Co-inform

Context Matters,
Your Sources Too

Pilot Requirements and Service Design

D1.2

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Document Summary Information

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Executive Summary

The main objective of this document is to serve as a Pilot Manual and provide guidelines regarding Co-Inform activities, stakeholder requirements, and details on the design and plans of all pilots.

Three Pilots (in Austria, Greece, and Sweden) will be launched, that will serve to demonstrate the effectiveness and relevance of the project outcomes, in both the methodological and on the socio-technical front. Under the general theme of migration, the pilots' aim is to build an environment in all three countries where stakeholders will be enabled to co-create useful tools for combating misinformation. These tools will aim at detecting, tracking, and predicting patterns of misinformation spreading. The pilots will allow researchers and stakeholders to engage in an iterative feedback, validation and testing process of Co-Inform outputs.

Data from the pilots will be collected mainly through co-creation workshops and will be complemented via other methods such as surveys, interviews, and focus group sessions. The co-creation workshops' aim is to engage a diverse group of stakeholders in three categories: citizens, journalists/fact-checkers, and policymakers. This will allow each category to give their own understanding and perception of the problem, co-create sociotechnical tools, give feedback, and inform policy design.

The first workshop will assess stakeholders' views, needs, identify the gaps that need to be addressed, and gather initial stakeholders' recommendations for policies and design. The second workshop will elicit feedback on a prototype design based on those recommendations; the third workshop will elicit more feedback about a functioning product, while the fourth will gather stakeholders' views of the improved functioning version based on the previous iterations of feedback.

Table of Contents

Table of Figures

List of Tables

Abbreviations and Acronyms

CUT	Cyprus University of Technology
DoF	Degree of Freedom
DR	Direct Rating
GBV	Austrian Federation of Limited-Profit Housing Associations
GDPR	General Data Protection Regulation
ICT	Information and Communication Technologies
IOM	International Organisation for Migration
LHPS	Limited-Profit Housing Sector
OU	Open University
PA	Point Allocation
SU	Stockholm University
UKOB	University of Koblenz-Landau
UNHCR	United Nations High Commissioner for Refugees
WP	Work Package

1. Introduction

Misinformation and malevolently manipulated news imperils the functioning of democracies and societies at large. It does so by inciting social conflicts, creating mistrust among citizens, authorities, and media; as well as by affecting citizens' perception of reality. The alarming speed of dissemination of misinformation through social media, internet, and instant messaging prompts for an innovative solution that is both proactive and efficient (Barclay, 2018; Baron & Crootof, 2017; Juhász & Szicherle, 2017; Newman, Fletcher, Kalogeropoulos, Levy, & Nielsen, 2017).

The main aim of the Co-Inform project is to understand the phenomenon of misinformation and its influence on perceptions of such a complex process as migration. Understanding this phenomenon will allow Co-Inform to embolden society's resilience towards misinformation, empower citizens, journalists and policy makers with the necessary tools to counteract the negative consequences and foster informed behaviors and policies.

The recent surge of newcomers' and asylum seekers' arrivals from conflict zones has been a cause célèbre that sparked fear, public debate, division, and despondency. Most of the ongoing debate is fueled by misinformation and wrong assumptions rather than facts. In Greece for instance, rumors claim that the government has granted residency permit to half million-asylum seekers. In Sweden, rumors claim that new arrivals have caused a surge in rape crimes and criminality in general. In Austria, rumors were also connected with perceptions that behavior of migrants affects safety and stability of the Austrian society. The issue of misinformation around new arrivals is as such a threat that necessitates action and deserves considerable attention. Therefore, the major focus of the Co-Inform project is on immigration as a misinformation topic (Juhász & Szicherle, 2017; Rosales, 2013).

The project will endeavor to achieve its goals through raising the awareness of private citizens and the communities towards the misinformation phenomenon in terms of sources, content and managing strategies. The project aims to invite different stakeholders (citizens, journalists and policymakers) to engage together in order to co-create tools that enable the detection, tracking and prediction of the patterns of misinformation spreading. Moreover, the project will study and predict patterns, pathways and demographics of misinformation with the goal to research internet echo chambers and ultimately provide policy makers with advanced misinformation analysis tools.

