



**YouCount**  
Youth Citizen Science

D3.1

# Report on Citizen Social Science and Social Innovation: Analysis Based on YouCount Case Study Reports

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This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 101005931

|  |   |
|--|---|
| <b>Project Acronym</b>                     | YouCount  |
| <b>Project Name</b>                        | YouCount – Empowering youth and cocreating social innovations and policymaking through youth-focused citizen social science |
| <b>Grant Agreement no.</b>                 | 101005931   |
| <b>Start date of the project</b>           | 01/02/2021  |
| <b>End date of the project</b>             | 31/01/2024  |
| <b>Work Package producing the document</b> | WP3   |
| <b>WP Leader</b>                           | ESSRG   |
| <b>Other Partners involved</b>             | KTU   |
| <b>Deliverable identifier</b>              | D3.1  |
| <b>Deliverable lead beneficiary</b>        | ESSRG   |
| <b>Internal Scientific Reviewer</b>        | Michael Søggaard Jørgensen (AAU)  |
| <b>Due date</b>                            | 31 <sup>st</sup> October 2023   |
| <b>Date of delivery</b>                    | 31 <sup>st</sup> October 2023   |
| <b>Version</b>                             | 2.0   |
| <b>Author(s)</b>                           | György Pataki, Alexandra Czeglédi (ESSRG) and Eglė Butkevičienė (KTU)   |
| <b>Classification</b>                      | Public  |

*Disclaimer: This project has received funding from the European Union’s Horizon 2020 research and innovation programme under grant agreement No101005931. The opinions expressed in this document reflect only the author’s view and reflects in no way the European Commission’s opinions. The European Commission is not responsible for any use that may be made of the information it contains.*

# Table of Contents

**D3.1 REPORT ON CITIZEN SOCIAL SCIENCE AND SOCIAL INNOVATION: ANALYSIS BASED ON YOUCOUNT CASE STUDY REPORTS ..... 5**

**EXECUTIVE SUMMARY ..... 7**

**1. INTRODUCTION..... 9**

    1.1 Objective..... 11

    1.2 Theoretical and Methodological Approach..... 11

    1.3 Overview of YouCount Case Studies ..... 14

**2. SOCIAL INNOVATION ANALYSIS ..... 16**

    2.1 Social Innovation in the YouCount Case Studies..... 16

        2.1.1 The Living Lab Approach..... 16

        2.1.2 The Content of Social Innovation ..... 17

    2.2 Social Innovation from a Process Perspective ..... 18

        2.2.1 New Framings ..... 18

        2.2.2 New Social Encounters ..... 19

        2.2.3 New Social Practices ..... 20

        2.2.4 New Temporality ..... 21

    2.3 Social Innovation from an Impact Perspective..... 22

        2.3.1 Case-specific Social Innovation Impacts ..... 22

        2.3.2 Cross-case Social Innovation Impacts..... 24

    2.4 Social Innovation from a Technological Perspective..... 28

        2.4.1 Digitally mediated inclusion, engagement and learning ..... 28

        2.4.2 Digital tools and inclusivity ..... 29

        2.4.3 Digitally mediated social relations..... 30

        2.4.4 Digitally mediated gamified learning..... 32

        2.4.5 From digital fatigue to in-person analogue tools ..... 33

        2.4.6 Digital divide ..... 33

**3. THE ROLE OF CITIZEN SOCIAL SCIENCE ..... 34**

    3.1 CSS as Social Innovation ..... 34

        3.1.1 CSS as a social inclusion process..... 35

        3.1.2 CSS as a relational approach to doing research ..... 35

        3.1.3 Limits to CSS as social innovation ..... 36

    3.2 CSS as a Tool for Social Innovation..... 37

        3.2.1 Creativity..... 37

        3.2.2 Democracy ..... 38

        3.2.3 Empowerment ..... 38

        3.2.4 Sector-based innovative potentials ..... 39

        3.2.5 Technology mediation as a paradox..... 40

**4 CONCLUSION ..... 40**

**APPENDIXES..... 43**

## List of figures

FIGURE 1. TIMELINE OF THE SOCIAL INNOVATION CROSS-CASE ANALYSIS WORK IN WP3. .... 10

## List of tables

TABLE 1: REVISION HISTORY..... 5  
TABLE 2: TERMS AND ABBREVIATIONS..... 6  
TABLE 3: ANALYTICAL GUIDE FOR LOCAL CASES REPORTING ON SOCIAL INNOVATION. .... 13  
TABLE 4: TEN CASES OF Y-CSS IN YOUCOUNT ..... 15  
TABLE 5: ESSENCE OF SOCIAL INNOVATION IN EACH YOUCOUNT CASE STUDY ..... 17  
TABLE 6: OVERVIEW OF TECHNOLOGY AND DIGITAL TOOLS APPLIED IN THE TEN YOUCOUNT CASES .... 29  
TABLE 7: APPENDIXES ..... 43

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**Cited as:** Pataki, G., Czeglédi, A., Butkevičienė E. (2023). *D3.1 Report on Citizen Social Science and Social Innovation: Analysis Based on YouCount Case Study Reports. YouCount project.* Doi. 10.5281/zenodo.10053311

# D3.1 Report on Citizen Social Science and Social Innovation: Analysis Based on YouCount Case Study Reports

This deliverable is based on Work Package (WP) 2 & 3 in the EU YouCount project which includes a multiple case study of ten cases in 9 countries across Europe and Task 3.1 in WP3 consisting of a case summary report from each case. It elaborates on the experiences of using citizens science as a tool for social innovation and of relevance for social entrepreneurship. It has a particular focus on involving youths at risks for social exclusion and disadvantaged areas.

The conceptual approach to social innovation is also outlined in D1.2 Report on the conceptual, innovative, evaluation and ethical framework for youth citizen social science from 2021.

The vision of YouCount is twofold, addressing and combining both the scientific and societal needs of our time. The scientific *vision* of YouCount is to strengthen the transformative and participatory aspects of CS and social science, by enabling citizen participation in all facets, reaching out for a more egalitarian way of conducting science. The societal vision of YouCount is to contribute to create inclusive and innovative societies for European youths and to empower them in promoting active citizenship and a just and equitable future, particularly for youths with disadvantages.

Table 1: Revision history

| VERSION | DATE       | CREATED BY   | COMMENTS                                   |
|---------|------------|--|--|
| 1.0     | 19/10/2023 | György Pataki, Alexandra Czeglédi (ESSRG), Eglė Butkevičienė (KTU) | First version delivered to internal review |
| 1.1     | 29/10/2023 | Michael Søggaard Jørgensen (AAU)                                   | Internal review                            |

|     |            |  |   |
|-----|------------|--|---|
| 2.0 | 30/10/2023 | György Pataki, Alexandra Czeglédi (ESSRG)                          | Second version, revised based on internal review    |
|     | 31/10/2023 | György Pataki, Alexandra Czeglédi (ESSRG), Eglė Butkevičienė (KTU) | Final version submitted by Reidun Norvoll (OsloMet) |

Table 2: Terms and Abbreviations

| ABBREVIATION | FULL TERM   |
|--------------|---|
| CM           | Consortium meeting  |
| CS           | Citizen science   |
| CSS          | Citizen social science  |
| C-YCS        | Young citizen scientists from the local community or targeted organisation or population (lower level of participation) |
| ICT          | Information and Communications Technology   |
| LL           | Living lab  |
| PAR          | Participatory action research   |
| RRI          | Responsible research and innovation   |
| RT           | Research team   |
| R-YCS        | Young citizen scientists participating in the research team   |
| WP           | Work Package  |
| YCS          | Young citizen scientist   |
| Y-CSS        | Youth citizen social science  |
| YouCount app | 'YouCount CSS app' on the SPOTTERON CS platform   |

## Executive Summary

This deliverable includes a presentation of the social innovation analysis of the ten YouCount hands-on citizen social science (CSS) case studies implemented under YouCount WP3 Task 3.3 'Cross-case analysis of local innovation, social change and the innovative potential of CSS'.

Throughout the YouCount project, various events and tools were iteratively used to further the joint understanding among case partners the conceptual and methodological perspectives of the social innovation analysis and enable them to report on their hands-on CSS cases in a structured template format.

Our research approach to social innovation analysis was based on plural theoretical perspectives and included three broad theoretical threads: social innovation as (i) social process, (ii) social impact creation, and (iii) technologically mediated. The YouCount cross-case analysis research was inspired by a relational theoretical perspective that defines social innovation as changing social relations, manifested in changes in doings (practices), framings (narratives), knowing (knowledge and skills) and organising (governance solutions). The ten YouCount hands-on CSS case studies were implemented through a living lab approach that provided space for the co-creation and participation of multiple actors, including researchers, R-YCS, C-YCS, and stakeholders to discuss, experiment, learn, and negotiate with each other around the topic of youth social inclusion.

The cross-case social innovation analysis explored the ten YouCount hands-on CSS case studies as social innovation processes that created new framings for youth social inclusion, provided space for new social encounters for social actors otherwise rarely meet (including most prominently intergenerational encounters), developed new social practices for collaborative research and innovation, and enacted a new temporality compared to conventional social science research.

The cross-case social innovation analysis explored the ten YouCount hands-on CSS case studies as creating social impacts that are specific to the cases and more general across the cases. Beyond the contextual social changes specific to each case, across the YouCount case studies there were a number of changes at multiple levels that included the increased self-confidence of R-YCS, the enhanced sense of accomplishment and pride by R-YCS, the strengthened feeling of social belonging by R-YCS, the establishment of new network constellations, the importance of 'research relationships,' the enactment of a relational approach to doing research, the stakeholders' perspective change on youth, and the future collaborations that were inspired.

The technological perspective on the YouCount hands-on CSS cases highlighted the role and impacts of technology and digital tools in CSS. The adaptation of these tools had both positive and negative effects on social inclusion, engagement, learning processes and interpersonal interactions. The analysis showed that the normalisation of technology can lead to digital fatigue – with young people opting for analogue, offline methods – and a digital divide – when certain

members of the CSS research groups need further support in interacting with technology in the research process.

