more CSA in the future in collabo-ration with public library					

Rating statements about barriers in the collaboration with public library in CSA

RATING	STRONGLY AGREE	AGREE	DISAGREE	STRONGLY DISAGREE
lack of resources (staff, time, etc.)				
lack of experience in co-organising events				
different work culture between the libraries				
administrative barriers				
Financial barriers				
insufficient technical equipment				
geographical distance of libraries				
lack of knowledge about CS				

<table>
<tr><td>Rating statements about benefits in the collaboration with public library in CSA</td><td>
<table>
<tr><th>RATING</th><th>STRONGLY AGREE</th><th>AGREE</th><th>DISAGREE</th><th>STRONGLY DISAGREE</th></tr>
<tr><td>It had positive outcomes for the local population</td><td></td><td></td><td></td><td></td></tr>
<tr><td>It had positive outcomes for the scientific population</td><td></td><td></td><td></td><td></td></tr>
<tr><td>It had positive outcomes for university library</td><td></td><td></td><td></td><td></td></tr>
<tr><td>It helped library staff with knowledge transform</td><td></td><td></td><td></td><td></td></tr>
<tr><td>It made libraries more visible to public</td><td></td><td></td><td></td><td></td></tr>
<tr><td>It helped with improving existing library services</td><td></td><td></td><td></td><td></td></tr>
<tr><td>It has created strong business ties</td><td></td><td></td><td></td><td></td></tr>
</table>
</td></tr>
<tr><td>Other institutions that collaborated in conducting CSA</td><td>No</td></tr>
<tr><td>Role of the other institutions</td><td>N/A</td></tr>
</table>

Analysis

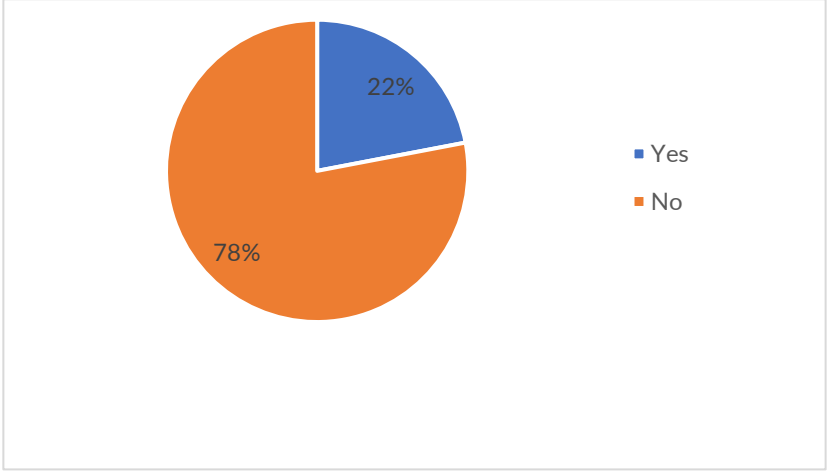
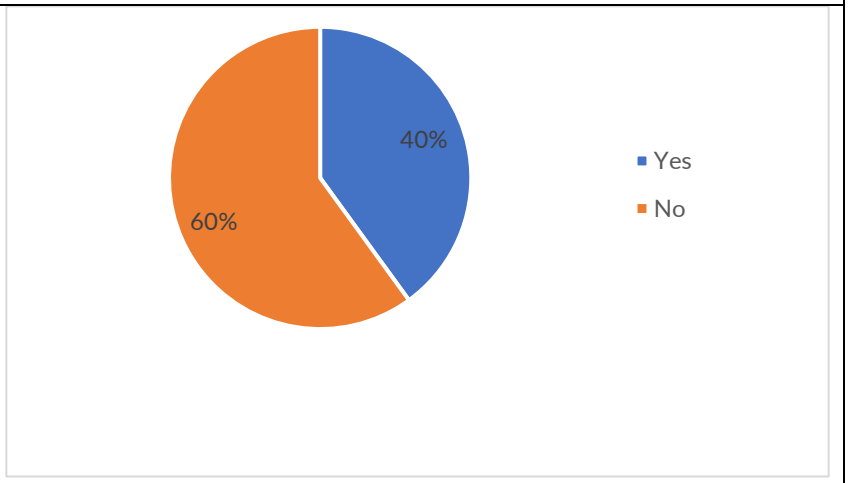
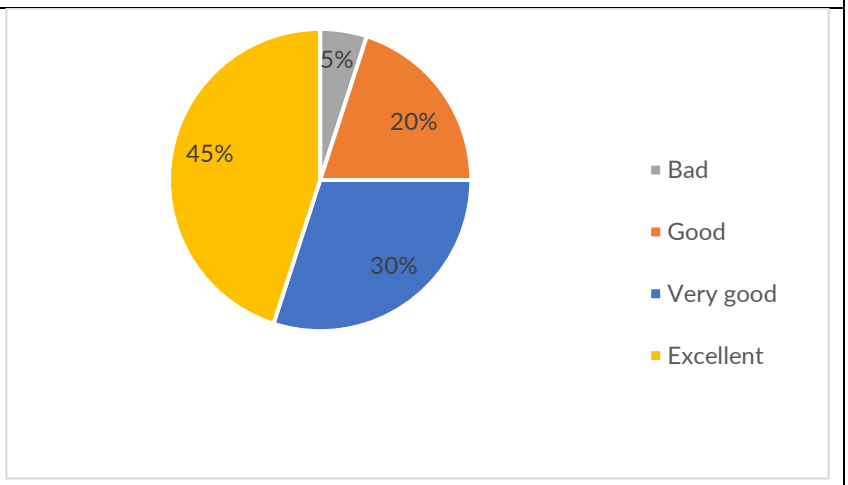
Table 2.8.8. "Citizen Science and Copyright in Libraries" collaboration analysis

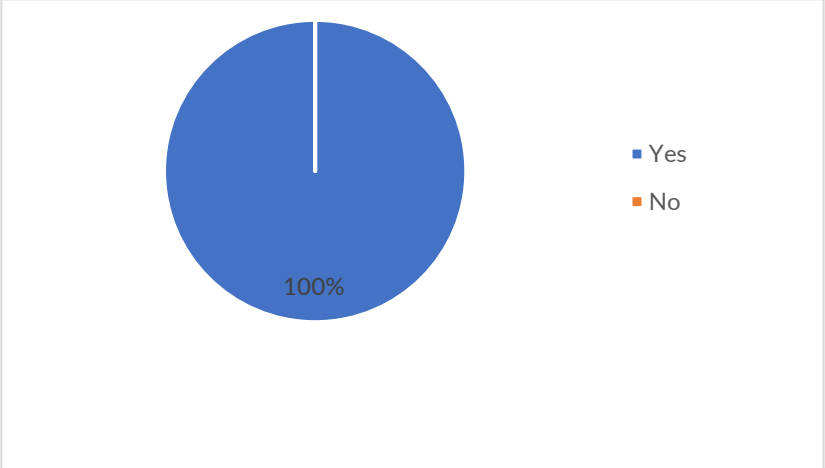
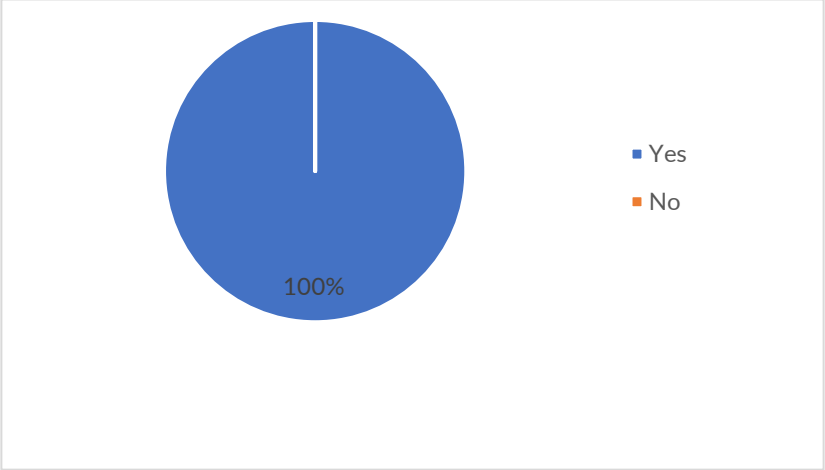
Strengths	Challenges
UniBIT had no problems choosing the public library with which to cooperate, they had clear goals that helped them organise the CSA together in a simple way. Both libraries have a similar work culture and much experience in co-organising events. The university library believes that the CSA has had a positive impact on the local and scientific community, as well as increasing the visibility of both libraries in the public.	Barriers encountered by libraries are of a financial nature, as well as insufficient technical equipment. One of the barriers is lack of knowledge about CS, so the library staff probably had to further improve themselves in that area in order to conduct the activity. UniBIT did not include any other external institution except the public library.

CSA participants aspect

Table 2.8.9. "Citizen Science and Copyright in Libraries" participants evaluation

Participants evaluation (post-event questionnaire)	
Number of participants	20

Awareness of the existence of CS and/or OS before CSA	
Participation in the CS and/or OS before CSA	
Rating of satisfaction of CSA	
Explanation of the satisfaction rating *optional	1. *It was useful. Thank you!* 2. *It was an interesting game!* 3. *I like the game-based approach. # Very well organised workshop! It was useful!*

	4. *Useful, great opportunity to exchange good practices!* 5. *I appreciated the importance of citizen science!* 6. *OK*
Gaining new knowledge in CSA	
Knowledge gained in CSA will be used in the future	
Ideas for the future CSA *optional	1. *More practical activities related with the theory* 2. *These workshops must be regular* 3. *If these activities are outside, among the citizens it will be more useful!* 4. *I think that it will be good to make more initiatives like this.* 5. *"Welcome to our university - Agricultural university – Plovdiv" team.*

Analysis

Table 2.8.10. "Citizen Science and Copyright in Libraries" participants evaluation analysis

Strengths	Challenges
Only 22% of the respondents were aware that CS and/or OS existed before CSA, which means that at UniBIT CSA they heard something more about that topic for the first time. Respondents were mostly very satisfied with CSA, and they noted that the activity was useful and interesting. It is commendable that 100% of the respondents stated that they learned something new, and 100%of the respondents claimed that they will be able to use the learned knowledge in the future.	The respondents expressed their wish that they would like more practical activities, that is, CSA in which they could actively participate; considering that in this CSA they gained some introduction to the picture of what CS is in general in addition to the short part that related to practice, UniBIT has an excellent basis to continue holding CSAs in which citizens will be more active.