In particular, Co-Inform aims to:

- Bring together an interdisciplinary team, and a set of interconnected research and development entities, to foster citizens' misinformation-resilience through:

- The creation of intelligent Information and communication tools for collecting, filtering, analyzing, and aggregating misinformation, and validating them by matching it with corrective information reports from fact checkers.

- Fostering community competence, by increasing misinformation awareness, and supporting policy-making with advanced big data analytics and socio-technical tools.

- Increasing social capital, by exposing social networks to differing perceptions and to corrective information that echo chambers overlook, and by engaging citizens, journalists, and policymakers to co-create a shared understanding of facts.

To achieve the above goals, Co-Inform will launch three pilots. These will serve to demonstrate the effectiveness and relevance of the project outcomes, be they methodological or technical tools. All three pilots will focus on the theme of migration and how the spread of online misinformation affects different narratives for different stakeholders. To further nuance this analysis, each of the pilots will select a specific area within migration, ranging from housing to education, which will be determined during the problem identification and needs analysis phase of co-creation.

2. Objective

The main objective of this Pilot manual is to provide detailed guidelines regarding Co-Inform activities, the stakeholder requirements, and the details of the design and plans of all pilots in the respective piloting countries. The manual defines the main timeline and the expected outcomes. The goal is to enable for a common understanding of the needs and perceived solutions to the identified problems to emerge from the stakeholders. The following steps will be to engage the stakeholders in the design process for the Co-Inform platform as well as in an iterative validation and testing process of the technical solutions that are designed in close response to the feedback gathered during workshops.

For the methodological framework, theoretical insights and guidelines on co-creation workshops, please refer to the deliverable D1.1; for the ethical and legal framework, please refer to D1.1 (Section 6), the Data Management Plan (D 7.1) and the Swedish Ethical Vetting Approval as well as Annex 2 attached in the current document's appendix: Multi-criteria decision analysis and its application in frames of the Co-Inform project.

3. What are the Pilots?

Pilots will build a co-creation environment in all piloting countries to enable stakeholders to 'create' together, in equal terms and resources. The pilot is consisting of multiple activities rather than a single activity to provide a testbed for the Co-Inform policies, tools and platforms.

The pilots will collect data mainly through co-creation events and will be complemented via other methods such as surveys, interviews, and focus group sessions. The co-creation events will bring together a diverse group of stakeholders (citizens, journalists and policymakers). They will give their own understanding and perception of the problem, co-create sociotechnical tools, give feedback, and inform policy design within WP2. The stakeholders will also guide the technical development of platforms and tools in WP4 and evaluate the impact of these tools within WP5. In a sentence, the pilots will gather participants in co-creation workshops to inform policies and design the Co-Inform tools.

The pilots will support Co-Inform's goals by providing the controlled environment where experimentation can take place through the testing of misinformation scenarios that have the potential to cause societal divides. This will be undertaken using an agile methodology for

progressively piloting the outputs of the project, while providing the flexibility required for co-creation environments. As such, the pilots aim to engage closely and regularly with stakeholders, in real-world scenarios and local environments, to co-create, use, and collect feedback on:

- Policies for managing misinformation in social media (WP2)
- Tools for detecting and monitoring misinformation content and patterns (WP3)
- Platforms for raising awareness and encouraging misinformation---resilient behaviors and perceptions (WP4).

Data from the pilots will be continuously gathered, processed and analyzed. Since feedback and new scenarios may emerge, the pilot plan will be adaptive to allow for improvement, gaps in application, and most importantly to be responsive to stakeholders' needs.

The pilot will receive input from:

- Platform development (WP4).
- Co-Inform misinformation management policies (WP2).
- Automated misinformation detection and tracking tools (WP3).
- Stakeholder engagement support (WP6).
- WP5 evaluation tasks.

Output:

- Early pilot usage scenarios
- Pilot plans deployments
- Training of key stakeholders
- Piloting results to WP5 for evaluation.