Finally, lessons learnt on the role of CSS in social innovation are described by analysing two aspects: CSS as social innovation and CSS as a tool for social innovation. CSS as social innovation can be detected in the YouCount cases as enacting CSS as a micro-level social inclusion process and as a relational research approach, while some limitations are also shared. CSS as a tool for social innovation can be demonstrated through the creativity it enables, the 'school of democracy' and empowerment it enacts, the innovative potential it may bring to some sectors (e.g. education, employment), while some cautionary notes are also provided on the paradox of technology.

# 1. Introduction

YouCount is an EU project funded under Horizon 2020, the Science with and for Society (SwafS) programme. Its key objective is to generate new knowledge and innovations to increase the social inclusion of youth through co-creative youth citizen social science (Y-CSS), where young people contribute as citizen scientists.

This deliverable includes a presentation of the social innovation cross-case analysis of the ten YouCount hands-on citizen social science (CSS) case studies implemented under YouCount WP3 Task 3.3 'Cross-case analysis of local innovation, social change and the innovative potential of CSS.' This work was organised in an iterative way. It has started with presenting the theoretical approaches to social innovation that finally resulted in a plural conceptualisation of social innovation (1) as a process, (2) as creating social impacts, and (3) as mediated by technologies (as presented in YouCount's conceptual framework, see chapter 1.2.3 in YouCount D1.2). Moreover, as social innovation was supposed to be analysed across all YouCount case studies, a methodological guidance on data collection and analysis was also developed and discussed with case partners (see chapter 3.7 on data collection and chapter 4.2.3 on data analysis framework in YouCount D1.3).

Throughout the YouCount project, various events and tools were used to further the joint understanding among case partners the conceptual and methodological perspectives of the social innovation analysis (see for details Figure 1 on WP3 work timeline). WP3 has used the space provided by online and offline consortium meetings (CMs) to work with case researchers to report the state-of-affairs regarding the development of their cases from a social innovation perspective. The monthly online meetings of WP2-3 were also served to provide space for case partners to reflect upon the development of their own cases from a social innovation perspective and learn from each other.

A case study report template was co-developed by WP3 partners (ESSRG, KTU, UCLan, UNINA with contribution by FD) and case partners in order to provide a comparative basis for cross-case analysis. The interim case reports served as a 'test' to reflect upon how the template serves the purposes of meaningful reporting by the cases and the cross-case analysis by WP3 partners. An extensive modification of the template was carried out based on the experience of the interim reporting. The final case study report template (see Appendix 1) were not only including the reporting structure but brief explanations and guiding questions were provided for each chapter. The social innovation analysis presented in this deliverable is based upon the relevant chapters of all YouCount final case study reports.

*Here, we would like to thank all YouCount case partners for their committed work on their case study reports.*

Figure 1. Timeline of the social innovation cross-case analysis work in WP3.



The structure of this report is the following. Chapter 1 is devoted to an introduction, including the objective of YouCount WP3 (1.1), a very brief explication (1.2) of the theoretical and methodological approach (due to a more extensive elaboration already provided in YouCount D1.2 and D1.3, respectively), and an overview of the YouCount cases (1.3). Chapter 2 is devoted to the cross-case analysis of social innovation. It starts with an introduction to the living lab approach (2.1.1) since the YouCount youth citizen social science (Y-CSS) activities were implemented in a multi-actor setting provided by living labs (LLs) for all YouCount cases. In addition, all cases are introduced by providing the substantive content of their social innovations (2.1.2). The next sub-chapters of this report present the cross-case analysis following the plural theoretical perspective taken: process (2.2), impact (2.3), and technology (2.4). Chapter 3 shares our learning on the role of citizen social science (CSS) in social innovation. Finally, Chapter 4 concludes on the main lessons of the cross-case social innovation analysis. The Appendix contains the final case study report template that intend to assist the transparency of the research and cross-case analysis conducted in YouCount WP3.

## ***1.1 Objective***

YouCount WP3 aims to develop new and better ideas for social innovations and policy-making to cocreate positive social change in the field of youth social inclusion. One of the intentions within the YouCount project is a better understanding of youth social inclusion from a point of view of social innovation and social change.

The present deliverable aims to report on our exploration of the social innovations of the ten YouCount hands-on CSS case studies and the innovative potential of CSS for the social inclusion of youth based on the cross-case analysis of YouCount case studies.

## ***1.2 Theoretical and Methodological Approach***

Our research approach to social innovation analysis is based on plural theoretical perspectives and includes three broad theoretical threads:

- Process Analysis: citizen social science (CSS) as a dynamic interface of science-society relations – How social (incl. power) relations are reconfigured in/by CSS?
- Impact Analysis: CSS as a tool for achieving positive social change via innovation – What kind of social impacts are created by CSS?

- Technology Analysis: CSS as technology-mediated reconfiguration of social-material relations – What is the role of technology in CSS?

In understanding social innovation, our plural theoretical perspective follows a relational approach to social innovation. In this sense, social innovation is defined “as a process of changing social relations” (Pel et al. 2020, p. 3) and understood as “innovations in social relations” (Moulaert et al. 2013, p. 2). This relational approach we follow in our social innovation analysis refers to social innovation both as a process of engagement, mobilisation, and participation and as outcomes and impacts of actions. Moreover, social relations are understood in a broad sense as “socio-material relations” (Pel et al. 2020, p. 3) which is of high significance for our analysis since all YouCount cases applied multiple technological artefacts, most importantly the ‘YouCount App’, in their hands-on CSS projects. Since in citizen science (CS) in general technological artefacts are widely applied, we decided to treat the ‘technological dimension’ as a separate analytical dimension to be reflected upon both in the reporting of YouCount case studies and the cross-case analysis.

Since most YouCount case partners are researchers in the field of social inclusion rather than social innovation, there was a need to bring the social innovation perspective closer to case researchers and operationalise this theoretical perspective as much as possible for a better guidance for writing the social innovation chapters of the YouCount case study reports. In order to move towards a meaningful operationalisation of social innovation, we followed our previous experience gained in the TRANSIT (Transformative Social Innovation Theory) FP7 EU project and subsequent publications (most importantly, Pel et al. 2020). Therefore, social innovation as a change in socio-material relations will put analytical foci on new ways of (i) doing, (ii) framing, (iii) knowing, and (iv) organising. New way of doing includes the multiple activities through which social innovation unfolds over time (process perspective); social practices that are changing (impact perspective); and engagements with the materiality of multiple technologies applied (technological perspective). Social innovation as new framings may include new sensemaking activities (process), new narratives or stories to be told (impact), and new interpretations of the socio-material (technology). New ways of knowing put emphasis on learning interactions (process), new capabilities gained (impact), and new skills developed and practised (technology). The new ways of organising mean new decisionmaking processes enacted (process), empowerment and disempowerment resulted (impact), and the influence by technologies applied (technology).

Furthermore, due to the focus of YouCount on gender and policy relevance, our operative guide on social innovation also included the gender and policy dimensions. Case study researchers were asked to report on gender dynamics (process), results in gender mainstreaming (impact), and the reconfiguration of gendered socio-material relations (technology). Similarly, the role and activities of policy actors (process), the changes in policy practices (impact), and the policy-technology nexus (technology) were also suggested to be included in case study reports. The resulted analytical guide is summarised by Table 3. It should however be emphasised that this served as

analytical guidance for a better operationalisation of social innovation analysis for the case researchers. In this deliverable, we will concentrate more on the overarching findings of the cross-case social innovation analysis and we will not report all details according to this analytical guide, partly due to the fact that some of the dimensions turned out less relevant to the YouCount cases.

Table 3: Analytical guide for local cases reporting on social innovation.

|                                    | Process  | Impact   | Technology  |
|------------------------------------|--|--|---|
| <b>Activities</b>                  | <i>AP: Doings - timeline</i><br>Describe through which activities and events the process unfolded                  | <i>AI: Practice</i><br>Describe what has been changed  | <i>AT: Engagements</i><br>Describe what technologies were used and how  |
| <b>Knowledge</b>                   | <i>KP: Learning interactions</i><br>Describe what events and encounters served participants' learning              | <i>KI: Capabilities</i><br>Describe what kind of new capabilities, knowledge, skills, etc. were developed or emerged                           | <i>KT: Interactions and Skills</i><br>Describe what knowledge, skills, etc. were developed or emerged related to technologies applied |
| <b>Organising/ governance</b>      | <i>OP: Decision-making</i><br>Describe the organisational processes relevant, incl. power dynamics                 | <i>OI: Dis/empowerment</i><br>Describe what has been changed regarding the empowerment and disempowerment of Y-CS (individual and group level) | <i>OT: Influence</i><br>Describe what influence technologies have exerted   |
| <b>Framing</b>                     | <i>FP: Sensemaking</i><br>Describe the dynamics of meaning-making  | <i>FI: Story</i><br>Describe an impact narrative   | <i>FT: Interpretation</i><br>Describe how technologies were framed and how technologies changed meanings                              |
| <b>Policy</b>                      | <i>PP: Policy actors</i><br>If relevant, describe the role policy actors have played and their specific activities | <i>PI: Policy-making</i><br>If relevant, describe the policy change or influence on policy that happened                                       | <i>PT: Policy-tech. nexus</i><br>If relevant, describe the role, influence, etc. of technologies applied to policies                  |
| <b>Gender</b>                      | <i>GP: Gender dynamics</i><br>Describe the unfolding gender relations (im/balance across actions)                  | <i>GI: Gender mainstreaming</i><br>Describe what has changed regarding gender relations and dynamics   | <i>GT: Gendered application</i><br>Describe how the usage of technology is gendered   |
| <b>Other (emerging categories)</b> |  |  |   |

## 1.3 Overview of YouCount Case Studies

The YouCount project implemented ten individual cases of Y-CSS located in nine countries across Europe that are considered as highlighting key social challenges within the three domains (citizenship, community belonging, social participation) of social inclusion regarding youth.