Conclusion

UniBIT organised an interesting CSA on the topic of Bulgarian Copyright and Related Rights Act in libraries, which they put in the context of World Intellectual Property Day (26 April). The chosen topic is applicable to a diverse group of citizens and refers to the field of social sciences. Thanks to CSA, UniBIT library staff improved their organisational, managerial, ICT and communication skills. To promote CSA, UniBIT used many web 2.0 tools, created a promotional visual, and contacted local media. The collaboration with the public library was very successful because the public library showed their willingness to cooperate, provided their space, invited users and facilitated the organisation of the CSA. The organisation might have been even more successful if some other external partners had joined it and if the libraries had stronger financial support and were better technically equipped. Additionally, the active part of the CSA lasted 20 minutes, and the participants mentioned that they would like to participate more actively in the CSA. Given that it was their first conducted CSA, UniBIT is well on its way to organising even more successful and well-attended CSAs in the future.

Lessons learned from all CS activities conducted by project partners

All eight project partners, of which 7 are members of libraries and 1 is a member of library organisation, have implemented CSA in cooperation with the public library. Given that only two partners (SDU and UNILIB) had previous experience in organising CSA in cooperation with public libraries, it is interesting to study how they implemented previous knowledge in this CSA and how inexperienced partners coped in organising CSA. That is why in this chapter, in one place, an overview of the results of the survey with organisers is presented, which will show the possibilities for the organisation of CSA in cooperation with university and public libraries in SE Europe.

Table 3.1. The location where the CSA was held

LOCATION	LIBRARIES
ONLINE	2
UNIVERSITY LIBRARY	3
PUBLIC LIBRARY	3
OUTDOORS	0
IN ANOTHER EXTERNAL INSTITUTION	0
OTHER LOCATION	0

The question that wanted to investigate the location where the CSA was held (*Table 3.1.*) had the possibility of multiple answers. The most frequently mentioned locations are university library, public library and online, and only one library (NSK) mentioned two locations (both online and university library). It is interesting that no library is marked outdoors as a location or another external institution. Given that light pollution was observed, it can be assumed that part of the CSA held by UP was held outdoors. It can be noted that the partners most often organised activities in the library, a space they are familiar with and in which they are comfortable.

Table 3.2. The field of science covered by CSA

FIELD OF SCIENCE	LIBRARIES
NATURAL SCIENCES	3
ENGINEERING AND TECHNOLOGY	1
MEDICAL AND HEALTH SCIENCES	1
AGRICURTURAL SCIENCES	2
SOCIAL SCIENCES	4
HUMANITIES	2

In Table 3.2., it is possible to see which fields of science were used to shape CSA. Although it is evident that all fields of science were used, one library (SDU) marked all fields of science, as this was also a multiple-choice question. The two answers were chosen by NSK (Social Sciences and Agricultural Sciences). The two most used fields of science are social sciences (4 libraries) and natural sciences (3 libraries). It is commendable that most of the partners chose Social Sciences, which is an area in which Information and Communication Sciences are also found, and thus used existing knowledge. For the natural sciences, studies show that they are most often associated with CS, i.e., they are "stricter" compared to the social sciences and humanities, which are "hermeneutical" (Mahr, et al. 2018).

Table 3.3. Target group of the CSA

TARGET GROUP	LIBRARIES
ALL INTERESTED CITIZENS	3
ALL LIBRARY USERS	3
SCIENTISTS	2
TEACHING STAFF	4
STUDENTS	4
CHILDREN	1
THE ELDERLY	1
OTHER	2

The question about the target group for which the CSA was intended (Table 3.3.) also offered multiple selection choices. The largest number of partners (4) organised CSA for teaching staff and students, and the smallest (1) organised CSA for children and elderly individuals. Two libraries used the "other" option, where they indicated university and public library staff (UT) and library staff and managers (SDU). This is confirmed by the data, which show that the project partners most often directed their CSA for participants who needed CS knowledge to improve their own skills.

Participants could have several tasks when participating in CSA, so the question presented in Table 3.4 had the possibility of multiple answers. In the CSA conducted by the project partners, the participants mostly dealt with data entry (3 libraries). The "other" option was used by 3 libraries: UT, which noted that a workshop had been organised, UNILIB wrote that it connected CSA with the introduction to the concept of CS, and UCY, which mentioned the introduction and best practices of CS. These answers confirm the results of the previous question, that is, the need for partners to spread the idea of CS to professionals. In all 7 activities conducted for the purpose of CeOS_SE, participants did not have the tasks of specimen/sample collection, sample analysis, geolocation and photography.

Table 3.4. The participants' tasks in CSA

PARTICIPANTS' TASKS	LIBRARIES
OBSERVATION	2
SPECIES IDENTIFICATION	1
CLASSIFICATION OR TAGGING	2
DATA ENTRY	3
FINDING ENTITIES	1
MEASUREMENT	1
SPECIMEN/SAMPLE COLLECTION	0
SAMPLE ANALYSIS	0
SITE SELECTION AND/OR DESCRIPTION	1
GEOLOCATION	0
PHOTOGRAPHY	0
DATA ANALYSIS	1
OTHER	3

Only three project partners (SDU, NSK and UniBIT) integrated CSA into the existing library process (Table 3.5. The inclusion of CSA in existing library processes is not something that is mandatory for CS, but it contributes to the sustainability of library business because it is always good to use existing resources and potentially develop them in other directions.

Table 3.5. Integration of CSA into the existing process or service of the university library

INTEGRATION OF CSA IN THE EXISTING LIBRARY PROCESS	LIBRARIES
YES	3
NO	4

Judging by the responses of project partners shown in Table 3.6, the number of library staff participating in carrying out the CSA is between 2-5 (3 libraries) and 6-10 (3 libraries), so it can be said that the final number is between 2 and 10. Only one library (UCY) said that more than 10 people participated in the CSA organisation. Given the combination of science, citizens, and public libraries, it is logical that organising CSA requires a larger number of people in order for its implementation to be successful.

Table 3.6. Number of library staff participating in CSA organisation

LIBRARY STAFF NUMBER	LIBRARIES
1	0
2-5	3
6-10	3
MORE THEN 10	1

Table 3.7 shows the ratings of library staff skills before and after the implementation of CSA. It can be seen that the scores of skills before the conduction of CSA were between 3 (good) and 4 (very good) and that some libraries noticed the growth of skills after the organisation of CSA, which confirms that more of them rated them as 4 (very good) and 5 (excellent). The biggest shifts are visible in developing communicational, managerial and organisational skills. The data confirm that the CSA organisation can influence the additional development of library staff skills, which is one of the benefits of CS for the organising library itself. Additionally, all libraries answered that thanks to the organisation of CSA, they gained new knowledge, they plan to implement CS in their services in the future, and they want to continue working on the development and organisation of CSA in their library.

Table 3.7. Library staff skills before and after CSA

LIBRARY STAFF SKILLS	RATINGS				
BEFORE CSA	1	2	3	4	5
COMMUNICATION SKILLS	0	0	2	3	2
ICT SKILLS	0	0	2	3	2
TECHNOLOGY ACQUISITION SKILLS	0	0	2	4	1
MANAGERIAL SKILLS	0	2	2	3	0
ORGANIZATIONAL SKILLS	0	0	4	2	1
AFTER CSA	1	2	3	4	5
COMMUNICATION SKILLS	0	0	0	4	3
ICT SKILLS	0	0	2	2	3
TECHNOLOGY ACQUISITION SKILLS	0	0	2	2	3
MANAGERIAL SKILLS	0	0	3	2	2
ORGANIZATIONAL SKILLS	0	0	2	2	3

Table 3.8. The tools used for CSA promotion

CSA PROMOTION TOOLS	LIBRARIES
OFFICIAL WEBSITE OF THE LIBRARY	7
FACEBOOK PAGE OF THE LIBRARY	6
TWITTER ACCOUNT OF THE LIBRARY	2
INSTAGRAM ACCOUNT OF THE LIBRARY	2
PRODUCTION OF VISUALS, LEAFLETS AND/OR POSTERS	5
AN ARTICLE IN A LOCAL NEWSPAPER	2
RADIO SATION ANNOUNCEMENT	0
OTHER	2

To promote their CSA, the project partners used different tools (Table 3.8.). It was possible to mark multiple answers, and all libraries stated they promoted the CSA to their official website. It is commendable that 6 project partners stated that the promotion was done through the Facebook page of their library and 5 that they produced leaflets/leaflets and/or posters. No library made a statement about CSA on the radio, and two used the “other” option: UT (University's newsletter) and NSK (the official website of the public library).

Table 3.9. CSA promotion through local/national media

CSA WAS PROMOTED THROUGH LOCAL/NATIONAL MEDIA	LIBRARIES
YES	4
NO	3

Table 3.9 shows that 4 libraries promoted CSA through local/national media. It is very important to promote the activity at the local level considering that one of the goals of CS is to include the local community. Given that it is known that some of the libraries had target groups with whom they agreed to cooperate and implement CSA, they probably felt that it was not necessary to promote the activity in that way. Nevertheless, it is important to talk about the activity even after its implementation so that the public becomes aware of the existence of CS and becomes interested in future similar activities. Most of the project partners (6) also think the same (Table 3.10); they stated they think that CSA promotion influenced public interest in the activity, while one library answered "I do not know".

Table 3.10. CSA promotion influenced the public interest in the activity

CSA PROMOTION INFLUENCED PUBLIC INTEREST IN THE ACTIVITY	LIBRARIES
YES	6
NO	0
I DON'T KNOW	1

Table 3.11. CSA collaboration ratings

LIST OF STATEMENTS	Strongly agree	Agree	Disagree	Strongly disagree
My library easily chose the public library to co-organise the CSA	5	2		
The aims of the collaboration were clear	4	3		
The collaboration met our strategic priorities	6	1		
It was easy to run and manage collaborative CSA	4	2	1	
All sides put in equal effort	4	1	2	
The public library staff demonstrated skills and knowledge in creating CSA	3	3	1	
The library staff of my library acquired new skills thanks to the staff of the public library	2	2	3	
We plan to organise more CSA in the future in collaboration with public library	5	2		

The project partners had the opportunity to evaluate the list of statements related to the collaboration of CSA with the public libraries (Table 3.11). A large number of libraries, 6 of them, “strongly agreed” that collaboration met their strategic priorities, while 5 libraries “strongly agreed” that they easily chose a public library for the co-organisation of CSA. The same number of libraries plan to organise CSA with a public library in the future. As many as 3 libraries stated that they do “not agree” with the statement that the university library staff acquired new skills compared to the public library staff.