4. Stakeholders

Participants or stakeholders are the backbone of the pilot events; therefore, they will be mapped with a thoughtful and a balanced approach. The main idea is to engage a sample that represents the diverse landscape of the stakeholders and can contribute to different ideas and perspectives from various angles. In each pilot a number of around 25 participants will be engaged from the three main stakeholder groups. It is recommended that the number of invitations may be higher than the target number of 25 so that pilot teams ensure that the participants expected to come can be in the target range of 20-25.

4.1 Citizens

A representative sample of the affected population will be sought, in the age range between 18 and 24, mainly made of native citizens, first and second-generation immigrants and newcomers. Age range of 18-24 is preferred as they are digitally active (in the sense of social media) and are the most probable victims of misinformation (Marchi, 2012). The exact geographical area or location will be defined by the pilot manager in each country according to the context of the pilot. Gender diversity should be emphasized. The suggested number of participants in this category is **10-12**, distribution of citizen subgroups can be as follows:

- Citizens who were born in the country to native parents: these are the majority of the population in each country and the target users of the project. However, these numbers can be adjusted according to the local pilot Country context.

- First and second-generation immigrants and refugees: the exact definition of these terms may differ. However, it refers here to immigrants who are born to immigrant parents and to immigrants who spent a significant time in the country in terms of decades.

- Newcomers: this group represent the recently arrived immigrants (<5 years in the country). It might also contain NGOs acting in the field of interest. It is understandable that this group may be more diverse from a pilot to the other.

4.2 Journalists/Fact-checkers

Two groups are represented here, journalists and fact-checkers, and the suggested number of participants is **8.** Members of this group need to be balanced - as much as possible- in terms of dependent and independent journalists and fact checkers. Care should be made to solicit legacy newsroom and journalists who are working for national newspapers in addition to independent journalists. It is worth noting that a journalist might be a reporter, a fact checker, and at the same time he might be contributing to an NGO. Therefore, there might be some overlapping among these roles. While this might not be a problem, a good background about participants will allow a balanced participation from all different groups.

Journalists

- Journalists: those who represent the local newspapers and the national commercial large newspapers.
- Independent journalists such as local websites, influencers, activists, and NGO portals.
- Journalists who work/report on social issues/political analysis/migration, etc.

Fact checkers

- Legacy newsroom fact checkers employed by big newspapers and resourceful news portals.
- NGOs and independent fact checkers.

4.3 Policymakers

Since the overarching theme of the project is migration, the policy makers who will be engaged should have some experience working with the subject matter. As such, this group would ideally include politicians dealing with migration and migration policies. The suggested ideal number here is **5.** It would also include support staff, researchers and analysts in the field. The level of involvement should include local municipal levels up to national and international level within the EU. Furthermore, representatives from diverse political backgrounds should be sought in order to have a more nuanced understanding of how misinformation is impacting different sides of the policy discourse.

4.4 Methods of invitation

Since the invitation will vary largely according to the nature of the participant, the methods of invitation of participants are open for teams to decide in terms of format. However, these steps may be followed for greater uniformity:

- An invitation letter describing the project, the workshops and the co-creation process should be sent. The letter would ideally emphasize the privacy and safety of participants' personal and contributed data according to the GDPR and ethical approval of the project. A template will be designed and made available for all teams.

- The letter has the branding of the Co-Inform project and has links to more information, website and social media links.

- The letter can be sent digitally through email or in print.

Other methods of recruitment can be through:

- Personal networks and existing contacts.

- Emails and digital communications such as social media messages or SMS.

- Visits to NGOs, municipalities and support organizations.

- Snowballing or chain-referral, participant may suggest others.

In all cases, written informed consent should be explicitly sought from all participants before engaging them in any of the co-creation activities. They should be given the clear option to opt out of the process and have their data anonymized, especially considering that due to the theme under consideration, vulnerable groups will be involved in the project. The design of the workshops should reflect the above ethical constraints and the facilitator of the co-creation sessions will need to be sensitive and responsive to the dynamics of the stakeholder groups involved.