The nine countries which provided the context for YouCount case are the following:

- Austria – Vienna (but through hybrid workshops also residents of other Austrian cities)
- Denmark – South Harbour, Copenhagen
- Hungary – the village of Siklósbodony (Hungary-B) and the city of Szeged (Hungary-A)
- Italy – Forcella, Naples
- Lithuania – Panevėžys district municipality
- Norway – Gamle district, Oslo
- Spain – Gipuzkoa province, Basque country
- Sweden – Botkyrka municipality
- the United Kingdom (UK) – Preston

The types of youth groups at risk of social inclusion engaged in YouCount were the following: hard of hearing youth, migrant youth, rural youth, and urban youth.

YouCount separated three domains of youth social inclusion and grouped the case studies accordingly:

- Citizenship (citizen rights and responsibilities): Austria, Denmark, Spain
- Community belonging (social and community relationships and networks): Hungary-B, Italy, Lithuania, UK
- Social participation (participation in social and community activities and spaces): Hungary-A, Norway, Sweden

Table 4 summarises the main features of the YouCount cases regarding youth social inclusion.

Table 4: Ten Cases of Y-CSS in YouCount

| Country   | Type of youth group/geographical area | Case topic   | Social inclusion domain |
|-----------|---------------------------------------|--|-------------------------|
| Austria   | Migrant youth / Urban                 | Which civic engagement opportunities do young migrants have and which opportunities are missing?   | Citizenship             |
| Denmark   | Urban youth                           | How to engage youth in co-designing sustainable activities in their local environment, and can these processes create civic youth engagement and social inclusion?   | Citizenship             |
| Hungary-A | Hard of hearing youth / Urban         | What are the challenges and enablers in becoming autonomous adults?  | Social participation    |
| Hungary-B | Rural youth                           | What are the constraints and possibilities for sustainable agriculture techniques to be applied?   | Community belonging     |
| Italy     | Migrant youth / Urban                 | Which are the drivers for social inclusion of young migrants in the hosting local community?   | Community belonging     |
| Lithuania | Rural youth                           | What does it influence whether young people feel they belong to the local community?   | Community belonging     |
| Norway    | Urban youth                           | What are the drivers for social inclusion through youth employability and social entrepreneurship in the city?   | Social participation    |
| Spain     | Migrant youth / Urban                 | Which are the inclusion factors for young migrants in our society?   | Citizenship             |
| Sweden    | Youth Council / Urban                 | Can engagement in a youth city council lead to other forms of social inclusion?  | Social participation    |
| UK        | Urban youth                           | <p>What helps, as well as what gets in the way of young people feeling they belong and are connected to Preston?</p> <p>What are the factors (or drivers) that better promote a supportive climate for youth-driven solutions?</p> | Community belonging     |

## 2. Social Innovation Analysis

This part of the deliverable report presents the social innovation analysis across the YouCount case studies. First, we briefly introduce the living lab approach that was provided and discussed with YouCount case partners who implemented the living labs (LLs) in their cases. Then, we present the essence of social innovation as defined by each case. Next, the process perspective on social innovation will be summarised by highlighting the main findings from the cross-case analysis. The impact perspective collects the particular (case-specific) and general (cross-case) social impacts reported by YouCount cases. Finally, insights from the technological perspective are discussed.

### 2.1 Social Innovation in the YouCount Case Studies

YouCount as a citizen social science (CSS) project has implemented the living lab (LL) approach in order to engage multiple actors that are considered key knowledge-holders regarding youth social inclusion. Thus, CSS and LL were combined in order to experimentally explore the innovative potential of CSS and co-generate in a multi-actor setting new, actionable and policy-relevant knowledge on youth social inclusion.

#### 2.1.1 The Living Lab Approach

The living lab (LL) approach provides a unique research context to study social innovation since

- distinct roles are assigned to citizens as users and co-producers of knowledge in innovation processes
- space is created for interdisciplinary collaboration that drives scientific research in co-creation with end-users
- it is not a single physical space but a network in which researchers collaborate through continuous discussion with end-users
- it is built to respond to, i.e. meet and solve, societal (i.e. user) needs and create opportunities, i.e., empower users, for transformative actions in order to modify social practices and social structures.

**Young people as end-users of YouCount LLs.** In the language of LL, young people are the end-users and their desires, experience, and ideas drive the research and innovation (R&I) process unfolding in YouCount cases.

**Partners to be invited to YouCount LLs.** Beyond the users, each LL invites “partners” who represent those stakeholder groups, professions, organisations, which bring in diverse knowledge types that are relevant for the focal topic and/or of significance in the specific context of the particular LL working on youth social inclusion.

**YouCount LLs as a space for social innovation.** In YouCount, LLs are conceived as spaces for social innovation since they provide the context for searching for socially innovative solutions for youth social inclusion. Therefore, it constitutes our study site for better understanding the relationship between citizen social science (CSS) and social innovation.

## 2.1.2 The Content of Social Innovation

Since the YouCount cases of hands-on citizen social science (CSS) were implemented in diverse contexts and engaged different groups of young people and stakeholders, the substantive content of social innovation was also diverse and different from each other. By reading the case study reports, the essence of social innovation in each case were generated and then validated by case researchers. Table 5 contains an overview of the particular definition of the content of social innovation for each YouCount case.

Table 5: Essence of social innovation in each YouCount case study

| YouCount Case | What is the social innovation in the case?   |
|---------------|--|
| Austria       | <i>Expanding the political participation and civil engagement possibilities of young refugees</i>  |
| Denmark       | <i>Designing a more youth-friendly and sustainable neighbourhood (physical places, organizations, and events) and creating new relations in and for the neighbourhood</i>                    |
| Hungary-A     | <i>Social inclusion is re-framed as the de-fragmentation of society</i>  |
| Hungary-B     | <i>Connecting a marginalised rural community with socially embedded innovative networks</i>  |
| Italy         | <i>Enhancing the role of Italian youth and youth with migration background in community activities and the opportunities for dialogue on convivial living in an urban centre</i>             |
| Lithuania     | <i>Research as a socially interactive practice that enables rural young people to raise their voice in their communities</i>   |
| Norway        | <i>New ways of connecting, co-creating, and organising employment systems and responsibilities for employers to make youth jobs meaningful and part of the larger professional community</i> |
| Spain         | <i>Research as a participatory and democratic social practice that enables young people to be heard by experts and policymakers</i>  |

|                |  |
|----------------|--|
| Sweden         | <i>Re-connecting the multiple groups of young people and local political decisionmakers at municipal level</i> |
| United Kingdom | <i>New ways of decisionmaking based on dialogue with and participation by young people</i>                     |

## 2.2 Social Innovation from a Process Perspective

This section analyses social innovation from a process perspective across the YouCount cases along four themes: framings, encounters, practices, and temporality.

### 2.2.1 New Framings

In many of the YouCount case studies, a new dynamics of meaning-making was detected and reported by case researchers. The activities of meaning-making revolved around the very concept of social inclusion and some related terms used in the specific contexts of the case studies (e.g. terms like “migrant,” etc.). Across the cases significant questions emerged: Who is social included by whom? What does exactly change in social inclusion processes? Is social inclusion the right term to be used in each context?

New framings were explicitly emerging in many YouCount cases in searching for answers to these and other related questions. The UK report, for example, interpreted the process of CSS and LL as “bringing together difference in vivo” (UK case report). Social inclusion was framed as ‘contact between differences;’ the CSS and LL processes contributed to innovation by bringing together different actors and creating contact between them which otherwise have not occurred. Social inclusion as contact between differences means in the YouCount cases that young people and adult stakeholders meet and bring together diverse expertises for positive social change.

Many of the YouCount cases have referred to a change in interpreting social inclusion as re-connection. As the Hungary-A case reports: “During our shared process, our (as academics) understanding of social inclusion has changed. We are inter-connected with each other, and the empowerment of ‘them’ [heard of hearing youth] is the empowerment of ‘us’, since the web of the group is changing together. Inclusion in this way can be re-framed as a joint and interdependent transformation of all actors involved, where connections are (re-)established and the community is being defragmented.” (Hungary-A case report) Relatedly, the Danish case reported that an inter-generational re-connection was enacted in YouCount: “[YouCount CSS and LL] created a free space for the youths to reflect and not be judged by older generations. It was their [the youth’s] voice, knowledge, and creativity that counted” (Danish case report). In the Spanish case, citing one of the journalist stakeholders also framed social inclusion as re-

connecting. As the journalist argued, the media framing of the youth does matter: they (i.e. the journalists) should broaden (i.e. reframe) how they present the “we,” including those without “Basque names.”

In the co-creative and participatory processes enacted by the CSS and LL processes of YouCount cases, the youth could demonstrate their abilities and skills for positive contribution to exploring and searching for solutions to highly relevant social problems. This way, as the Italian case reports, the framing could change from a passive, welfarist understanding towards an active, agency-based perspective: “...as to the views about social inclusion and migratory processes, a spread welfarist perception of migrants as ‘needing help’ emerged with reference to the broader community, standing against the need to understand that migrants are people, have power, and have their own experiences, history, and resources” (Italian case report). The YouCount cases demonstrated that, given the space for equal participation, the youth, categorised as ‘youth at risk of social exclusion,’ possess, and further develop, capabilities and knowledge (through their lived experience) to positively contribute to community well-being. The youth, framed as active agents of change in social inclusion processes, can be co-creators of contextualised solutions to the societal challenge of youth social inclusion.

## 2.2.2 New Social Encounters

In YouCount, CSS and LL were implemented as a series of workshops, dialogue forums, and multiple other events (e.g. exhibitions, etc.) that provided spaces for a series of social encounters and interactions between the youth, professional researchers and other stakeholders. These new social encounters are enacted and enabled through the CSS and LL processes in which the social relations between participants were re-configured. Most significantly, these encounters were inter-generational and clearly created a social space that seemed to be missing or, at least, too constrained in the current functioning of our societies: “creating room for intergenerational collaboration and reflection” (Danish case report).