Table 3.12. The ratings of CSA collaboration barriers

LIST OF STATEMENTS	Strongly agree	Agree	Disagree	Strongly disagree
lack of resources (staff, time, etc.)	1	5	1	
lack of experience in co-organising events		2	3	2
different work culture in higher education and public libraries		4	2	1
administrative barriers	1	1	4	1
financial barriers	1	3	3	
insufficient technical equipment		1	5	1
geographical distance of libraries		2	3	2
lack of knowledge about citizen science		5	2	

When they were asked to assess the common barriers in the joint organisation of CSA with public libraries (Table 3.12), 5 project partners agreed that it was a lack of resources (staff, time, etc.), and the same number said that it was a lack of knowledge about CS. The libraries are quite unanimous in stating that they are well equipped technically (5 of them) and that there are generally no administrative barriers. Additionally, geographical distance between university and public libraries was a problem in only 2 libraries. The various evaluations confirm that the barriers in the joint organisation of CSA can be diverse, and they are probably one of the main reasons why so few university libraries have organised CSA in cooperation with public libraries in the past.

Table 3.13. The ratings of CSA collaboration benefits

LIST OF STATEMENTS	Strongly agree	Agree	Disagree	Strongly disagree
It had positive outcomes for the local population	4	2	1	
It had positive outcomes for the scientific population	3	4		
It had positive outcomes for my library	5	2		
It helped library staff with knowledge transform	5	1	1	
It made libraries more visible to public	5	2		
It helped with improving existing library services	4	2	1	
It has created strong business ties	3	2	2	

According to the distribution of grades in Table 3.13., it is visible that the libraries had mostly very positive experiences in CSA collaboration with public libraries. Three statements rated with “strongly agree” were chosen by as many as 5 libraries: it had positive outcomes for university libraries, it helped library staff with knowledge transformation and it made libraries more visible to the public. Two libraries indicated that they “disagree” on the issue of creating strong business ties. The claims mostly refer to positive experiences and the left side of the table with the ratings "strongly agree" and "agree". Such well-evaluated experiences show that libraries are aware of the benefits they received from the implementation of CSA in cooperation with the public library.

CONCLUSION

As part of PR2A1, NSK collected a collection of successful CSA practices of university and public libraries' collaboration. These examples are collected not only to highlight good practice but also to make CeOS_SE partners aware of some CSAs that they may not even know exist. As noted in the methodology and structure part of this study, three university libraries that have implemented CSA in cooperation with public libraries and eight examples of CSA were detected. These examples will be presented in detail in this unit to draw attention to the following:

1. University libraries CAN organise CSA in cooperation with public libraries, regardless of whether they are located in stronger or less developed countries in Europe.

2. Public libraries can help organisationally in several ways: by offering their own space, attracting users, promoting the CSA to the local community in which they operate, offering collections, offering staff...

3. In addition to being able to collaborate with public libraries, university libraries can include other external partners in the implementation of CSA.

4. The CSA must be designed in such a way that it is comprehensible to citizens and that they can easily participate in it.

5. It is important to transfer knowledge about the importance of CS not only to citizens but also to professionals, with an emphasis on librarians.

6. Enthusiasm is more necessary than finances to conduct a CSA.

7. The key to a successful CSA is collegiality.

The seven factors mentioned above run through all the examples of CSA mentioned in this part of the study and indicate how much CSA characterises library operations, enriches knowledge and contributes to the scientific and local community and creates strong business ties.

As a part of PR2A2, the project partners organised CSAs and reported back what they had learned. Here are main conclusions that have to be drawn:

1. When creating collaborative CSA, libraries have to think about the local context – the needs of the public, the national or regional strategies and other documents...

2. If libraries can create something in the methodological set that lasts, then it can easily reach the smaller municipalities despite the distance to the university library or project manager.

3. It is necessary that the CSA context must be spoken OUT (not down) to the public libraries.

4. For the successful implementation of citizen science projects, the cooperation of a large number of partners is essential because each partner possesses certain knowledge and skills important for the project. It brings the sense of democratisation and develops soft skills such as listening, compromising, team work, etc.

5. There are several main roles of public libraries in organising collaborative CSAs - by offering their own space, attracting users, promoting the CSA to the local community in which they operate, offering collections, offering staff...

6. Public libraries are a very important partner in the implementation of citizen science activities precisely because of their set of skills: communication with different publics, organisation of events, and contacts with the media.

7. A successful project requires a different set of skills, and to bring together project partners who will cover all the necessary skills, it is important to map the skills of all project partners so that it is immediately clear what can be expected from whom and who will do what work.

8. The goal of citizen science is similar to the roles and functions of public libraries, and citizen science activities should be included in the regular activities of public libraries; for this purpose, advocacy with the administration is extremely important.

It is now clear that in SE Europe, the concept of CS is not strongly recognised. Project partners from SE Europe claimed that the community lacked knowledge of CS and that the activities they conducted as a part of PR2A2 helped them broaden their knowledge of CS. The participants of those activities also did not have the knowledge of CS – therefore, this project truly was something important for the library community as well as for the public.

To summarise, there are three important things:

1. STRATEGY – it is clear that the CS and CSAs have to become regular parts of library work because the goal of citizen science is similar to the roles and functions of public libraries;

2. ADVOCACY – to include CSAs in regular library work and to budget those activities, it is necessary to advocate the importance of CS to all stakeholders;

3. MAPPING OF SKILLS – Since organising CSAs requires several partners, it is necessary to map the skills of every partner to better understand the role of every partner.

References

1. Andonovski, J., Dakić, N., Trtovac, A. (2020). *Pretražive digitalne rukopisne kolekcije: mogućnost za raščitavanje srpske ćirilice*. Čitalište 32, pp 35-46. Available on: https://citaliste.rs/casopis/br37/andonovski_jelena.pdf

2. Blagojević, M., Milošević, D. (2014). *Legal and technological conditions for open educational resources in Serbia.*//The Fifth International Conference on e-Learning (eLearning-2014), 22-23 September 2014, Belgrade, Serbia. Pp: 1-6. Avaliable on: https://elearning.metropolitan.ac.rs/files/pdf/2014/06-marija-blagojevic-danijela-milosevic-legal-and-technological-conditions-for-open-educational-resources-in-serbia.pdf

3. CIMBSE (2022), aBEIRAr. Available on: https://cimbse.pt/ribbse/abeirar/. (accessed on 4 November 2022)

4. Euopean Commission (2019). *Open science*. Avaliable on: https://ec.europa.eu/info/sites/default/files/research_and_innovation/knowledge_publications_tools_and_data/documents/ec_rtd_factsheet-open-science_2019.pdf (accessed 5 October 2022)

5. Jezička laboratorija (2002), *About*. Available on: http://lab.unilib.rs/about (accessed on 28 October 2022)

6. Mahr, D., Göbel, C., Irwin, A., & Vohland, K. (2018). *Watching or being watched-enhancing productive discussion between the citizen sciences, the social sciences and the humanities*. UCL Press. In: Hecker, S., Haklay, M., Bowser, A., Makuch, Z., Vogel, J. and Bonn, A. 2018. *Citizen Science: Innovation in Open Science, Society and Policy*. UCL Press, London. https://doi.org/10.14324 /111.9781787352339

7. Novi Sad - European Capital of Culture (2022). *Demokratizacija digitalizacije: bibliotekari i korisnici za očuvanje nacionalne kulturne baštine*. Available on: https://novisad2022.rs/demokratizacija-digitalizacije-centralna-radionica/ (accessed on 26 October 2022)

8. Raddichi, A., Fabó Cartas, C., Sanz, F., Camacho, P. Brief Report of the High-Level Policy Event Held on June 22nd as a satellite event of the R&I Days 2021 Citizen Science for Policy across Europe. EU – citizen science. Available on: https://eu-citizen.science/static/site/files/EU-Citizen_Science_2021_report-policy-event.pdf (accessed on 4 November 2022)

9. RTS (2018). *U Beogradu i Novom Sadu predstavlja se nova revolucionarna tehnologija digitalizacije*. Avaliable on: https://www.rts.rs/page/magazine/ci/story/2520/nauka/3361243/u-beogradu-i-novom-sadu-predstavlja-se-nova-revolucionarna-tehnologija-digitalizacije.html. (accessed on 28 October 2022)

10. The CeOS_SE project (2022). *Active Citizens and Dark Skies – Citizen Science at the University of Patras*. Avaliable on: https://ceosse-project.eu/active-citizens-and-

dark-skies-citizen-science-at-the-university-of-patras/ (accessed on 20 October 2022)

11. The CeOS_SE project (2022). *Piloting Citizen Science in Southeast Europe*. https://ceosse-project.eu/piloting-citizen-science-in-southeast-europe/ (accessed on 18 October 2022)

12. SciCom Pt. (2022) *Para escuta e age: refletir no passado para construir o future. 11-13 May, 2022*, AÇORES. Avaliable on: http://scicom.pt/wp-content/uploads/2022/05/SciCom-Livro-de-Resumos-2.pdf (accessed on 4 November 2022)

13. Senabre Hidalgo, E., Perelló, J., Becker, F., Bonhoure, I., Legris, M., and Cigarini, A. (2021). *Participation and cocreation in citizen science*. Chapter 11. In: Vohland K. et al.(Eds). 2021. *The Science of Citizen Science*. Springer. Pp: 199-218. https://doi.org/10.1007/978-3-030-58278-4_11

14. Stakić, Đ., Popović, A. (2021). *Wiki-Librarian: A Project to Train Librarians and Students to Work with Wikipedia*. Infotheca. Vol. 21., No. 1. Pp 55-72. 10.18485/infotheca.2021.21.1.3

15. Tasseron, P., Zinsmeister, H., Rambonnet, L., Hiemstra, A. F., Siepman, D., and van Emmerik, T. (2020). *Plastic hotspot mapping in urban water systems. Geosciences*, 10(9), 342.https://www.mdpi.com/812000

16. The Librarians' Section of the Serbian Association of Institutes (2016). *Viki-maraton posvećen naučnim časopisima koji se izdaju u Srbiji.* Available on: https://www.itn.sanu.ac.rs/sekcija/index.php/viki-maraton-posvecen-naucnim-casopisima-koji-se-izdaju-u-srbiji?highlight=WyJ2aWtpLW1hcmF0b24iXQ== (accessed on 12 October 2022)

17. Trtovac, A., Andonovski, J., Dakić, N. (2021) *Digitalna biblioteka Univerzitetske biblioteke "Svetozar Marković" – od skeniranih stranica do pretražive kolekcije.* Bibliotekar 1 (2021) 27-48. Available on: https://bibliotekar.bds.rs/index.php/1/article/view/bibliotekar-2021-63-1-2/pdf