4.5 Incentives and motivating stakeholders

Since each of the pilot location has its own peculiarity, Pilot leaders and teams might suggest incentives and motivations that are appropriate to their context and conform to the legal and ethical approval guidelines of Co-Inform. A range of non-material incentives may be used such as certificates of attendance, networking, and access to information and learning material. For an in-depth discussion of different strategies and stakeholders' motivation please refer to D1.1 section on engagement and motivation (Sections 4.3, 4.4 and 4.5).

5. Co-creation Workshops: Interaction Moments

The co-creation methodology represents the framework of the Co-Inform project and has been described in detail in a separate deliverable (D1.1). The co-creation process needs to be adaptive and flexible to allow the implementation of the different workshops among different contexts. As such, the process will follow an iterative design, where we learn from past experiences, build on, and validate the approach taken. However, the engaged stakeholder and the composition of subgroups, the methods used to engage, objectives and questions of workshops will be consistent among pilots to ensure uniformity and comparability of findings. The next sections will cover the objectives and timelines of each workshop with emphasis on and details of the first workshop. Details and exact design of the next workshops will not be included in this document as they will still need to be decided based on the results of the first workshop. However, the general concepts of stakeholder mapping, methods, evaluation and data gathering will remain the same.

5.1 The objectives of Co-creation workshops

Pilot workshops will be held in each location (Sweden, Greece, and Austria). Under the general theme of migration, the goal will be to establish what the impact of misinformation on each different location is. Each Pilot will use its own sub-themes according to the needs of each particular context, to be refined before and during the actual workshops. Each workshop will provide stakeholders with different activities according to the stated objectives.

Therefore, the workshops' objectives will evolve as follows:

- The first workshop will gather needs and recommendations in order to understand where the issue lies.
- The second will present a suggested design based on the recommendations of the first workshop.
- The third will present an improved design based on previous feedback. The workshop duration may vary according to objectives, range from half a day to two days.
- The fourth workshop will try to elicit feedback on the improved tool and assess whether requirements were met throughout the whole process.

5.2 First Co-Creation Workshop: Gathering needs, gaps and requirements

The first workshop is the first opportunity to interact with the stakeholders. It is also the first opportunity to present to them the project, its aims as well as how and what it is supposed to deliver. The other aims of the workshop would be to get acquainted with the stakeholders involved and their backgrounds along with identifying their views and needs on the issue of misinformation. The workshop will also try to elicit views on policies, recommendations for change and suggest tools and features they like to see implemented. The first workshop is an excellent opportunity to test the approach, learn from the implementation and respond to stakeholders' needs and feedback.

As such the data to be collected from the first workshop could be as follows:

1. Background information about the stakeholders

2. Views on misinformation (attitude, impact, trust, ability to recognize it, responsibility):

- Their level of trust on news sources through different channels
- Their perception of misinformation, frequency of encountering such news
- Confidence on identifying misinformation
- Practices on handling misinformation, and especially how they assess the credibility and validity of information
- Views on extent of the problem and impact on their countries, trust and democracy
- Views on which institutions should act to combat the problem

Of course, the sample we have is far from representative, however it is very important to know the stakeholders. It might be practical to have this information collected through a standard survey in the three pilots along with the background information. The European Commission has an excellent survey about Fake News and Disinformation Online that covered 26.576 citizens in 28 member states. Using this survey will enable us to compare the samples to the general population and different countries too.

3. Input on policies (existing, or suggestions).

4. Recommendations on tools and features they would like to be implemented in these tools.

5. Evaluation of the workshop: evaluation of the first workshop is very important as it constitutes the foundation that each next step will rely upon. As such, the evaluation of the first workshop has to include the following exercises:

    - Evaluation of stakeholders' mapping.
    - Evaluation of methods and exercises as well as stakeholders' feedback about the workshop.
    - Evaluation of responses and data provided by participants.