In the YouCount cases, CSS and LL processes were “polyphonic” and “allowed for a multiplicity of voices to emerge” (Norwegian case report). The space created by the YouCount CSS and LL processes was an “experimental space to meet, discuss, negotiate, and be creative” (Danish case report – emphasis added). Thus, the social encounters confronted participants with social diversity, motivated them to discuss and negotiate with each other, and opened up their creativity to come up with new ideas or solutions related to youth social inclusion. These social encounters served as an “incubator of inclusive ideas” promoting a different way of living together (Italian case report).

CSS combined with LL created a “first public stage of gaining recognition and increasing self-esteem” of the youth, while also provided a space for networking among social actors otherwise never meet (Hungary-A case report). In this sense, CSS provides an opportunity for young people

to experience new social encounters while increasing their feeling of social belonging: YCS enter and connect to the academic field and meet and build connections with multiple stakeholders. CSS, as a process of relationship building, could strengthen social belonging: "...opened the opportunity to increase their [the youth's] networks, getting acquainted and even begin a friendly relationship with other youngsters and some members of the academic team" (Spanish case report).

If CSS is implemented as a series of social encounters, as was done in YouCount, it may model a social functioning in which diverse participants can connect to each other through various encounters, gain mutual support and social mentoring. "...there has been a tangible appreciation from the YCS who took up the opportunity for mentoring support because it is an added personal benefit from being part of the research team. Secondly, the mentoring meetings have helped to develop the relationships between the academic researchers and the young people ..." (UK case report – emphasis added)

### 2.2.3 New Social Practices

The YouCount cases reported on changes in research as a social practice of knowledge production compared to conventional research practices. CSS engages the youth as co-researchers, so professionals and amateurs are working together to design and carry out research. A lot of routine doings of a research process (preparing and training, coordinating and organising, data collecting and analysing, discussing and reflecting, etc.) might also change towards doing them together (researchers and Y-CS).

YouCount cases pointed out that many decisions on research design were made differently than in conventional research. CSS follows a participatory way of decisionmaking on research design: co-designing research questions, joint decisions on data collection methods, deciding on roles taken in facilitating sessions and workshops, providing and implementing ideas for communication and dissemination (e.g. exhibitions). In some cases, CSS combined with LL amounted to a new decisionmaking practice: embodying a more deliberative and participatory decisionmaking process in which conventional "decision-makers are transformed into decision-facilitators" (UK case report).

Power relations are also changed: researchers give up their conventionally exclusive control of the research process while empowering YCS as equal partners, i.e. respected knowledge-holders and co-researchers who also participate in every research step. "By YCS taking leading roles, not only was it empowering for them, but it also clearly set the tone with the stakeholders for our youth-led agenda" (UK case report).

The organising of research also changes towards more democratic and participatory practices: dialogue, negotiation, and listening enter the focus. These practices imply new skills (e.g. empathy, facilitation, listening, managing emergence and uncertainties, creating a safe space, etc.) to gain

primary importance and expected to be practised by CSS researchers that might not be in the skill-set of conventionally trained social science researchers.

As CSS puts emphasis on the lived experience of the youth, the personal stories of Y-CS occupy the centre of data collection, discussions and, often, dissemination which eventually contributes to the youth's feeling of being empowered (positively recognised in their communities). "Having their [the youth's] stories portrayed in the news has also contributed to feeling more empowered, as one of their critiques was the lack of positive stories about migrants in the news. It was also satisfactory for them that some of their neighbours recognised them after having appeared in the newspaper" (Spanish case report).

YouCount cases emphasised that Y-CS also develop new knowledge and skills through participating in research practices and might also experience how research can contribute to increasing their life opportunities. YouCount cases reported CSS as a trustful or trust-building social practice in which youth participating may gain confidence, experience recognition, and get to know their immediate neighbourhood and its social problems much better. This might have a spillover effect on youth agency in other social contexts and practices. "We see great potential in creating positive local learning opportunities both in school settings and the local project setting from the collaborations. The youth gained much knowledge about the social dynamics in the local area, and it helped change their perspective of what is possible to do and contribute." (Danish case report)

## 2.2.4 New Temporality

All YouCount cases reported that time gains primary significance due to the need to find a joint rhythm in the research process between researchers and Y-CS. The rhythm of youth life worlds may well be different and create situations where dissonances may arise which might create situations of unfulfilled expectations and the need for continuous re-adjustments. For example, many YouCount cases reported that school-time has interfered with the process of research, sometimes even losing some of the Y-CS at key events. "Youth is busy with life." (Danish case report)

Establishing the research team (incl. professional researchers and R-YCS) also needs time since it is building of a community, forming a cohesive group of diverse ages and life experiences. It is a process to find the pace and rhythm that fit all participants so it is as little excluding as possible. "Getting a good rapport with the group of R-YCS has taken quite some time. It is particularly difficult with those who are in a more vulnerable position..." (Spanish case report).

Fundamentally, CSS needs time, more time than conventional research to build or re-build social relations (e.g. trust, understanding, etc.) in order to conduct the research process together. Doing research in a co-creative way, as YouCount CSS aspired to, requires researchers to enact a new temporality compared to conventional research practices. "The research focus and the specific research questions were elaborated in a 1-year long process..." (Hungary-A case report). The

YouCount experience of CSS's nem temporality might also be a warning sign for project designs: "However, the amount of time and effort which was put into the regular communications with the YCS, the planning and facilitation of the bi-weekly meetings, as well as organising and promoting other events is an important consideration in planning project timelines. This initially had not been fully anticipated." (UK case report)

Time is connected to the issue of power. Ensuring the high quality of the research process requires giving time to learn the rhythm of the others (in our YouCount cases, the youth) and facilitate the temporal alignment of actors (researchers and Y-CS) for the sake of inclusion in the research process. "If there is not enough time provided for everyone to understand what's been said or presented, it may lead to isolation – which is a frequent experience in their [hard of hearing youth] daily life as a basis of exclusion. Time itself therefore becomes an aspect of power: those who can give time, have the power. If someone is asking for more time, it can be seen as an act of (re)gaining power. Consequently, having or providing enough time is a crucial element of inclusion. As one of the HH research group member said: 'Here [in the research group] we finally have time to connect'" (Hungary-A case report).

Different temporalities might conflict and create limits to co-creation and participation. As all publicly funded projects, YouCount processes also had to comply with the temporalities set by the rules of the funding programme (even if some flexibility is built in). "We faced two conflicting (or seemingly conflicting) drives: to be efficient and productive in a given time frame for project efficiency and to be slow and inclusive for a valid and legitimate approach (efficiency vs. slowness)" (Hungary-A case report). 'Project time' may put a different 'intensity' on a CSS process than otherwise would have happened which, in some of the YouCount cases, resulted in limited youth participation, for example, in data analysis and, in all YouCount cases, acted against the joint authorship of R-YCS and professional researchers of the final case study reports.

## ***2.3 Social Innovation from an Impact Perspective***

From an impact perspective, what can be considered as socially innovative in the YouCount cases can be particular to one or few cases or more general across cases. First, we mention the socially innovative impacts relevant to one or few YouCount cases, then we turn our attention to the general findings regarding social impacts across all the cases.

### **2.3.1 Case-specific Social Innovation Impacts**

The Norwegian case has its focus on youth employment and ended up a new framing of a youth desired job that has its focal question of "how do the youth feel when they are working?" As they report on their learning of what youth expect from a job based on the criteria of a youth-inclusive

job co-created in the process: “...a shift from today’s technical approach to a more substantial, relational and emotional approach” is needed if youth perspective is taken seriously (Norwegian case report). A significant impact of their work in YouCount is a change in job design practices: one of the stakeholder organisations, together with other relevant organisations, developed a new job offered to youth inspired by the criteria developed by Y-CS.

The Danish case had a clear educational focus and ended up co-creating educational materials for guiding a more actionable and problem-based teaching on sustainability issues. Gamification and other creativity-based, playful methods were extensively used in the Danish case and developed for the purpose of youth engagement. These games also constitute end-products in themselves and provide hands-on tools to change teaching practices on sustainability issues.

The Spanish case engaged in their living lab (LL) journalists as stakeholders, specifically by the request of Y-CS. Having experienced the LL process and the contributions of Y-CS, journalists’ practices have changed in the sense that they reported on positive stories of migrant youth in their media outlets that eventually generated positive recognition of the youth in their own neighbourhoods. “...one of the journalists also mentioned during the second forum that it was important to contact migrants not only when addressing issues about migration (even if presenting a positive image of migrants), but also when discussing more ‘general’ news. This would be a sign of true inclusion...” (Spanish case report)

Somewhat similarly to the Spanish case, the Italian co-researchers (professionals and youth) has co-created a “vocabulary of inclusion” in Italian. Together they started to co-generate a new language regarding the youth with multicultural backgrounds living in one of the historic neighbourhoods in Naples. “...participants proposed to include in the video a ‘vocabulary of inclusion,’ with reference to the words they reckoned as more appropriate to the topic after the discussions held during the previous Living Lab meetings. To gather these words, participants stood in a circle along with R-YCSs and in turn one participant said a word to be included in this vocabulary, and then passed the turn to another member who had to choose another word, and so on.” (Italian case report)

In Hungary-B case, the CSS and LL processes brought together rural youth, other local people from the village, experts and urban stakeholders who cooperated to improve the community garden in the village. The soil of the plot has been substantially improved by learning and practising new soil management practices and resulted in a locally significant ecological impact. Moreover, the local garden has become a supplier of a vegetable box scheme in the nearby town that provided a new source of revenue for those villagers who participated in the gardening. A related significant impact is that the villagers are now connected to two networks of agricultural innovation: the Hungarian permaculture movement and the environmentally conscious urban consumers who source their vegetables in short food supply chains.