18. UNILIB (2022). *Demokratizacija digitalizacije u bibliotekama*. http://www.unilib.rs/usluge/edukacija/demokratizacija-digitalizacije-u-bibliotekama-2022/ (accessed on 26 October 2022)

19. UNILIB (2019). *Program dvodnevnog seminara*: *demokratizacija digitalizacije u bibliotekama*. Avaliable on https://admin.unilib.rs/wp-content/uploads/2019/02/digitalizacija-plan-satnica.pdf (accessed on 26 October 2022)

20. Wikimedia Srbija (2016). *Jezička laboratorija*. Avaliable on: https://rs.wikimedia.org/wiki/%D0%9F%D1%80%D0%BE%D1%98%D0%B5%D0%BA%D0%B0%D1%82:%D0%88%D0%B5%D0%B7%D0%B8%D1%87%D0%BA%D0%B0_%D0%BB%D0%B0%D0%B1%D0%BE%D1%80%D0%B0%D1%82%D0%BE%D1%80%D0%B8%D1%98%D0%B0 (accessed on 26 October 2022)

21. Wikimedia Commons (2022). *Viki-maraton.* Available on: https://commons.wikimedia.org/w/index.php?search=viki+maraton&title=Special:MediaSearch&go=Go&type=page (accessed on 12 October 2022)

22. Wikipedia (2019). *Viki bibliotekar/2016.* Avaliable on: https://sr.wikipedia.org/sr-el/%D0%92%D0%B8%D0%BA%D0%B8%D0%BF%D0%B5%D0%B4%D0%B8%D1%98%D0%B0:%D0%92%D0%B8%D0%BA%D0%B8_%D0%B1%D0%B8%D0%B1%D0%BB%D0%B8%D0%BE%D1%82%D0%B5%D0%BA%D0%B0%D1%80/2016#%D0%90%D0%BA%D1%82%D0%B8%D0%B2%D0%BD%D0%BE%D1%81%D1%82%D0%B8_%D0%BF%D1%80%D0%BE%D1%98%D0%B5%D0%BA%D1%82%D0%B0 (accessed on 12 October 2022)

Annex A – NSK part of the survey questions (SDU survey)

G.Public

Does your library carry out citizen science activities in cooperation with a public library?

☐ Yes

☐ No

If libraries chose "**yes**"

Indicate the number of conducted citizen science activities in cooperation with the public library

☐1-2

☐3-4

☐more than 4

Please indicate which Citizen Science activities you have carried out in collaboration with the public library. If it exists, place an active link to the event held

Where did the Citizen Science activity take place? (it is possible to check several answers)

☐ online

☐at your own institution

☐in the public library

☐in another external institution (please specify)

☐in several locations (please specify)

☐other place (please specify)

What was the target audience for the implementation of Citizen science activities (it is possible to check several answers)

☐ students

☐ teaching staff

☐ scientists

☐ users of the public library

☐ children

☐ the elderly

☐ all interested citizens

☐ other (please specify)

Please evaluate the Citizen Science collaboration between your library and the public library

	Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree
It was easy to organise Citizen Science activities in collaboration with the public library					
The implementation of Citizen Science activities in collaboration with public library was successful					
Participants in Citizen Science activities were satisfied with the activities					
We plan to organise more Citizen Science activities together in the future					

How would you assess the original motivation for collaborating with the public library Regarding Citizen Science

	Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree
CS activities attracts new users to the Library					
CS activities stimulate the local community's interest in science					
CS activities improves and upgrades existing knowledge to acquire new skills					
CS helps us share knowledge and competences					
CS supports us in learning something new					

If libraries chose "**no**"

On a scale of 1-5, in which 1 means 'strongly agree' and 5 'completely disagree', how would you rate the organisation of citizen science activities in cooperation with your libr

	1	2	3	4	5
lack of resources (staff, time, institutional funding)					
bad previous experiences in organising joint events					
lack of experience in co-organizing events					
different work culture in higher education and public libraries					

administrative barriers					
financial barriers					
insufficient technical equipment					
lack of knowledge about citizen science					

Do you believe that it is possible to bypass these barriers with good organisation and cooperation?

☐ Yes
☐ No

Do you think your library is well-connected with your local community?

☐ Yes
☐ No

Are you considering cooperation with a public library in conducting Citizen Science activities in the future?

☐ Yes
☐ No

Annex B – Transcription of conducted interviews

Part 1. SDU

Interview date: 9 June 2022

Interviewer: Dorja Mučnjak

Interviewed person: Thomas Kaarsted

Duration: 30 minutes

I: OK, I'm uh, a recording. Recording has started OK. Thomas, uh, I saw your answers to the survey and I have we need to clarify something. So, do you have more than half an hour or half an hour is top.

A: I have 45 minutes max.

I: OK, OK do you have? Did you conduct one or more… or more activities, citizen science activities?

A: In regards to public libraries?

I: Yes.

A: I did put in more than two. The connection is freezing up a little bit, so if I fall out please repeat questions or we might backtrack a little bit.

I: OK, you checked out „Find the lake", „Nature up close and personal" and Narrative medicine". So those were three separate activities?

A: Yeah, we do have other activities.

I: OK.

A: Because we are, we have had sporadic collaboration with the public libraries, but we are also doing a public library research library citizen science workshop in September.

I: Oh, OK.

A: Where a group of my staff and myself, together with a researcher is facilitating an investigation whether public libraries in Denmark could, should, or would want to engage in citizen science.

I: OK. Are all of the libraries aware of citizen science activities because yesterday we talked with Serbian colleagues and they said they conducted activities, but they were not aware that this is citizen science. What do you think is that? It is a term citizen science known enough to librarians. In public libraries.

A: No, my answer would be no.

I: OK.

A: At. Primarily, we have had a working relationship with our projects on the municipality libraries, which is the big library in Odense city of 200,000. So they're fairly big. And the staff we have worked with there and management we have worked with, they are aware of what it is.

I: OK.

A: But I think the whole problem, issue is that libraries in Denmark can very much see, or at least some library management can see that what public libraries are put in the world to do in Denmark it's very transferable to citizen science. It has some of the same goals.

I: Yes, yes.

A: But I, but I think they are, they are worried that the staff do not see it the same way.

I: Ah, OK. OK, so maybe they are, uh, a little bit scared of, uh, the science thing in citizen science or what do you think?

A: I think it's more of a blind spot that they don't that they don't know what it is.

I: OK.

A: But also, I think it might be true in other libraries also. In Denmark, public libraries have been cut almost 20% in budgets the last few years.

I: OK.

A: So, in the public centre sector in Denmark, and it's also true. For example, at our own library. We have to do more for less money.

I: Hmm, I understand. You have to be creative.

A: Yeah exactly, we have to innovate and save money at the same time.

I: OK, I understand.

A: So, library staff might be reluctant to take up yet another new task.

I: Yes, of course.

A: So, it's probably also a leadership issue.

I: OK, I understand. OK, can you describe a little bit of those activities just in a few words so we can have a clear image of that.

A: Yeah so, what we did in narrative medicine? What we wanted to do was to engage the public in discussing whether literature could be a tool that could decrease the distance between doctors and patients. All the public.

I: OK, in a way I I. I don't quite follow so can you please Explain?

A: Medicine is an obligatory course at SDU Medicine School.

I: Uh-huh OK.

A: So, at SDU Medicine School that doctoral students have a 5 or 10 ETS course where they read, uh, literary articles done by authors, poets in order to discuss their view on illness and treatment and cures and not their own, so it's a reflective tool for doctors to become more aware of patients point of views.

I: OK, so your activity was.

A: About our activity was that we did a project in the whole island where we lived with a media partner where we wanted to have doctors to discuss their view on a certain set of literary texts, and we wanted the public through the media and the libraries to discuss the same set of texts. Then we put them together for a discussion group that was facilitated by the Public Library and we did a public hearing on television that the Public Library organised for us and the media partner. And the Public Library, they have a lot of followers and people who are coming to the library. So they promoted the project and recruited the citizens that we needed and they had a literate, they had a literature club going and reading groups already. So we tapped into their infrastructure and their knowledge in facilitating this because we, as a research library who were in charge of the project, did not have that knowledge, that skill, that infrastructure.

I: OK, so your skills were different in this project. OK, so.

A: That experience and their network were bigger than ours.

I: OK, so they promoted the project, the activity and they called the participants to join in.

A: Yeah.

I: OK. Alright, well how would you describe your, um, cooperation? Was it OK? Was it a little bit challenging?

A: I think that in all citizen science projects, it's a new negotiation. It's a new partnership every single time. Because you can't just repeat and plug and play a citizen science project. There are transferable skills, but if staff are not trained or seasoned in doing it, you are starting from scratch each time. So, when I say these things now, it's not a critique of public libraries. It could be said in every new citizen science project we try to begin. So of course, there was a discussion of what is the goal? What is the common goal that took some time? There was some discussion, which staff would be suited to do this?

I: OK.

A: Which events and which things do we take ownership of? So of course, there was a division of labour and a prioritisation of resources which is in every single citizen science project. But because we knew these people in advance and worked with them also on other things, there were almost no conflicts, there was almost no friction and there were no very few misunderstandings, it was pretty much plug and play.

I: OK.

A: So, it is. But it's never easy, you know.

I: Yeah, I know because there are two libraries to set of skills OK, I understand, uh.

A: But also, in our projects there were also other partners. We had a group of researchers who wanted to investigate whether there were actually any effects of doing this, so they were also a partner. Then we had four.

I: They evaluated the project, evaluated the outcome of citizen science activity or the outcome of this special. How should I put it out of the narrative medicine or as a citizen science overall? Oh OK, OK, so those, uh, those research researchers were from university?

A: Yeah, they were sent. They were for the literary school at ASU. But besides, I mean what I'm trying to say, it's not only a Public Library research library partnership, there were researchers., there were literary authors. There was a media partner. There was an NGO, so we were six partners in this project.

I: OK. So many collaborations were challenging a bit because you had to.

A: Yeah, yeah, yes and no because we have to start from scratch and plan. And on board everybody.

I: OK.

A: But it's just to say that the Public Library fits beautifully in that partnership.

I: I understand. So, the other two projects. Could you describe a little bit more about...?