5.3 Design guidelines and goals for First Co-Creation Workshop

The goal of the first workshop is to assess the needs of participants, elicit where the participants feel the issue lies and collect their recommendations of possible interventions and policies. The detailed guidelines and instruments to be used to assess the needs of the three stakeholder groups in relation to addressing misinformation in social media will be elaborated in the context of deliverable D5.1 'Evaluation methods' which will be coordinated by WP5. The deliverable will be made available and discussed with all involved partners by the middle of January 2019, so that the data collection can be aligned with the first co-creation workshops. The final version of the deliverable will be submitted by Month 12.

The first hour of the 1st co-creation workshop will be invested on assessing the initial needs of the three stakeholder groups, prior to the co-creation, interactive activities. During this first hour, a focus group will be conducted in three separate rooms (one for each of the stakeholder groups) with at least one moderator in each group. A focus group protocol will be prepared in English by the WP5 team and sent to each site coordinator in Austria, Greece, and Sweden, to be translated in the language of the co-creation workshops. While discussion themes and activities will have the same goal, the actual activities may be customized for each group, as the needs of the citizens might be quite different from the needs of the journalists or of the fact checkers, and indeed from the needs of the policy makers.

Various data from the focus group discussions will be collected (including videotaped discussions and written artifacts). Data should be then communicated in English (i.e. discussions should be transcribed and translated); the WP5 team will analyze these data and relay the results to the relevant Work Packages (WP1, WP2, WP4, etc.) for their respective tasks. Participants will also be asked if they would be interested in participating in one-on-one interviews at a later point, to follow up on some of the issues raised. Those interested will be asked to sign a separate informed consent form and will be contacted outside of the co-creation workshop times.

The activities should try to elicit **requirements of design**, such as:

- The use of some examples/samples of misinformation to elicit responses. The samples are misinformation in the local language of the piloting country (Some samples might need to be translated when engaging non-native speakers). Diversity is important, so these samples would ideally contain altered videos, images, tweets, Facebook posts, misinforming articles online and memes. Partner and collaborating fact checkers can be helpful here by demonstrating how and where the fabrication took place and provide context.

In order to elicit how they conceptualize the solution they should get immersed in activities, in such a way that **queries** like the ones below can be elicited:

- What is the purpose of this misinformation? Is it malicious or by mistake?
- What is the current state of support they currently have when facing such an issue?
- Use design cards to elicit a basic initial ideation of the tools that can be created to combat misinformation. Design cards are simple, easy to use and tangible for most participants, and so they can be easily shared and used within a diverse group. The design cards will describe some of the basic functionality of the tools that can be created to combat misinformation.

By the end of the 1st workshop, the below **objectives** should be realized:

- Where does the problem lie?
- What are the specific needs of each of the stakeholder groups and of all participants, in general?
- How are the participants processing information in general?
- What are the participants' usual practices regarding the processing and sharing of information on social media?
- How do the participants decide what information is right or wrong (identification)?
- Understand the lifecycle of misinformation, and the psychological factors that influence misinformation-related behavior in the three stakeholder groups.

- Identify the needs of the participants to help them address misinformation and transform these into recommendations for the development of the Co-Inform app.

5.4 Second Workshop: Feedback on prototype and policies

As mentioned above, the first workshop is expected to provide insights about the function of the tools and the features they are expecting to get. Following these, the second workshop is expected to test and give feedback about the generic version of the tool- that at this time - has to be provided as a prototype. They also may co-create some parts of the tools (user-interface, for instance). Stakeholders will also give feedback on strategies that seem most promising in raising awareness and addressing misinformation.

5.5 Third Workshop: Feedback on a functioning tool

At the third workshop the stakeholders will be presented with a functioning tool based on their suggestions. Their feedback about the functionality and the performance of the product as well as whether the identified needs (as documented /as established as a baseline during the first workshop) were met through the prototype and final version of the Co-Inform tool.

5.6 Fourth workshop: Feedback on an improved tool

The goal will be to present an improved version of the tool and collect feedback about the design, the features, the function and the extent of its efficiency. Data will be collected about whether the identified needs (as documented /as established/as a baseline during the first workshop) were met through the prototype and final version of the Co-Inform tool. This may be a final workshop, or another workshop may follow, if required according to the number of iterations.