Hungary-A case has co-developed an online database of urban places that provide good services and resources for hard of hearing young people. At the national workshop, this resource database were presented to and discussed with experts of the local city administration. There might be a momentum to further develop this database by building on the new connections that were established by the YouCount CSS process with relevant actors of the local city administration and with the representatives of the deaf community. This database, acting as a reinforcing agent, carries the hope of influencing the awareness and actual behaviour of those service providers who are included in the database. It is also notable that case researchers experienced a change in their own personal practices “We identified significant aspects where our academic attitudes, values and functions were called into question and led to inner transformations. These points were: heightened body awareness through communication processes; the need for a trauma-informed research attitude; the role of time in power dynamics; the role of technology in communication and data collection and ‘slow science’.” (Hungary-A case – emphasis added)

The UK case reported an observed behavioural change: “...the adult stakeholders’ habit of taking action independently from young people has changed in the living lab...” Moreover, the CSS and LL processes provided an “opportunity to link findings to relevant policy- and decision-making in the city” that might contribute to a change in policymaking practices at the city level. A change towards more participatory policymaking in which the youth might find their voices and to which the youth could directly contribute. The potential for policy change in the long run is there.

### 2.3.2 Cross-case Social Innovation Impacts

A number of impacts were mentioned in several YouCount case study reports. It seems clear that the combined CSS and LL processes have brought some beneficial social impacts for the participants. Impacts were reported by all YouCount cases with regard to the following:

- Increased self-confidence of R-YCS
- Enhanced sense of accomplishment and pride by R-YCS
- Strengthened feeling of social belonging by R-YCS
- Establishment of new network constellations
- Importance of ‘research relationships’
- Enacting a relational approach to doing research
- Perspective change on youth
- Future collaborations inspired

We group the impacts mentioned above according to the participants who primarily perceive those impacts as changes at individual, group or societal levels and illustrate each by citations from the YouCount case study reports.

## What has changed for Y-CS?

### Self-confidence or “I am able to do it” feeling

*“The research team has always committed to ensuring that co-creation is at the core of all the work we do with young people. We facilitated sessions with YCS to discuss and identify what they would like to research and how. A pleasing outcome has been **witnessing the increased confidence** of some of our YCS: although some have always been quite vocal and confident, others have taken time to find their voice. However, at this point towards the end of our case study, **there have been clear, positive developments in their confidence** which we regard as an added benefit from the young people’s involvement with the research.”* (UK case report – emphasis added)

*“Another [R-YCS] emphasized the **transformation from a state of doubt to one of confidence**, stating: ‘In the beginning, I was like, «Shit, I can't come up with any ideas.» Look at where we are now!’”* (Norwegian case report – emphasis added)

### Sense of pride and accomplishment or feeling of making a difference

*“With few creative methods and games, the youth experienced that it was possible to simply create a change and contribute to creating change. The possibility of creating and designing innovation to solve the problem formulations they defined by themselves gave the youth tools to Do-It-Yourselfes. **They felt that they could make a difference...**”* (Danish case report – emphasis added)

*“The exhibition provided a tangible representation of the YCS’s work, leading **to a strong sense of accomplishment**. They expressed their initial doubts and uncertainties but were surprised by how far they had come. The opportunity to showcase their data and see the result brought about **a sense of pride.**”* (Norwegian case report – emphasis added)

*“...there are many things to improve and **we can contribute** to them...”* (Spanish case report – emphasis added)

### Feeling of social belonging or feeling of being respected and acknowledged

*“...another observed change refers to the **attitude of the broader community** of Forcella towards the topics of social inclusion and multicultural communities... (...) The event was titled ‘Con-vivere a Forcella: giovani narrazioni e progettualità condivise’ [Living together in Forcella: young narratives and shared projects]. During this event, (...) lots of youths from Forcella attended and took actively part”* (Italian case report – emphasis added)

*“Their [journalists’ and policymakers] participation in the forum and the media coverage, as well as the **experience of being heard and of their [youth’s] opinions being taken into account** has contributed to their [youth] empowerment.” (Spanish case report – emphasis added)*

*“Involving the students in actual projects and letting them define and develop problem statements and solutions **make them feel heard and seen.**” (Danish case report – emphasis added)*

## **New network constellations**

*“...another change stemming from the Living Lab experience refers to the **strengthening of the social network** in the local community. Indeed, the activities and exchanges of ideas and perspectives within Living Lab meetings allowed participants to reckon that there were other groups and individuals working on the same topics and within the same perspectives in their local community. This brought about the rise of synergic activities and initiatives to be implemented in the community because of their Living Lab experience, ending in a process of community development which is still ongoing.” (Italian case report – emphasis added)*

*“...some **establishments of networks and relations** were absent beforehand. These networks and relations are seen as social innovations because they create social transformation in the community, whether small or big and have/potentially will impact the youth's civic engagement” (Danish case report – emphasis added)*

What has changed for researchers?

## **The importance of the quality of relationships in research**

*“...a research where priority is given to the **quality of relationships, to empathy, relatedness and responsiveness**” (Hungary-A case report – emphasis added)*

*“In this new potential space of the LL, possibilities of **quality communication** were allowed to emerge rather than being resigned to states of simple consultation; and **spaces of empowered engagement** were provided, rather than dialogues within a framework of disempowered presence.” (UK case report – emphasis added)*

## **Relational approach to doing research**

*“...it is another kind of data and experiences. A substantial difference is that **we get much closer** to the youths and their daily lives. We get **thicker insight and understanding** of a larger part of their life world, and not just their response and answers to the research questions.” (Norwegian case report – emphasis added)*

*“...the researchers **take on another role** than just being a researcher. The researcher must also enter a pedagogical and teacher role to support flexibility and adaptability. Especially **taking the time** to secure that youth understand...”* (Danish case report – emphasis added)

What has changed for other stakeholders?

### Perspective change on youth

*“Policymakers (...) expressed their gratitude to the young migrants for sharing the learnings from the project and their own stories: ‘I would also like to highlight how valuable the testimony you have given is. We spend time in our offices, preparing decrees, signing documents. This helps us to **put faces and names behind the generalities.**”* (Spanish case report – emphasis added)

*“Involving various stakeholders in the planning and staging processes also **changed their perspectives** towards teaching and having dialogues with the youths. The co-design processes from the high school collaboration made the teacher aware of the positive sides of involving the field more actively in the educational material and making the students work with local problems.”* (Danish case report – emphasis added)

### Future collaborations are inspired

*“By bringing the ideas of the youth and thoughts a voice in the local political discussions, it has an opportunity to create an impact. ...the Danish researcher was invited to participate in the representation meeting to approve the local council's new district plan. From the plan, we can see an interest and awareness to support the youths in the area... (...) From the new district plan, we can see that **new relationships have been building**, and there is now a general interest from local politicians to do something for the young people in the area.”* (Danish case report – emphasis added)

*“...the LL process helped to create a **supportive network** directly linked to the LL – people got to know each other while sharing aims of the session and people **continued networking** outside of Living Labs”* (UK case report – emphasis added)

## ***2.4 Social Innovation from a Technological Perspective***

This section highlights the role of technology and digital tools in citizen social science (CSS) social innovation. The analysis of the nine youth-led and youth-centred CSS cases provides an overview of the impact of different digital tools, platforms and technological devices. Their use became widespread and normalised in daily interactions and research processes after COVID-19. The adaptation of these tools had both positive and negative effects on social inclusion, engagement, learning processes and interpersonal interactions. The analysis showed that the normalisation of technology can lead to digital fatigue – with young people opting for analogue, offline methods – and a digital divide – when certain members of the CSS research groups need further support in interacting with technology in the research process.

### **2.4.1 Digitally mediated inclusion, engagement and learning**

In the literature on technology and citizen science (CS), digital technologies and tools are often understood as mediating devices and software in research projects, enabling communication, connection and data collection from remote locations (Aristeidou and Herodotou 2020, Mazumdar et al. 2018). The participatory nature of social science projects might complicate the application because digital technologies and tools do not simply mediate observations over non-humans, as is predominantly the case in CS projects in the natural sciences, but involve humans as participants and subjects of the research process. The diversity of needs and experiences of human participants render CSS a more malleable and context-focused experimental research enterprise. Flexibility and adaptability occur when participants have a say in how technology and digital tools are used in their case studies.

As a pan-European CSS project of diverse national, regional and local contexts, YouCount provides qualitative observational data from ten cases on how the YouCount mobile application, digital software and collaborative digital tools (Facebook Messenger, Zoom, Miro, Jamboard, Kahoot, etc.) and supplementary hardware influence engagement, collaboration, learning and empowerment. In the following, we will analyse both constraining and enabling effects of digital technology and tools in the unfolding social innovations of YouCount.

Table 6: Overview of technology and digital tools applied in the ten YouCount cases

| Technology and digital tools  | Cases                        | Field of application   |
|---|------------------------------|--|
| YouCount App  | all                          | co-creation, data collection, co-learning                      |
| Smartphone, laptops   | AT, ES, HU-B, IT, LT, UK, SE | data collection, recording visual materials, co-learning       |
| Surveys   | LT, NO                       | data collection  |
| Online collaborative tools (Zoom, Kahoot, Mentimeter, Jamboard, Padlet) | all                          | research process, data collection, gamification, co-learning   |
| Design software (Photoshop, Indesign, avatarmaker)                      | LT, NO                       | dissemination, co-learning                                     |
| Digital camera  | HU-B, LT, NO                 | data collection, dissemination                                 |
| Analogue combined with digital tools (posters, design games, books)     | DK, IT                       | data collection, dissemination, research process, gamification |
| Supportive software and hardware (caption, microphone, hearing aid)     | HU-A                         | enabling communication   |

## 2.4.2 Digital tools and inclusivity

Digital tools, as often reported by case researchers (Austria, UK, Hungary-A, Sweden, Spain), enabled and enhanced interactions and supported organisational work, such as online meetings and live chats. The role of the web-based digital infrastructure became indispensable since it would otherwise be difficult or even impossible for participants to meet in person. Digital platforms and devices, unlike pen-and-paper-assisted, offline meetings, transcend national boundaries and can create space to bring together a diverse group of people across YouCount cases. The multicultural diversity created a space where the citizen scientists felt being part of something bigger than their local case research (Denmark, Italy, Hungary-B). During COVID-19, the practice of meeting and interacting online has gradually become normalised in everyday interactions. Video-calling platforms, collaborative boards and design tools have become indispensable tools for meditating and building relationships between participants online. In the Italian case, online meeting tools were not merely digital innovations, but became tools for empowering by enabling youth to participate in webinars.