A: Yeah, so right now we have a project going in one specific municipality at Fyn. It's called Nyborg, and right now it's only known in the world that the second stage of the Tour de France is there in three weeks. Uh, but other than that, uh... Sustainability is a big agenda in Denmark, so how can the Danish society be transferred from being a very

polluting, very pesticide driven country to be more sustainable? How can we change habits and become more ecological in, in and how can we transform the CO2 carbon footprint in municipalities in Denmark from being very negative in 2030 to be positive? So that's on the agenda in every Danish municipality and on the Danish national legislation.

I: Is it a national strategy?

A: Yeah. but it's. Every single municipality in Denmark needs to have a strategy for that. It's not something they can choose, it's obligatory by national law.

I: OK, so many of OK sorry...

A: So that transition is super difficult. In every way, I mean... Otherwise why don't we just do it, right? OK, so this *commune* has particular challenges that it's probably the least sustainable *commune* in the whole of Denmark. So, in order to investigate the barriers and problems with this transformation, a set of motivational researchers are using this municipality or *commune* as a laboratory for public opinion. barriers, problems, misconceptions, fake news, actions, resistance, all these kinds of things that are the underlying things that are. Why don't we just go green? I mean, how hard can it be? So now I'm getting to the Public Library. We as a research library SDU Citizen Science is part of the research library where I work... We are the project managers of this project. We are collaborating with the Public Library in order to reach the citizens of this municipality because again, they know their citizens. They know their users. They have a big network and they do events all the time. But we are collaborating with them and a local school on doing walks, doing a, having SDU researchers out to organise the talks and walkabouts, where are the problems? What should we discuss? The local school did a project and a display of what the pupils were doing that was an exhibition at the local library and they promoted the project in order for researchers to get data the other way. So they're a partner in this. Just like the commune is, just like the local newspaper, just like the Local Nature Association. And they are an equal partner. Just like anybody else.

I: So, I hear, uh, Public Library is very much involved in many things in communities.

A: Exactly.

I: OK, OK.

A: And they have the SDG agenda very clearly for them also.

I: OK, but what about those parts? You „Find the lake“ and „nature up close and personal“. Can you just describe them a little?

A: Bit so the last one was Nature up close and personal. Because it's really a project that needs to monitor and engage citizens, if they have to take an actual standpoint in nature, being up close and. green and sustainable and carbon neutral? How do they

react? Because, if we don't react, we will burn off the planet in forty years.

I: Yeah, of course I understand, so that's.

A: Why is it called “Nature so close and personal”?

I: Yeah, I understand. And, uh, the target audience is. And Find the lake?

A: Yeah, the target audience in uh in Nature up close personal is every citizen from age 7 up to 100 in this commune municipality. In the one narrative medicine that was primarily, it turned out to be middle-aged or elderly citizens that were in contact with the hospital system. OK, and in the last one Find the lake. There are two target groups, one which is basically every single citizen in our region or country. But Find a lake has a spin-off project. It's actually part of a much bigger project, Mm-hmm. And in that project, there is a target group for young adults between 7 and 18 years old that want to do science in their spare time or their free time. So there's a double target group in that project.

I: OK, what did they have to do in that project?

A: Several things we are collecting water samples from lakes all over the region all over Denmark, really. And we could not do that without the public libraries, but I will get into that in a little while. But also, we do, do it yourself science kits. Which are suitcases that you can borrow and the libraries also come into play there. So let's say that you and your family or you or your unit want to experiment or be part of science. Then you check in with us or you check in with your local library and then you can borrow a do-it-yourself research kit at the library. Pick it up, turn it back and report your results. With this suitcase, we call it. To an interface, an app and a website that we have created. So that's part of what the libraries do. Also, we uh, every single year for 10 weeks. We do a serial water sampling trial where you can go in and, uh, collect water bottles at every library. Learn about the projects, see what we are doing, see what the results are there of course. Also, on the website, but there are many working users at public libraries. Then you go out into a lake, take a water sample, upload the results via our app. But you need to hand in the water sample somewhere. And because the local libraries are with us in that project. The biggest test. Our biggest cement board assembling anywhere in the world. Before we did this, there were 50 samples. We have done it twice and have collected 500 samples. So, the infrastructure and that the public libraries are available promote the project, make sure that we also, and I don't want to get over to technical water samples need to be stored at a certain temperature of five degrees like a fridge. We need to make sure that they monitor the samples when they come in and make sure that ours are working. But they also do tours. They also promote it via Facebook and other channels. They do small exhibitions so when people come in they can see what it's about and the staff have a little bit of training. So, if you walk in, users say oh what is this project? What can I do? Staff would be on hand at least to give you a quick guide to what you can do here.

I: And in that project find the like, do the researchers have some place there, do they... uhm. Do they see the results and then explain them or?

A: Yeah, so what have we done it for? Three we're doing it for the third year now. And every single time our community of libraries we meet up before we start and we meet up after we have done the 10-week trial. And then we evaluate to see what we could do in order for your customers, hmm to get a better, better understanding. So, the libraries asked for more feedback on data, so we teach the librarians what data has come in and what are the results that we also did. A special data sample and analysis for every single library. So, when customers who are citizens come in, then the librarians can say yes in our municipality, at these lakes, the findings were this. Uh, we are above average or below average. We have these problems or it's very good looking, uh? Of course, you can't. I mean the test results these researchers do. They have 100 variables.

I: Yeah, of course.

A: So, we can only do what we can sort of disseminate for public information.

I: But citizens are very. They're curious about those results.

A: They are somewhat curious.

I: OK, OK.

A: And we also tried to do that on our website and we have a map where we map all the links and water samples that come in. So, if you as a citizen do a water sample. Of course, you have to hand it in somewhere, but then it goes online in the map, in the app, or the website. Like 5 seconds later.

I: Yeah, of course.

A: So, people you can see. Yes, I'm participating. Oh my leg was on the map here.

I: Yeah, I know they like to participate.

A: That yes and no, because we are actually asking the citizens to do quite a lot, it's not only there is a bird taking a picture. We need them to find a water bottle. We need them to make sure it's clean. We need them to go out to a lake and spend time doing that. And then we need to get them to hand it back. So it's much more than just taking a photo of a bird and then you're on your way.

I: Were they satisfied with this activity? What do you think?

A: Based on the comments we get on our website and our app and our Facebook community, yes, we think they're satisfied.

I: OK.

A: But we don't... To be honest, we don't monitor it scientifically or strongly enough because we simply don't have the resources.

I: Yeah, I understand OK, but the participants, the number of participants is high enough. To conduct the...

A: Yes, if we take the benchmark for what sort of participation and what sort of data do the researchers get in? Yes, we hit all the marks. And these do-it-yourself research suitcases we had a thousand citizens, kids and their families primarily help co-create them.

I: Great.

A: And that gave a number of iterations. The first example was very different from the one that actually ended up being on loan.

I: OK, and what do you think about, uh, your uh library and your skills. Were your skills somewhat augmented? Were they better after those activities?

A: I think...

I: How would you evaluate them?

A: Hmmm... I think primarily skills from my own stuff at the research library, they have been fairly trained, they have been on a number of projects. I think their skills will, we always learn something to pick something new up, hmm but we lack the competences that we have at our library for every single employee and make sure that they can live up to that so we don't put people in the wrong position at the wrong product. But I think something that could easily be worked on is a more systematic skill set for public libraries. Because they don't have it as a service that's available all the time like we do. I mean, it's a core thing for my library to run a citizen science service for researchers and the public. But that's not the way it is at public libraries, so they check into projects from time to time. And there's no continuation of skills and development. Which is what we are hoping to begin to work with at that workshop in September.

I: OK, I understand now the whole process so you would say that the cooperation between public libraries and your library is very good.

A: Yes, I would say when we do it, it's excellent. I would like that we do it a lot more. I would wish that we had public libraries as partners in every single project that we had. Right now, it's more on when there is a really good fit. And it's usually by libraries we know very well.

I: OK.

A: But we do have 20 odd libraries in the Find a Lake project, but that's because our core partner, the local library, where we are in the city we are, helped us recruit them.

I: OK.

A: So, we tapped, so we tapped into their network.

I: OK. And what would you say? Uh, uh, certainly there are some barriers between the cooperation, uh, what would we say those were? The main barriers between public libraries and research libraries or university libraries.

A: I will say that the barriers are probably not in the cooperation or partnership itself. I think there is a big barrier in knowledge in public libraries: What is citizen science? Why should we do it? Why is it good or potentially good, and why does it live up to the things we should be doing? So, advocacy is a big barrier. Then another barrier is mapping of skills at libraries. And to be honest, I think that could be a barrier in research libraries as well, because I can see from my own library that a lot of the skills our staff have are transferable skills that we use in citizen science projects, and I will bet that at many Danish public libraries the same skills are there. They are good at doing events. They're good at communicating. They are good at doing evaluation, they are too good at doing reading groups. They are good at all kinds of things. But they are not aware that it fits into citizen science.

I: I understand. So, so awareness, a bit of awareness.

A: Yeah, but awareness is a little bit too unspecific.

I: OK.

A: It's strategy and advocacy. It's mapping and locking of skills and translating of. That's why I call it transferable skills. Umm? And then there is a really interesting component. That is leadership and prioritisation. Because you can't go out to an employee at a Public Library and say we think you should work on this citizen science project. If it's not a part of their strategy, if they are not trained for it, and if they are not told that they should do it, it's not a voluntary exercise. And you need to be very on point. We are prioritising this just as we do as loaning books out, for example.

I: OK, I understand.

A: So, there's also an element of leadership in this, OK?

I: OK, thank you Thomas. That would be all from me and I will, uh. Do you have something more to say?

A: It only took half an hour.

I: Yes. I was good.

A: But I think what, as a personal note? I think there is an enormous potential not only in research libraries, but also in public libraries. And when I discuss with library management and also the head of the Danish Public Library Association, why, why, why are there public libraries? Well, it's to enhance knowledge society, it's for democratic conversation to happen. It's that we have free and clear knowledge for everybody. It's available for everybody. It's to mitigate fake news. I mean, those are some of the wisest for citizen science. It's exactly the same for public libraries.

I: OK, and just one last question, all those results are open source Open Access, everybody can see them.

A: And the data we strive through, that all the data we collect in our citizen science projects are open data available data.

I: OK, OK that's OK. Thank you, Thomas, that's all from me. And now, uh, I'll leave you to, uh, Alisa and I will stop recording now. Is it OK?

A: OK, yeah.

PART 2: UNILIB

Interview date 9 June 2022

Interviewer: Dolores Mumelaš

Interviewed parsons: Nataša Dakić and Aleksandra Trtovac

Duration: 1hour

Q: Why did you get involved in CS and why do you think it is important?