5.7 Timeline

General milestones of pilots according to project proposal timeline:

- **MS3 (M9):** Start of development, pilot implementation, and evaluation plans. By December 31, 2018 the D1.2 Pilot Requirements report to be submitted to EC.
- **MS4 (M16):** Piloting, analysis, development, and evaluation: piloting period begun, and pilot plans updated.
- **MS5 (M20):** Maturing of pilots, policies, analysis tools, evaluation, and platforms.
- **MS6 (M32):** Final evaluations, analysis, platforms, disseminations, and reporting: Final pilot evaluations start.

The timeline will try to implement this approach with respect to the needs of Co-Inform.

The first workshop will start as early as February 2019, during this workshop we will know the stakeholders, test our approach, gather needs, identify gaps and collect requirements.

Activity	Timeframe
1st workshop	February 2019
2nd workshop	May to June 2019
3rd workshop	September to October 2019
4th workshop	January 2020

Table 1. Timeline

6. Challenges and risks

There are challenges to be anticipated and therefore, it is important to have a plan to proactively work on them:

- The **inclusion of newcomers** is a challenging endeavor in terms of invitation, motivation, sustainability, ethical grounds, language and communication. As such, the newcomers will be challenging to locate and invite; sustaining them will be also challenging especially for newcomers on the move in Greece; some of these populations are vulnerable groups and will need special attention when it comes to inviting, communicating and interacting with them. The relevant provisions of GDPR regarding special category groups will need to be taken into account. They will need special materials and news examples in their respective languages and might need a translator/interpreter. Their inclusion will be re-evaluated after the first workshop and decision of their continuous inclusion in the project will be decided upon thereafter by the pilot teams.

- The **definition and distribution of the subgroups** may be slightly different in each pilot. For instance, the Austrian pilot will not have newcomers, while newcomers (migrants and refugees) in the Greek pilots are temporary and always on the move to another destination. On the contrary, in the Swedish pilot they may have spent 2-3 years in the country.

- While pilot teams will strive to achieve stakeholders' engagement throughout the pilots, it might be **challenging to sustain the role, the attendance and the motivation of the same stakeholders in each pilot**. It is expected that there might be a change of stakeholders' status during the pilot project, withdrawal and role change. For example, an independent journalist might start working for the government or a migrant might start a job as a journalist. Pilot teams should be prepared for such situations by trying to achieve balance

in each iteration of the workshop, have a waiting list, and do the exercise of mapping the pilots before each workshop.

- **Conflict:** Gathering different types of stakeholders with different backgrounds, cultures and views might create divisions, conflict and power imbalances. Participants might not articulate opinions, needs and views. However, having this in mind, the moderators can work to ensure every participant is comfortable to talk, is heard and is participating.

- **Language and localization**: Since some of the stakeholder groups might not have the same first language as the hosting country, this might be a risk for them becoming estranged from the rest of the group. Translated materials, translators, interpreters, recruiting bilingual participants or separate mini sessions might be used.

- **Unbalanced attendance of stakeholders:** Some stakeholders might confirm attendance and withdraw, or apologize in the last minute, or leave early through the process. Extra-invitations and standby lists can help fill the gaps here.

- **Creating a collaborative environment:** Special skills are needed to ensure participants collaborate, co-design and cooperate together.

- **Engage participants throughout the process**: the workshops are planned to run for at least four iterations and over almost two years. Engaging the same participants for the full duration is a serious and challenging task, different motivation methods and engagement incentives may be tried. However, one should be ready for alternatives and have in mind people who may fill in for the participants who withdrew.

- **Change of roles:** some stakeholders might change roles during the process, journalists might move to NGOs, or to be politicians or analysts. Therefore, care should always be taken to keep the balance and understand the dynamics of participants.

- **Motivating the participants to express themselves and participate**. Interaction is a prerequisite for co-creation and with participants from some cultures this can be difficult to achieve. Pilot teams need to ensure they provide the right environment for everyone to participate.