*“A similar process of empowerment also happened thanks to R-YCSs’ participation in the webinars they had the chance to take part in with the whole YouCount team. Overall, these experiences allowed them to feel they were part of a bigger group and of the whole project.” (Italian case report)*

Digital technology and user-centred tools can have software and outlook designs that make their users feel engaged, included and entertained. The target user group varies in terms of technical

knowledge and ability to use digital tools in YouCount. Co-designing and co-testing the YouCount app have prevented some crucial challenges, but it also compromised the diversity of user experiences and skills. Although the SPOTTERON app has a number of feature designs suggested by the case researchers themselves, most cases (Hungary-A, Hungary-B, Italy, Norway, Lithuania, Spain, UK) experienced difficulties in applying the SPOTTERON app when it came to a diverse group of young people. The main challenge emerged when case researchers introduced the app to young people with disabilities. Apps and digital devices could sometimes work smoothly without any assistance, but in some cases, human and other kinds of technological assistance are inevitable to improve the research experience for the participating young people with disabilities (UK, Hungary-A). The UK case is one of the examples in which technology alone cannot mediate all relationships and research processes without the involvement of another human being to assist the participant in using the application.

*“The involvement of the disabled young person affecting their use of technology has been instructive to the researchers – and other young people within the group – at maintaining inclusivity and not creating barriers to involvement. This means ensuring that experiences offered can be offered to all and being adaptive, for example, using a laptop with the young person that could not use a phone and planning for a walk with someone accompanying to take photos of what they wanted so that they can contribute their perceptions.” (UK case report)*

The YouCount CSS experiences show that researchers and social workers need to create a safe and inclusive environment for app usage by adjusting the research situation to the participant's needs. To make research processes accessible and available to all, a universalised technology design may fail to work without proper educational and need-based preparation. This empirical finding shows that technology in itself is not a neutral artefact as it can recreate and reinforce unequal opportunities in accessing and using digital tools.

### 2.4.3 Digitally mediated social relations

Digitally mediated innovation might not be engaging enough if there is no audience for witnessing and following the unfolding transformations, narratives, personal stories and research outputs. The YouCount cases' experiences show that social media and online tools as digital platforms can provide visibility and easy access to what the youth might be proud of. Therefore, digital visibility and accessibility create motivation for the youth to stay committed in a project that is receiving attention and support from various stakeholder followers.

In many cases (Austria, UK, Denmark, Hungary-A, Italy, Spain), social media, chat-based applications, and university and organisational online platforms became important platforms for internal and external communications. Digital tools contributed to recruitment achievements and assisted researchers in keeping both R-YCS and stakeholders engaged. The Danish case study illustrates well how various stakeholders could engage with the core research team on social

media platforms. Sharing publically the research team's daily work, events and outputs on social media was successfully reaching out to their target groups.

*"Throughout the project, we have used Instagram as a platform to communicate the Danish casework locally, where we have updated our followers with news, upcoming events, and results. Today the profile has 109 followers. The primary followers are youth organizations and local stakeholders, but this brings attention to the work of the youth and the challenges and possibilities they experienced through the collaborations." (Danish case report)*

Youth, due to high visibility, felt it was important to be engaged in an EU project like YouCount. To forge social connections and reinforce existing ones, digital technology assisted youth to place their perspectives and narratives through digitally via mobile cameras, professional cameras and other digital tools. Shared pictures, pictures prepared for exhibitions, videos and digital maps can transmit messages, views, perspectives, and stories about their unfolding social innovations and research processes. In certain cases (UK, Hungary-B, Hungary-A, Italy, Spain), digital technologies were available and applicable to youth for visual communication purposes; to reach out and show their narratives, innovation processes and findings to researchers and other stakeholders.

In the UK case, digital technologies turned out to be effective intermediaries of intergenerational communication through producing visual materials.

*"A key finding has been of the desire of young people for older generations to understand their perspective, while also initiating greater intergenerational conversations and communication that include learning more about the city's heritage. This vital 'storytelling' may be developed through this use of technology, combining with outcomes from the App." (UK case report)*

In the Italian case, videos were taken to show the youth perspective within the Living Lab meetings.

*"As to the Living Lab experience, technology was mainly used for the creation of the final video, through which participants endeavoured to spread their positive experience as an example of a "good practice" as well as the shared vision they had developed about social inclusion processes and dynamics across the meetings." (Italian case report)*

Further visual methods were mobilised in the Italian case when the youth created a virtual map of the local area they were engaged with.

*"...they were also used for producing a virtual map of the area of interest for the local case. This map served for reckoning the associations and other groups being active in that area, as well as the services and Institutions. Moreover, it was used as a 'visual repository' of the gained information about the projects and initiatives already existing in that area by the research group." (Italian case report)*

## 2.4.4 Digitally mediated gamified learning

Digital technologies and tools can thus create a positive, shared experience among participants if they are properly chosen and adapted to the needs of the users. All cases reported how digital technologies (e.g. mobile cameras, apps) and online tools (e.g. Zoom, Kahoot, recording and transcription programs) created a fun and playful atmosphere where research and group work seemed more like a game. Personal digital technologies (e.g. mobile phones, recorders) rendered the interviewing and researching process possible for all participants (Italy, UK, Hungary-B, Lithuania). A more engaging, creative and visually representative (e.g. photos, videos, exciting) process was born with the application of the selected technologies the youth enjoy using (Denmark, Norway, UK, Hungary-A, Hungary-B, Italy, Spain).

Digital extension programs and personalised mobile devices enabled youth to be familiar with research techniques and use technologies themselves for research purposes.

*“Recording videos of interviews and focus group discussions with accompanying transcripts has been useful for data analysis made retrospectively by young people. This has included training from researchers including learning to code and group emerging themes.” (UK case report)*

*“We have used Microsoft Forms for co-creating surveys aimed at youth and stakeholders, polaroid cameras for documenting and showcasing subjectivity and performativity among the youth and the stakeholders.” (Norwegian case report)*

Although the SPOTTERON app received several critiques, it received recognition from R-YCS in terms of learning opportunities. In the Danish case, one of the participants evaluated the app as follows:

*“Something I liked about the app, was when we uploaded a spot the app asked how safe you felt in this specific area, and this made you think about things in a different way” (Danish case report)*

Another unexpected learning experience related to the SPOTTERON app was closely linked to research and digital ethics. Ethical considerations are pillars of a research project. It is a necessary bureaucratic process that enables researchers to conduct ethical, fair and safe research. Young people, as subjects rather than co-designers of a research project, are often left out of the administrative burden of a research project. During their interaction with digital tools and the SPOTTERON app, in many cases (UK, Hungary A, Spain, Norway) the participating youth learned about research and digital ethics, such as data collection and GDPR. In the case of ethics, digital technology such as the YouCount mobile app, provides an interactive, experiential learning experience for young people.

*“It was interesting to discuss ethical constraints of research projects with the YCS and to share perspectives. For example, not sharing identifiable images of people was a necessary ethical*

*consideration but which differs with the very open use of social media that can form part of a group experience and response to being in a particular setting together.” (UK case report)*

## 2.4.5 From digital fatigue to in-person analogue tools

While digital technology and tools might be comfortable and decodable mediators for youth, the digital native generation might bring the opposite effect to a project. In the Danish case, where high school students very frequently interact and learn via technological support, they welcomed and appreciated creative, offline and analogue methods. The case researcher brought in the research group analogue tools that triggered their creativity. Students appreciated getting away from their computers and screens, which they are used to.

*“It's been exciting and a different way of being taught, which is good for me, and getting out and being creative, instead of just sitting on your flat ass.” (Danish case report)*

*“I mentioned that it is good that they get some paper to write on, as it works well, and you think in a different way than when you are sitting at the computer.” (Danish case report)*

*“We worked with analogue maps along the digital map in the App, and the R-YCSS have through these techniques increased their map skills and understanding of the spatial context of the neighbourhood and district.” (Norwegian case report)*

## 2.4.6 Digital divide

The digital divide was a challenge in cases where diverse backgrounds and needs of participants come together in one research group (Hungary-A, Italy). Where support is available to use digital technology, information and communication channels via technologies can reach many, but also leave behind those who are not familiar with ICT in general. Cases facing the digital divide, apply mixed, analogue and technology-based methods of dissemination of project information (Italy, Denmark), and organised face-to-face meetings with live translation available for hard-of-hearing youth (Hungary-A).

*“However, some migrant youths emphasised how the use of flyers posted in places where people live, such as grocery shops, could also have a strong dissemination power, highlighting how technology helps and facilitates encounters for those accustomed to its use, but cuts off those not characterised by a technological spirit.” (Italian case report)*

## 3. The Role of Citizen Social Science

In the literature on citizen science (CS), there are claims to “*consider citizen science as both (1) social innovation in research and (2) an innovative way to develop and foster social innovation*” (Butkevičienė et al. 2021, p. 309). The innovative potential of CSS lies in reconfiguring the relationship between science and society; an innovative institutional solution for a dynamic science-society interface. CSS clearly enacts a different research design and processes of knowledge production compared to conventional social science research with regard to the actors involved (multiple actors as relevant knowledge-holders), their roles (active roles, incl. citizens as co-researchers) and the timing and extent of their engagement (deliberative and participatory components). The diverse practices of CSS promises innovation in science-society relations: “*If the field of citizen science remains diverse, open and supportive for the manifold forms of cooperation between citizens and scientists we can benefit from the numerous potentials it holds for science and society*” (Schäfer and Kieslinger 2016, p. 1-2).