A: our University implements the concepts of OS, which is determined by law. However, the concept of CS is something new in our environment, and as a library we came upon this concept more intuitively than we had it theoretically. It was more like "we heard that something is being done somewhere" - can we try it too? As a university library, we cooperated with researchers, scientists and students, and through some projects we started to cooperate with the public, including public libraries. It turned out that these project activities fit into the concept of CS, so we can say that we intuitively stumbled on the path of CS. We must add that we also wanted to include volunteers, and the best way to reach volunteers was to include public libraries. Along the way, we showed them what we were doing and included them (public libraries), and they were indispensable to us, because we couldn't even overcome the amount of work we had. In addition to public libraries, a network of higher education libraries, museum libraries, archives, i.e. special libraries, participated in our CS activities.

Wiki Marathon

Q: What is it? When did it happen? How long did it last?

A: It is a cooperational project with Wikimedia Serbia. First, Wikimedia Serbia trained UNILIB librarians on how to create articles, and then we wanted to increase the visibility of our material. Wiki-marathons have been held every year since 2016., and they are about article writing and bibliographic reference marathons to supplement articles. Activities are carried out with public libraries and citizens. Additional training for creating articles is also available within the Center for Continuous Professional Development of Librarians Serbia, and both higher education and public librarians participate in it. Citizens participate in Wiki-marathons and they work for a period of 3 days, and the most successful participant receives a prize (Wikimedia Serbia - e.g. getting a voucher to buy a book).

Q: How do you promote Wiki-Marathons?

A: Wikimedia Serbia has a wide network and a very dedicated Facebook page; so it is mostly promoted via social networks

Q: Do you have a target group? Do you send invitations to various faculties?

A: People who have completed an accredited seminar, librarians who have already attended Wiki training usually join and an invitation to participate in the Wiki marathon is sent. There are also students, pupils and pensioners.

Q: Please describe the types of articles?

A: It is mainly about historical figures. Participants write about something that is close to them. There are no restrictions or indications of what is needed. They mostly choose to write articles about a person they are interested in. Also, writing Wiki articles is an integral part of practice for librarianship and informatics students, and they need to write a certain number of articles. They are first trained and then independently write articles that are reviewed by the librarians of the UNILIB. We have a very good cooperation with that department and Wiki marathons entered the curriculum.

Q: How does the public library participate in this?

A: The librarians of the public library participate in the training and then they further train the citizens. Public librarians also invite citizens (their users) through their channels to participate in writing articles for the Wiki marathon. We (UNILIB) do not have such a direct connection with citizens as public libraries have. Citizens can also do this from home.

Q: How do you select the best articles, given that they win awards?

A: We check the links, links to other articles and other sources, completeness of bibliographic references and the article itself.

Q: Did you, perhaps, find inspiration for this activity somewhere?

A: We don't know whose initial idea it was, but we have long-term cooperation with Wikimedia, and that was another product of long-term cooperation. Wikimedia Serbia is one of the most active Wikimedia in the world, they have a lot of experience and they saw us as good partners. We promoted OS together, and this was a continuation of the collaboration.

Q: Activity locations?

A: Online, from home, in the UNILIB library,

Q: Are the articles still available? Are they used?

A: Articles are still available and in use.

Q: What was the job of the library in terms of the organisational part?

A: Our library has trained librarians and citizens to work; and UNILIB and Wikimedia Serbia participate in the selection of the best.

Q: Why do you claim that the participants were satisfied?

A: Our accredited seminar includes a survey where they leave their opinions about the seminar, evaluate the acquired knowledge, and write about how many new things they learned, how satisfied they are with the presentation, whether they will apply the acquired knowledge etc. That seminar is recognized as very good and is re-accredited every year (accredited by the Commission for National Libraries of Serbia)

Q: Why was the organisation simple?

A: Because many people were involved in the organisation, Wikimedia, Department of Librarianship, public libraries

Q: What are your existing resources; apart from you as a staff used for Wiki-marathon?

A: Knowledge and reference literature from the library fund.

Q: What could the citizens learn from your activities?

A: Information literacy, IT literacy

Q: Did you personally learn anything new?

A: Nothing too new.

Q: What is your personal impression/your perspective?

A: I think CSA was extremely useful, because Wikipedia went from being a tool that was considered not even verified information to the point where it has reached the

proportions of a real encyclopaedia, precisely because now it also has bibliographic references that must be reliable, and we also use them more when we do normative records for authors. We believe that the development of Wikipedia will go in a direction where it will become a really serious and not a superficial bibliographic source. Of course, in our Wiki-marathons are texts (articles) that are not interesting to us at all, but that is simply a civic decision - what will be written. We also have verification, that is, a check to see if that person (historical figure) deserves to have a Wiki article; you can't write about everyone, you can't write about people who don't have any references

WORKSHOP OF DEMOCRATISATION OF DIGITIZATION IN LIBRARIES

Q: Please explain what is that?

A: We were part of the European project READ; a large European project that dealt with the reading of manuscript material. We were associated partners in that project, and a special tool was developed within the framework of the Transcribus platform; a special software solution has been developed within the platform for the tool to read someone's handwriting. As part of the project, we cleared manuscripts written in Serbian Cyrillic; colleagues worked on clarifying texts in German, English and Dutch, and later the initiative was extended to a large number of European languages. We based ourselves on the Serbian Cyrillic script, considering that it was originally the least represented of the scripts from which the translation was made.

By-product of that big READ project is the creation of new technologies that would enable fast, simple and efficient scanning for very little money invested. For this purpose, an application was developed on a mobile phone that, with the help of a small device called a tent, places publications that need to be scanned, and on top of that tent (Scan Tent) there is an opening where a mobile phone camera can be placed; the application is DocScan. This whole application and scanning represent the democratisation of digitization for scanning without practically investing money and enabling the broad masses, i.e. users of the service, especially users of public libraries, to come and scan without some powerful complicated scanners.

So, a Scan Tent was placed in the library to help users so that they can quickly, easily and simply scan the material on their own. Then we, as a library, held workshops in which we promoted this service and the opportunities it provides, in cooperation with public libraries. There were several workshops; we worked with the City Library in Novi Sad, and we held at least 10 workshops for their branches. We accredited these workshops as seminars for the professional training of librarians. We also present this to a large number of public libraries. And then, through them, we reached a large number of volunteers, (that is, their users) who helped us clear the material. And we were helped by students of history, students of the Faculty of Philology.

In order to train the tool, it is necessary to type 25 pages of basic text from one manuscript, in order for the tool to learn to recognize that manuscript. The participants of the workshop sorted it out, and we controlled the sorted documents, that is, their

typed text. Activities overlap; Digitization and Transcribiton. One project combined those two CSA.

This first part is more related to the workshops with the public library of Novi Sad and the involvement of their users; they also had their own project related to the Capital of Culture, so they had the opportunity to improve something like a library, and since the overall process is a kind of democratisation of society, then digitization also fits here, workshops are not only organised in public libraries, but also in the smallest places in Republic of Serbia- That application had built-in OCR and everything that is scanned is sent to an email and the cleared text is printed. We educated over 200 librarians in such workshops and they also contacted us for additional lessons.

Q: Where is the Scan Tent located?

A: In our library.

Q: Have you noticed that users use Scan Tent more often after these workshops?

A: We haven't really noticed any significant increase in usage. We expected that after such a campaign and attendance at the workshop, they would really be used more.

Q: When were the workshops held?

A. In 2017, 2018 and 2019, when we stopped because of the Corona. We tried to hold online workshops as well, but for this kind of workshop it is simply impossible. We have to approach everyone and individually explain how to use the scan tent and how to set everything on the phone.

Q: In what way did the public library participate in this?

A; By giving space and attracting an audience.

TRANSCRIBATHON

Q: Please describe what it is?

A: It is a product of the READ project, in which we got involved in 2016, and we have been active since 2017 in order to clear up texts written in the Serbian script. We had workshops for librarians and citizens to get them involved in transcription and get tool (Transcribus) to learn to recognize language and letters. In order for the whole thing to be feasible, it is necessary for one volunteer to type 20-25 pages of manuscript text and then the librarian passes that text through a tool (Transcribus) that understands

and clears the text. It creates the so-called HTR model (text recognition model). After that, it is considered that the tool has learned to recognize someone's handwriting and then we can automatically let the recognition of the entire corpus of someone's handwriting, which is not usable today because it has a large number of errors, because it is fed with text.

Every time the tool creates a new model for a new type of handwriting, it has a language in the background and in that way, it recognizes the language itself better. With this activity, we tried to make the Serbian language more widely used - the more people participate, the more text is entered, the better the HTR model will be and the better it will recognize the Cyrillic alphabet and the Serbian language in the future.

Q: Regarding that tool, are you admins? How does it work?

A: The tool is freely available. Every citizen can freely access it and download the software to their computer. It can also be used as a web variant so it can be used directly on the Internet and you don't need to download it to your computer. Every citizen can be trained, there are tutorials on the Internet - how things work; to train and work and produce a model for his needs. We have a model for the Serbian Cyrillic alphabet and we are trying to make it as good and high-quality as possible. That's why we try to incorporate every individual manuscript that exists and create a single umbrella model reading the Serbian Cyrillic alphabet. We are the administrators for that umbrella model, as well as for every model created as a result of our institution's project from our collections. We also have cooperation outside our country, with libraries in Montenegro, which also have collections.

Q: Are you still promoting the tool?

A: We presented this tool at a number of regional conferences (BiH, Montenegro and North Macedonia).

Q: So, you are not only using manuscripts from your library but also manuscripts from other libraries?

A: Yes

Q: Are manuscripts from public libraries also used?

A: Yes

Q: It means that public libraries participate in the sense of librarians, they invite their users, and they also use their manuscript materials?

A: Yes, and we also cooperated with museums and archives.

Q: It sounds like a lot of time has been invested in all of this, was it hard to organise it?

A: Yes, there were a lot of activities, a lot of seminars, a lot of personal contacts, a lot of consultations, everything is a lot, and in order to get to something that is still not perfect - we took one swing and we worked on that swing. We are currently focused on some other concepts and we have new colleagues who are getting involved, so it's interesting for them too.

Also, as far as cooperation with the public library is concerned - sometimes it happens that the library has part of one person's fund, and we have another part, and with Transcribus we combine that person's funds in one place. We can say that recently there has been very good cooperation with public libraries.

Q: Did you get any feedback from the participants?