Furthermore, in the CSS process multiple actors (but most prominently, citizens and professional researchers) work together towards exploring, understanding and solving issues of societal relevance. Consequently, one of the main aims and outputs of CSS is the production of new knowledge that is actionable and, therefore, can be used to enact positive social change. In this sense, CSS can serve as a tool for social innovation.

This chapter summarises the YouCount cross-case analysis findings related to CSS as social innovation and CSS as a tool for social innovation, respectively, based on the reflection provided by case researchers in the chapter of “The Role of CSS” in their case study reports (see Appendix 1 for the structure of the report). It is inevitable that the following will build upon, partly repeat some of the findings reported earlier but it also brings a different light on the YouCount cross-case findings.

### 3.1 CSS as Social Innovation

Based on the cross-case analysis of YouCount hands-on CSS cases, CSS as social innovation can be seen in two respects, although their separation serves mainly analytical-presentational purposes. One of the socially innovative potentials of CSS lies in the social inclusion process that it enacts and enables through its research practices. The other socially innovative aspect of CSS is that its research practices embody a relational approach to doing research.

### 3.1.1 CSS as a social inclusion process

Many YouCount case study reports argued that CSS itself was experienced as a social inclusion process by many participants. This inclusion unfolds, or being experienced, in the co-creative and participatory processes of CSS where participants may develop a feeling of belonging – belonging to a(n international) project of societal relevance, to other R-YCS, to researchers and academic organisations, and eventually to their own neighbourhood and local community.

*“They automatically feel heard, like they matter, and **like they belong due to the sheer nature of the project**. Making them the centre of the project gives them a sense of empowerment. By adding stakeholders, they feel valued, like they can have a meaningful impact, and feel appreciated”* (Austrian case report – emphasis added)

*“We learned from the empirical case of including **CSS in an educational setting** that applying research methods to a natural science class **can be inclusive**. The students found it engaging to be part of an actual project, contributing their knowledge, and working with researchers”* (Danish case report – emphasis added)

*“...as [the youth’s] personal points of views were given centrality and listened to for the construction of unique project paths shared by the group, aimed at establishing multi-ethnic communities and promoting the togetherness in Forcella through activities that connect people, enhancing mutual knowledge. Participants were able to voice their needs and opinions in participating in change for the community, thus feeling socially and civically involved at the local level...”* (Italian case report)

*“It also **makes them feel that they can be agents of change**. In the final forum, one of the R-YCS expressed that he would like to participate in more citizen science projects”* (Spanish case report – emphasis added)

### 3.1.2 CSS as a relational approach to doing research

CSS as a relational approach to doing research was found emerging from the YouCount case reports. The YouCount case researchers acknowledged that, compared to conventional social science, CSS brings “something different,” more personal and subjective (than usually felt in conventional social science research) since researchers feel related to the youth. The youth as co-researchers and experts of their own experience of social inclusion bring their life worlds into the research and professional researchers are confronted these life worlds and cannot escape “getting closer” to the youth (giving more time to their relationships to develop and strengthen). In many instances of YouCount hands-on CSS, caring relationships (not at all typical to research relationship in conventional social science) are being developed and entertained between the professional researchers and Y-CS.

*“We got something different than if we had carried out the project on our own. We neither see the result as less good or better, but it is another kind of data and experiences. A substantial difference is that **we get much closer to the youths and their daily lives**. We get thicker insight and understanding of a larger part of their life world, and not just their responses and answers to the research questions” (Norwegian case report)*

It is clear from the long description cited from the Lithuanian and Hungary-A case reports how much energy researchers spend on thinking and doing relationally:

*“Once the young people who expressed an interest in taking part in the project had been identified, the aim was to motivate them by adapting to their communication style, with the aim of creating an informal, welcoming and open culture of communication. Motivational factors included visual material, video screenings, open lectures, discussions and seminars, a large number and variety of visual information leaflets with attractive content for young people about scientific and cultural activities and opportunities in their district and in Kaunas, the awarding of Certificates of Participation, and the sending out of complimentary comments and ‘thumbs ups’ to those who took part in the activities of the application. In order to strengthen the motivational culture...” (Lithuanian case)*

*“One of the most important dimensions in CSS is to **make it personal and meaningful**, so that participants can feel that is really about their life, they can relate to it, it is not an abstract process ‘for the sake of science’. Another very important aspect is that it works if participants enjoy doing it, receive something. For most people, especially youth, collecting data or participating in something which has an abstract or alienated purpose is not motivating at all. CSS could not work without providing a community where participants want to belong. Sometimes it seemed, that **this belonging is the main driver** for our R-YCSs” (Hungary-A case report – emphasis added)*

*“**Relationships** were a central theme of both the research relating to belonging, but also in **the main value that the YCS saw in the CSS approach**. The mentoring relationship was perceived to be supportive, empowering and encouraged further time and commitment from the YCS, who were juggling a number of commitments” (UK case report – emphasis added)*

### 3.1.3 Limits to CSS as social innovation

However, some cautionary notes are also needed. It is not at all clear whether all young people in all social contexts see science in general or CSS in particular as something which is attractive, interesting, and can benefit them if they engage with it. Hungary-B case clearly referred to the complexities and difficulties of this challenge:

*“We tried to put forward an extreme citizen social science project **with a group of extremely disadvantaged rural Roma youngsters within an extreme political system...**” (Hungary-B case report – emphasis added)*

The challenge of an unfavorable socio-cultural context was also emphasized by several partners. This includes the general feeling of disempowerment and discouragement (Italian case), a widespread distrust among stakeholders, that had negative or disappointing experience about existing institutions and organizations (Hungary-A case), and comparatively low interest in citizen science activities and the topic in society at large (Lithuanian case).

In addition, science as currently institutionalised expects non-professional scientists to volunteer and work together with paid professional scientists in citizen science projects and this can clearly create serious challenges and constraints to an inclusive CSS:

*“...in marginalized and vulnerable populations, voluntary work is in many cases a luxury, we have to consider the actual socio-economic environment, otherwise we – as academia – just again exploit these groups in a sophisticated way”* (Hungary-A case report)

Norwegian case reported that the financial support systems are not designed for youth engagement: *“...it has showed us in real time how youth are normally not socially included in employment systems and structures, and thus the need for policy change has emerged as more urgent than we thought from the outset”*.

## 3.2 CSS as a Tool for Social Innovation

Across the YouCount cases some issues emerged that demonstrate the potential of CSS as an instrument for assisting social innovation. These themes are labelled as creativity, democracy, empowerment, sector-based innovative potentials. In addition, technology mediation as a paradox is presented on a critical note.

### 3.2.1 Creativity

The YouCount cases reported that the CSS process required a lot of flexibility and responsiveness to adapt to the needs of participants (primarily, R-YCS) and the specific contextual conditions. Generally, the process required an experimental approach that created spaces for creative explorations and expressions. This way, the sharp and relevant insights of the youth could be formulated and channeled through the application of multiple methods, technologies, and tools.

*“...it is seen as highly relevant to involve **the youth** activities because they **can contribute with knowledge that older people cannot develop**. The possibility of getting together in research teams to discuss, reflect, and negotiate makes the students move further than if they were working alone...”* (Danish case report – emphasis added)

*“Professional researchers found it often profound how the **young people arrived at a different, very relevant and sharp observation** or experience in discussion or analysis (e.g. of survey results). The experiences of young people at their life stage should not be second-guessed, even with the best intentions. The inclusion of **young people in the Living Labs brought fresh ideas, innovative approaches, and alternative viewpoints to problem-solving discussions.**”* (UK case report – emphasis added)

### 3.2.2 Democracy

The YouCount experience with hands-on CSS brought a lesson as an implementation of the ‘school of democracy.’ The CSS and LL processes were implemented in a participatory fashion, providing space and time for dialogue and deliberation among diverse actors. Roles have often changed (young people taking leading roles at events), with a consequence for decisionmaking power (e.g. resulting in youth-led research agenda).

*“...LL as a method of effective dialogue and participation for young people with stakeholder decision-makers - or even more radically, **the process of transforming decision-makers into decision-facilitators, with the young people embodying a new decision-making process** - has been the ambition of the YouCount team (UK). As a process where participation is key (and where observation by qualified academic researchers has a lesser role), the LL (UK) has aspired to truly innovate decision-making, and therefore inclusivity. Combining the ethos of co-creation in research with the LL aspiration of democratic participation proved a challenge, with both successes and obstacles yet to overcome.”* (UK case report – emphasis added)

It also seems that stakeholders involved in the living labs has experienced their usual expectations changed, giving more space and time to listen to and learn from the youth as an important democratic practice.

*“The stakeholders seem to see the benefits of using youth citizen science as twofold; they welcome the viewpoints of the R-YCS as simultaneously experience based and research inspired knowledge, and they seem **more patient towards getting ‘results’** from the project than we are used to.”* (Norwegian case report – emphasis added)

### 3.2.3 Empowerment

The YouCount experience with hands-on CSS provides a lesson that CSS features a potential for social innovation in the sense of empowering actors (in our cases, the youth at risk of social exclusion) who are typically left out from defining and solving social problems and, consequently, their lived experience and their active agency as valuable assets are left untapped. CSS can mobilise these actors and their capabilities through providing safe spaces for their agency in exploring, understanding, and solving social issues in their immediate communities.

*“Knowing the social dynamics also made the youths realize that small changes can create significant transformation. **The possibility of creating change was motivating** for the work and engagement of the youth as Citizen Social Scientists.”* (Danish case report – emphasis added)

*“Y-CSS, C-YCSs and R-CSS had the opportunity to access more structured paths to planning, relying on more organized skills, that gave them the chance to interact with bigger and more stable groups and associations and to collaborate with them even outside the Living Lab experience. This **increased empowerment level of youth**”.* (Italian case report – emphasis added)

### 3.2.4 Sector-based innovative potentials

Some of the YouCount cases explicitly worked with and influenced some sectors, incl. agriculture (Hungary-B case), education (Danish case), employment (Norwegian case) where CSS demonstrated its potential to contribute to the emergence of social innovation.

Hungary-B case linked the rural youth interested in agriculture to existing networks of sustainable agriculture experts through study trips, training sessions, and joint agricultural activities. This learning process has resulted in re-connecting a socially isolated community with middle-class urban consumers and highly educated experts which is not typical in alternative agriculture networks (e.g. community supported agriculture, vegetable box schemes, etc.), at least not in the immediate Hungarian context.

The Danish case reported that CSS brought valuable competencies, such as critical thinking, to high school students. *“...through the collaboration with the high school, we learned that giving the youths tangible tools to investigate their local environment and define problems from what they saw and experienced created a more actionable and problem-based approach to teaching. The approaches and more project-oriented teaching were valuable in creating a reflection, exploring, and making the methods and projects more concrete and actual”* (Danish case report – emphasis added). The Danish case thus provides an example of the potential of CSS to contribute to change in educational practices by renewing pedagogy and teaching on sustainability issues.

The Norwegian case shows an example of how CSS can be a tool for innovation in the field of employment. The CSS process enacted in the Norwegian case developed a set of criteria that are critical for the youth’ feeling socially included through their jobs. *“In one of the stakeholder-associated youth interviews before LL2 [second meeting of the living lab], at the City Library, in their new building in the Bjørvika harbour area, our adult contact person and LL participant, told us that they had started a new social innovation since LL1 [first meeting of the living lab]: the Bjørvika Crew. This was inspired both by another municipality’s work on youth inclusion and employment in the cultural sector, and from discussions in Living Lab 1.”* (Norwegian case report – emphasis added)

### 3.2.5 Technology mediation as a paradox

In the YouCount case studies, a sense of belonging and empowerment sometimes emerged when technology and digital tools were applied. Paradoxically, however, the digital tools used had the opposite effect of contributing to or slowing down social innovation actions and processes.

On the one hand, technology and digital tools sometimes motivate R-YCS, C-YCS and even stakeholders as Living Lab members to participate in research and dissemination processes actively, create space and time for learning and skills development, and even contribute to a sense of belonging and being part of an international, meaningful project.

On the other hand, R-YCS, C-YCS and researchers can quickly lose their initial enthusiasm due to undesirable design, purpose and impact of technology and digital tools. These tools can exclude some participants, especially those living with disabilities, from enjoyable experiences and shared learning moments and may further induce digital and online fatigue.

## 4 Conclusion

The social innovation analysis of the ten YouCount hands-on CSS case studies has brought some lessons that might be of interest to social innovation policy, practice and research, as well as for social inclusion policy, practice and research.

It is clear from the process analysis that the YouCount hands-on CSS cases enacted research processes that are different from conventional social science research in many respects, although there is a lot common with other participatory research traditions, including primarily participatory action research that was referred to by most of the YouCount cases as a methodological approach.

The process approach to social innovation analysis highlighted that the concept of social inclusion, and related terms, might be creatively renewed and re-interpreted if diverse knowledge-holders, including primarily those who possess lived experience of social inclusion/exclusion, are provided space and time to meet, discuss, negotiate, and act together. This seems to provide lessons beyond research practices and may point to the need for creating interfaces for science-society-policy to meet in an open and responsive setting that supports their creativities. In a very positive sense, the meeting of 'differences' may produce new solutions and, at the same time, re-configure power relations towards more social equalities.

Beyond the new narratives and vocabularies our societies might need to develop to creatively deal with social inclusion, CSS might be seen and, more importantly, practised as a social inclusion process itself. CSS might be a potential way of institutionalising social encounters that are lacking

in today's societies, very importantly across generations. The impact analytical perspective on social innovation reinforced the findings that these social encounters are the sites for joint acknowledgements of our and others' agencies (i.e. positive contributions to our communities). Creating these inter-generational and other (e.g. transdisciplinary) relationships is something very important that CSS might offer.

However, this may well need a different temporality to be enacted and institutionalised. Temporalities are not the same and the YouCount cases highlighted the lesson that time needs to be devoted to find our common rhythms in a co-creative process where everyone involved feels comfortable. This might only come through conflicts but the YouCount experience with hands-on CSS seems to point to the possibility to find temporalities that are more inclusive for many actors. A different temporality might also support us to find ways out of the paradoxes experienced with technologies applied.

Our social innovation analysis followed a relational perspective on social innovation. The YouCount cases consistently reported that implementing CSS, combined with a living lab (LL) approach, was primarily about forming new social relations among multiple actors. These new relations and social connections were formed among social groups and actors that often lack the possibility for meaningful social encounters. This lack of social encounters might contribute to our societies being fragmented and socially excluding. In this sense, the social innovation potential of CSS might be understood, based on the YouCount cross-case experience, as a collective effort for 'social repair.' Repairing inter-generational disconnections, repairing social fragmentation, and the lack of social encounters between the 'differences.'

To put it more positively, the relational perspective on social innovation brings our attention to the significance of creating new networks for social inclusion or connecting the socially excluded ones with existing social networks that they appreciate and perceive to be useful. Though it might sound instrumental (i.e. knowledge and other resources are tapped via networks), being socially connected and being part of well-functioning social networks seems to be significant to be felt acknowledged, recognised, and appreciated by society. The youth has a need to feel this appreciation by older generations who are usually embedded in diverse social networks. Young people's individual and collective agency might better unfold in those inter-generational social networks and may bring new energies to social innovation.

The YouCount case studies, as hands-on CSS processes, provided space for social inclusion. Opening up science to the youth by engaging them as co-researchers may provide the youth with an important space for feeling socially included. The micro processes of face-to-face interacting with scientists and stakeholders may not only contribute to the very subject matter under study, namely, youth social inclusion but to changing research practices towards ones that give importance to relationships. Science as a social practice may need to be reflective whether its own

practices are socially inclusive and may provide a model for a better social functioning where connections are made and re-made for strengthening social relations and social integration.

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# Appendixes

Table 7: Appendixes

| APPENDIX   | SUBJECT                          | PAGE |
|------------|----------------------------------|------|
| Appendix A | Final Case Study Report Template | 43   |



# YouCount Case Study Report

## Final Template

|  |                                 |
|--|---------------------------------|
| <b>Title</b>                               |                                 |
| <b>Authors Name and Affiliation</b>        |                                 |
| <b>Work Package producing the document</b> | WP3                             |
| <b>WP Leader</b>                           | ESSRG                           |
| <b>Other Partners involved</b>             | UCLan, UNINA, KTU, FD, OsloMet, |

2023



This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 101005931



## Table of Content

### Contents

|  |                                     |
|--|-------------------------------------|
| 1. INTRODUCTION  | <b>ERROR! BOOKMARK NOT DEFINED.</b> |
| 1.1. Outline of the Case Study.....  | <b>Error! Bookmark not defined.</b> |
| 1.2. Outline of the Living Lab.....  | <b>Error! Bookmark not defined.</b> |
| 1.3. Summary Findings from State-of-the-art Literature Review .....  | <b>Error! Bookmark not defined.</b> |
| 1.4. Reflections on Case Experience with Implementing Youth Citizen Social Science .....                                   | <b>Error! Bookmark not defined.</b> |
| 2. METHODOLOGY   | <b>ERROR! BOOKMARK NOT DEFINED.</b> |
| 3. SOCIAL INCLUSION - OPPORTUNITIES, ISSUES AND DRIVERS  | <b>ERROR! BOOKMARK NOT DEFINED.</b> |
| 3.1. Introduction.....   | <b>Error! Bookmark not defined.</b> |
| 3.2. Data and Analysis of Young Peoples' Views and Experiences on Social Inclusion and Social Inclusion Opportunities..... | <b>Error! Bookmark not defined.</b> |
| 3.2.1. Meanings of the concept of 'social inclusion' in your case .  | <b>Error! Bookmark not defined.</b> |
| 3.2.2. Critical issues for young people's social inclusion .....   | <b>Error! Bookmark not defined.</b> |
| 3.2.3. Opportunities for social inclusion in young people's daily lives .....  | <b>Error! Bookmark not defined.</b> |
| 3.2.4. Young people's suggestions to better means and policies that would increase young people's inclusion .....          | <b>Error! Bookmark not defined.</b> |
| 3.3. Data and Analysis of Positive Drivers for Social Inclusion.....   | <b>Error! Bookmark not defined.</b> |
| 3.4. Analysis of Gender Dimensions.....  | <b>Error! Bookmark not defined.</b> |
| 3.5. Summary of New Knowledge on Social Inclusion .....  | <b>Error! Bookmark not defined.</b> |
| 4. SOCIAL INNOVATION ANALYSIS  | <b>ERROR! BOOKMARK NOT DEFINED.</b> |
| 4.1. Introduction.....   | <b>Error! Bookmark not defined.</b> |
| 4.2. Social Innovation Dynamics.....   | <b>Error! Bookmark not defined.</b> |
| 4.3. Social Innovation Impacts .....   | <b>Error! Bookmark not defined.</b> |
| 4.4. The Role of Technology .....  | <b>Error! Bookmark not defined.</b> |
| 5. DIALOGUE FORUMS WITH LOCAL YOUTH  | <b>ERROR! BOOKMARK NOT DEFINED.</b> |
| 6. THE ROLE OF CITIZEN SOCIAL SCIENCE  | <b>ERROR! BOOKMARK NOT DEFINED.</b> |



# YouCount

Youth Citizen Science

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