A: Yes, they said it was an extremely positive experience for them. Very often we also receive some mail where they ask us something, say that it was nice for them, or remind me how something is introduced somewhere. (example of Isidore Sekulić's handwriting). Manuscripts are very important for further research and what's interesting is that you can directly make a critical edition, export directly a cleared manuscript in the format you need; no more trouble, for example, when preparing new editions for further procedures and formatting; it is interesting for reuse.

LANGUAGE LABORATORY

Q: Can you tell me when the activity took place?

A: We started with it in 2016 and 2017, and it's still as relevant as Transcribathon.

Q: How and why was it started?

A: It was initiated by a colleague who came from Wikimedia Serbia; he got a job in UNILIB, he is a programmer and he had this awareness of something socially broader, that is, of socially open knowledge. At that moment, we were also establishing a searchable digital library.

The Group for Language Technology at the University of Belgrade has all the dictionaries of the Serbian language, all the morphological forms, everything as it should be, however in formats that are not very suitable for a digital library, nor were they, as a group from the Faculty of Mathematics, in the mood to just leave it to their decades-

old Work. We thought that we needed the digital library to be searchable, and then our colleague Nikola said that we could do something like this, and that's how we started the Language Laboratory.

Participants get a random noun and the/she voluntarily enter its forms by case, meaning declension, and that's what you did for the CSA Language Laboratory. Then it's incorporated into a digital library and it's searchable by any case, any term you put in. You can change one or a hundred words, so as many as you want. And when we popularised this campaign, we said "it can take you 5 minutes, or 50 minutes, depending on how much time you have."

We always have on the page who are the most active users, who entered how many word forms. Retired people actually work the most, they lead. The project was also carried out with some high schools, because the professors of Serbian language and literature heard that it was a good thing and then motivated their students to participate in it. You always rely on people who want to listen to you and who are open-minded enough to understand that this is a socially useful thing.

The Language Laboratory is growing and we connected it with the terms from the Wiki articles. The program offers words from Wiki articles and to begin with they are only nouns. We are still only on nouns. Each user needs to change that noun according to the cases. If the word library or library is entered, the user gets everything related to the library, regardless of the case in which it is in the text.

The analysis of the questions asked in the searches proved that the nouns are the most often terms for search or a syntagma consisting of two nouns. That is also one of the reasons why we decided to use nouns for the Digital library and thus the CSA Language Laboratory.

We have the idea to extend it to other morphological forms, verb forms, but there are so many nouns that we can work on them for several years. If you come across a noun that you are not sure how to decline correctly, you can skip it, so that is also a possibility and it is a convenience for the user.

Q: Is there any kind of control? They enter the noun, but do they enter it correctly?

A: There is no control. Somewhere in the header it says "People's dictionary", which means it is not "Professionals dictionary", that's why we fenced ourselves off because there is no rector's team that could monitor and control all of this. Even if the shapes are not regular, someone will look for them (search) even under that irregular shape. It is important that it is searchable.

Q: Are this in CSA one or several public libraries included?

A: A large number of libraries are involved

Q: And how did you manage to collaborate with them?

A: We promoted the Language Laboratory everywhere. The growing number of users, that is, the number of citizens who respond, shows how successful the promotion was. Whatever and wherever we hold any lecture related to our library, we always mention those additional services and projects as well as activities in order to inform as many colleagues and users as possible.

Q: So, you used only your (UNILIB) resources?

A: Yes.

Q: Regarding the location of the activity - it is an online activity, but I assume that you also taught citizens how to use the tool?

A: Yes, we taught pupils and students and everyone was teaching someone from their environment. We went to schools, but they also came to our library.

LESSONS LEARNED

Q: What is your opinion about the activities carried out in cooperation with public libraries?

A: Perhaps we were lucky that libraries we chose were open to cooperation. I can't say with certainty that every library we could contact would be so eager to cooperate. We cooperate more with those libraries that contacted US because they heard that we were doing something and were interested in cooperation. That's why the cooperation was easy because the feedback from the other side (public libraries) was also good.

Another thing, we have a lot of conferences, meetings, where we meet fellow librarians of public libraries, so there are also personal acquaintances and their interest in hearing something from us, and we also hear something from them, and then we connect.

Q: In the survey, you noted that you believe that libraries attract new users through CS. Can you clarify that?

A: Users still think that libraries are just places where you walk in and take a book off the shelf. When the user discovers that the library is not only that, but that he can be an active user, that is, participate in an event organised by the library.

The searchability of the digital collection is close to people - everyone is on some devices. And then when they see that it exists on some cloud, on the Internet and that it is convenient for them from home or via smartphone, then they become interested.

Perhaps their awareness of some scientific research is not in the foreground, but only because it is interesting. They want to participate in something interesting. They are in close contact with digital media, which they like to explore.

Q: After the CSA, have you perhaps noticed a greater interest of citizens in the library, that is, in borrowing books from a special field of science, etc.?

A: I cannot confirm that. Those who use the library use it beyond everything, and those who accidentally stumble upon it are usually only interested in those aspects in which they get involved

Q: Do you think that you were able to transfer your own knowledge and skills to colleagues from the public library?

A: Yes

Q: Did you maybe manage to learn something from them?

A: Yes, how they communicate with their users and how they attract the audience.

Q: What about the finances of CSA?

A: We have no finances. No one here works on the CSA on the fact that they will profit from all these events. On the other hand, we don't have any big expenses to organise except travel expenses. Serbia is not a very big country, we have an incoherent system, librarians know each other - a lot is based on personal acquaintances. I know a librarian there, this one knows the director here, this one knows the deputy director there, when a project is being made - we think about with who we can easily organise CSA, who is, for example, more interested in digitization. who have manuscript materials, who want to learn... Someone knows someone who knows someone. Here in Serbia, things mostly work on the basis of personal acquaintance, and there is no money.

No one was stimulated to work because they got some money from the project; there are simply travel expenses, accommodation for that day, but you socialise nicely with your colleagues and then you meet some new colleagues, then someone else calls you, that someone overhears – „I heard from a colleague that you were there and there that was very interesting, could you do it for my district as well?“. The money from the projects did not imply the organisation of CSA.

Q: What about the team work?

A: The people who work in our CSA get along well. Collegiality is crucial. Those of us who work in the university library function strangely as one family, we love our institution very much, and these things happen on the basis of enthusiasm, much more than on the basis of some material support, for someone it may have been important in order to advance to a professional position, so that means there can be some side interests.

Q: How do you upgrade your knowledge about CS?

A: The education was in the form of searching the Internet, data on the Internet, seeing what kind of projects there are. We didn't even understand that what we were doing was citizen science. We exchange experiences, share articles with each other. Knowledge transfer and self-education via the Internet. Intuition.

Q: Why is it good to organise CS in cooperation with the public library?

We received participants from those activities. Our users are very limited, we don't have that much contact with citizens. Through public libraries, we come into contact with the local community. The public library knows its users well, it has different types of audience.

PART 3 – ULBI

Interview date: 10. June 2022.

Interviewed person: Paolo Pessoa

Interviewer: Alisa Martek

Interview duration: 30 minutes

Q: How did your library decide to organise a general citizen science activity?

A: No, the project is not directly ours. They have been the others. We are a University of the dune management of Portugal, but an internal surrender to do remains about 100 kilometres inside Portugal. So, there is a process called dance for the interior, it is the region where the University is, which is a mountain region and the Portuguese government has implemented some projects in the region. There is a region here where extradition is managed by a new administration that is called CIMBS. CIMBS conducts several cultural projects in universities. Library network of public libraries and two university libraries.

Q: And they belong to the same library network?

A: Yes, the network is called CIMBSE and it has been collaborating for only 3 years. The achievements of the library belong to the network.

Q: Do polytechnics also belong to the network?

A: Polytechnics are also part of the network.

Q: What is your responsibility?

A: I work at the University library and I am responsible for open science. I am repository manager

So, I have created the repository that is intended to be all the scientific production that is done at the university, but for me as an open science person, a few years ago I have felt something other than the university but of all the management bodies that also produce science.

And, in the player I have created two more collections through protocols. Platform you tell Berta to fix the glass, Rodrigo that is another city and the other we are disco park the other with the world geopark.

But from the RIBS with the network of libraries, plus the two, the two partners of the repository

One thing that the territory is in the mountains is the same as we are going to do with it. So, we create a projector that is called “abeirar” and to elaborate you have to have two things, science and literature.

We, the universities, are promoting the science part and the public libraries will add the literature part.

The members of the network are 15 libraries, two of the universities and Polytechnic.

Each municipality has to propose someone from the literature, a local author from the city in the municipality, and we from the university library had to be connected with the researchers of the varieties we have. There is a common thing, all the territory that is mountain.

We divide the project into steps for all participants.

First step – water – there are 3 valences of water

Second step – sky – night sky

Third step – rock, stone

All the municipalities have proposed someone from the literature who has written about water, who knew something about water.

Then there were those of the oral heritage about the sky and someone who had written about the sky and on the stone just as we did. It depends on the sky, we have invited them.

We invited a philosopher to interpret heaven from the point of view of philosophy, and also something from physics and the participants loved it because the program was not a formal form, in the program they could talk, tell about, and it was spectacular.

The same water: we invite researchers who do research on groundwater, all thermal water, mountain water, glaciers. Then another person has written about the water and another that taught all the participants to know that the water will be good and it has been very good.

Q: OK, who were the participants? Library users, citizens?

A: Everyone, from the library, from the city, from the university – everyone

Q: Who invited participants?

A: We from the university library, the science part.

Q: In the library network?

A: In all parts of the network, it was distributed. Then I will send you the data by email. It has been, let me see, the water five consolations, the sky another five, and the stone another five. The water has been here in my city, the sky and a stone had been in all its territory. Every weekend has been a day.

Q: And, is there like a product of that activity? Something like writing or something that scientists in the future can use?

A: Yes, we are in the mood to present the project at several conferences and we don't publish anything, but the conference will be held this month (June 30) and I can send it to you later if you want.

Q: Where in Portugal?

A: Yes, here, at the university. It is the national congress of university libraries. All the university libraries come here and we are going to present our project.

Q: Is the congress only of Portugal? Or is it international too?

A: Only in Portugal.

Q: So, it is a national congress.

A: One thing that is curious, the presentation of the official project for journals, TV has been made on top of the mountain, in a beautiful place and all the politicians, the directors of the libraries, the vice-chancellor of the university, and the president of the network.

Q: And is this the first citizen science activity in your library?

A: Yes, it is the first. This project is called ABEIRAR, because the region is called Beira and the verb “abeirar” means in Portuguese to bring closer a play on verbs – the region is called Beira and to bring people closer. Yes, it was the first, and it was a bit

difficult/complicated with the pandemic because we didn't accept many people, although it had to be more. Now we are planning the second Abeirar that we had the meeting last week to implement in September. It will be something within the same parameters, but more linked to orality and ancestry – the league of legends, and we are going to do a part of the science and the local, and we are going to do something that goes to call coffee the Cha. Because we are going to ask some old ladies who hide the medicinal plants to make the cha, then the chemical scientists are going to analyse the cha, and then the population is going to be surrounded in all the cafes because it will be winter and they took the tea in all the coffees. In addition, with the technical viability of that special tea.

Q: But, was this only in your region?

A: Yes, only in our region.

Q: So, one part of our project is to investigate the bars or impediments between various types of libraries. Did you have a problem with cooperation?

A: Hahaha... many... Oh no, not in cooperation. I tell you we have some difficulties in the project.

Before I also wanted to tell you: the numbers have been, the six hundred people who participated, dozens of people from the library organisation and the authors of literature and science combined.

The difficulties of the project: yes, I had, because of the financing, because it is a large region, we who were in a project as it has been a pilot project, there was no financing, we had to dislocate ourselves, the university gave us support as if , yes we go, but with great difficulty that day yes and that day no. I am the only one in the open science team and another colleague of mine. It has always been the weekend, Saturday or Sunday, or the night and they did not pay us and this is a problem. Then we have another difficulty, it has been COVID, because we combined a researcher and when the date approached the scientist fell ill and we had to combine the other and many times it was difficult.

Another difficulty has been to secure people because we did not dislocate the natural areas and if someone falls, we have no security. We told ourselves that he was not sure, but people came despite everything. Security has been complicated.

Q: Yes, I can imagine it. Anyway, the results have been very good.

A: Yes, because we have done it happily, informally and all of us, the libraries and ourselves. Nothing very formal because we have formalism every day. This served to participate, for people to learn and participate. And we have all done this with a good voice. We are the whole team, that is, the hard core is seven people, the representatives of the network (of the libraries), Geo Park, the citizen science of the other city and us.

We have been very surprised because from the television, from all the regional ones, they have reported the news, the television, better cultural programs that we have, the national television has passed the project, and we are left wow.

Of course, the second Abeirar, which is being prepared, already has some financing, there is a budget for all our travels in the region. Let's see how it comes out.

Q: Well, then I think we are already in citizen science knowledge questions before entering the project. Did you have any knowledge of citizen science?

A: Yes, I had.

Q: Yes, because you are responsible for open science.

A: I even had some ideas about this because I also like photography contributing to other citizen science platforms on plants and biodiversity. We are in Portugal with that project. I am also involved with an official, national citizen science network. We are going to see how this will work because it is a national network for everyone.

And, one difficulty is that all of us have other jobs and we all depend on hierarchical orders to be able to advance and it is a bit difficult to reconcile everything, but we will see.

Q: In the other regions of Portugal, is there also a network of libraries like in your region?

A: Yes, there are. The government has divided all the regions and all the regions have more or less the same thing.

The network of our region, one of the things we have achieved has been the collective catalogue of the network. You can search for books in all libraries, lend in one, and return in another.

Q: But does that only fit in your region or is it the national praxis as well?

A: The national praxis is that all regions have a network of libraries. I don't know how they work, but that's how it is.

Q: So, thank you for this interview, nice to meet you. Thank you very much.

A I will send information about the project.

Annex C – Survey: Citizen Science activity organisation (organisational aspects)

The survey (and questionnaire) aims to investigate:

„Aspects of planning, organising and implementing CEOS activity in collaboration with the public library“

„Skills and practices of library stuff in all libraries involved in the CEOS activity organisation“

„Opinions on the experience of collaboration with the public library in CEOS activity“

„The end product of activity and its impact on libraries, scientific and local communities“

Our main questions are about:

A: CEOS ACTIVITY BASIC DATA

B. CEOS ACTIVITY CONCEPT

C. CEOS ACTIVITY PROMOTION

D. LIBRARY STAFF ORGANISATIONAL SKILLS

E. CEOS ACTIVITY COLLABORATION

Dear colleagues,

With this questionnaire we would like to explore your experience in co-organizing Citizen Science activity as part of a CeOS project. We would like to investigate your aspects, challenges and all the positive and negative sides in the organisation and implementation of this type of activity.

Your answers are crucial in creating the study in which we will analyse the design, implementation and assessment stages of the CS developed in each country.

Thank you!

CEOS ACTIVITY BASIC DATA

State the name of your library.

State the name of your CEoS activity

State the name/s of the public library/ies that participated in the organisation of the CeOS activity.

At which location/s did you hold the citizen science activity/ies (it is possible to check multiple answers):

- ☐ online
- ☐ at your own institution
- ☐ in the public library
- ☐ outdoors (specify where)
- ☐ in another external institution (specify which)
- ☐ other location (specify where)

How long did CEOS activity last?

How many participants (citizens) participated in CEOS activity?

CEOS ACTIVITY CONCEPT

Which field of science was covered by your CEOS activity?

☐ natural sciences (mathematics, computer and information sciences, physical science, chemical sciences, biological science…)

☐ engineering and technology (civil engineering, electrical engineering, mechanical engineering, chemical engineering, industrial biotechnology, nano-technology…)

☐ medical and health sciences (basic medicine, clinical medicine, health sciences, medical biotechnology…)

☐ agricultural sciences (agriculture, forestry and fisheries, animal and dairy science, veterinary science, agricultural biotechnology…)

☐ social sciences (psychology, economy, sociology, law, political science, media and communications…)

☐ humanities (history and archaeology, languages and literature, philosophy, ethics and religion, arts…)

What was the target population of the CEOS activity? (it is possible to check multiple answers)

☐ all interested citizens

☐ all library users

☐ scientists

☐ teaching staff

☐ students

☐ children

☐ the elderly

☐ other (specify)

What were the participants' tasks in CEOS activity? (It is possible to check multiple answers):

☐ observation

☐ species identification

☐ classification or tagging

☐ data entry

☐ finding entities

☐ measurement

☐ specimen/sample collection

☐ sample analysis

☐ site selection and/or description

☐ geolocation

☐ photography

☐ data analysis

☐ other (specify what)

LIBRARY STAFF ORGANISATIONAL SKILLS

Has your library ever conducted its own CEOS activity (before this activity)?

☐ yes

☐ no

Next questions relate to CEOS project activity.

Was the CEOS activity integrated into the already existing process or service of your library?

☐ yes

☐ no

How many of your library staff participated in carrying out the CEOS activity?

☐ 1

☐ 2-5

☐ 6-10

☐ more than 10

Please rate on a scale of 1-5, where "1" means not skilled at all and "5" means very skilled, how skilled was your library staff **before** conducting CEOS activity?

	1	2	3	4	5
Communication skills					
ICT skills					
Technology acquisition skills					
Managerial skills					
Organisational skills					

Please rate on a scale of 1-5, where "1" means not skilled at all and "5" means very skilled, how skilled was your library staff **after** conducting CEOS activity?

	1	2	3	4	5
Communication skills					
ICT skills					
Technology acquisition skills					
Managerial skills					
Organisational skills					

Has your library gained new knowledge about citizen science through the implementation of CEOS activity?

☐ yes

☐ no

Please describe what has your library learned through conducting CEOS activity?

Will the experience of conducting CEOS activity contribute to expanding your library user services in the future?

☐ yes

☐ no

Does your library plan to continue developing and conducting CEOS activities?

☐ yes

☐ no

CEOS ACTIVITY PROMOTION

Which tools have you used in CEOS activity promotion? (it is possible to check multiple answers)

☐ The official website of my library

☐ Facebook page of my library

☐ Twitter account of my library

☐ Instagram account of my library

☐ Production of visuals, leaflets and/or posters

☐ An article in a local newspaper

☐ By announcement on the local radio station

☐ Other (specify what):

Was the CEOS activity promotion covered by the local or/and national media?

☐ yes

☐ no

Do you believe that the promotion of the CEOS activity influenced the public interest for the activity?

☐ yes

☐ no

☐ I don´t know

CEOS ACTIVITY COLLABORATION

Have you collaborated with the public library/es in any other programs or activities in the past?

☐ yes

☐ no

Please indicate the degree to which you agree/disagree with the following statements about the collaboration of CEOS activity:

	Strongly agree	Agree	Disagree	Strongly disagree
My library easily chose the public library to co-organize the CEOS activity				
The aims of the collaboration were clear				
The collaboration met our strategic priorities				
It was easy to run and manage collaborative CEOS activity				
All sides put in equal effort				
The public library staff demonstrated skills and knowledge in creating CEOS activity				
The library staff of my library acquired new skills thanks to the staff of the public library				
We plan to organise more CEOS activities in the future in collaboration with public library				

Please indicate the degree to which you agree/disagree with the following statements about the main barriers in collaboration of CEOS activity:

	Strongly agree	Agree	Disagree	Strongly disagree
lack of resources (staff, time, etc.)				
lack of experience in co-organizing events				
different work culture in higher education and public libraries				
administrative barriers				
financial barriers				
insufficient technical equipment				
geographical distance of libraries				
lack of knowledge about citizen science				

Please indicate the degree to which you agree/disagree with the following statements about the benefits in collaboration of CEOS activity:

	Strongly agree	Agree	Disagree	Strongly disagree
It had positive outcomes for the local population				
It had positive outcomes for the scientific population				
It had positive outcomes for my library				
It helped library staff with knowledge transform				
It made libraries more visible to public				
It helped with improving existing library services				
It has created strong business ties				

Have you collaborated with any institution (other than public library) in conducting your CEOS activity?

☐ yes

☐ no

If you answered „yes“ to previous question, please name the other cooperative institutions:

Please explain the role of that institution in conducting of CEOS activity.

Annex D – Questionnaire: Citizen Science activity participants

To this day, have you been aware of the existence of Citizen Science and/or Open Science?

☐ Yes

☐ No

Have you participated in Citizen Science and/or Open Science activity in the past?

☐ Yes

☐ No

Please rate your satisfaction with today's Citizen Science activity?

☐ Poor

☐ Good

☐ Very good

☐ Excellent

* Optional question – your answer/comment/suggestion is valuable for planning next activities

Please explain your answer on your satisfaction with today's activity

Have you learned something new today?

☐ Yes

☐ No

Will you use knowledge gained from today's Citizen Science activity in the future?

☐ Yes

☐ No

*Optional question – your answer/comment/suggestion is valuable for planning next activities

If you have ideas for the next similar activity please feel free to write a short description in the box below.