- **Risk of misuse of information, data leak, erroneous analysis or conclusions is present.** These issues have been detailed in D1.1 (Section 6.3). Please refer to the risk section for detailed discussion of these problems and solutions.

- **Management of local political groups' reactions:** There is a risk that some organized groups apply pressure on the workshop organizers and on the participants after judging they are against the group's interests or an opportunity to gain traction/publicity by using the project (e.g. extreme right wing, anti-immigrant groups). The concern is that these groups can stir conflict and create a hostile environment in the immediate areas where the workshops will take place. The Pilot teams need to be aware of any such signs and make sure they comply with local legislation in order to avoid any such occurrence and protect participants and the smooth operation of the project.

- There is risk that the **co-created tools do not deliver** what they are expected to deliver or do not work adequately.

- **Risks related to implementation:** There is a risk of delay, budget constraints, and staying behind of schedule.

7. Pilot teams and roles of other Partners

The pilot managers (PM) are responsible for planning, managing, monitoring and recording of the data as well as ensuring the progress of the pilots. In particular, the pilot manager role is to perform the following:

- Invite, recruit and secure the involvement of stakeholders and monitor the balance of participants.
- Support the planning of activities for pilots.
- Participants in the formation of the pilot team.
- Monitor, and report the work progress to work package leaders and pilot coordinator.
- Proactively identify and work to solve the problems or potential risks of implementation, support of /in-consultation with SU and CUT.
- Collect data regarding users' responses, evaluation of the activities.
- Secure the data collected in accordance with the data management plan.
- Write the reports about the activities and workshops of the pilots.

7.1 Role of Partners

Stockholm University (Pilot leader)

- Interact with consortia representatives on matters pertaining to the planning and monitoring the implementation of the demonstration activities in the pilot countries (Sweden, Greece and Austria).

- Develop Early Pilots' Usage Scenarios prior to launching the Pilots, including developed and co-designed pilot plans and deployments.

- Engage and train the key stakeholders and pilot results to WP5 'Assessment of effect on misinformation-related practices and policies' for evaluation.

- Draft the Manual document on running the pilots, pilot requirements and service design, including the stakeholder requirements.

- Detail design and plans of all pilots according to the expected documentation of result from WP1 Co-creation Community and Culture and T1.1 Co-Creation framework.

- Draft a set of expectations (including instructions for baseline inputs) from the Pilot Partners. Draft the Incentives of engagement and resilience interim report.

- Manage and launch the pilot in Sweden and oversee the pilot launch in Austria and Greece. Serve as a leader of Task 1.2 'Co-Inform Pilots', a guidance and focal point for all WPs involved into piloting under the Project.

- Translate data collection instruments for assessing the stakeholder needs and collecting evaluation data, from English to Swedish. Conduct the three focus groups in local language during the co-creation sessions and collect data. Translate data (i.e. focus group artifacts) from local language to English and convey these to the WP5 team.

Cyprus University of Technology (CUT)

- Assess initial needs of each of the stakeholder groups and piloting results (WP5). Evaluate the effectiveness of Co-Inform platform interventions in persuading a misinformation-resilient citizen's cognitive and behavioral change.

- Support journalists' practices of misinformation discovery and fact-checking dissemination.

- Support policymakers' practices and formation of informed policy, as identified in WP1 and WP5.

- CUT will also provide the standard templates for the piloting countries in order to get requisite data in English. Each of the co-creation sites will be responsible for translating the materials in the language(s) used for the workshops, for storing and communicating the data to the CUT team for analysis and synthesis. CUT will then liaise with the WP2, WP3, and WP4 teams to provide information as needed.

Open University (OU)

- Monitor stakeholders' usage of the pilots in T1.2 which feeds into WP3 analysis.

University of Koblenz and Landau (UKOB)

- Assess the use and impact of WP2 policies through the pilots.

FactCheckNI (FCNI)

- Contribute with expertise in misinformation fact checking and community engagement in information validation.

- Provide journalists' requirements with regards to misinformation.

International Hellenic University (IHU)

- Engage stakeholders from Greece in T1.1 and support the launch of the pilot in Greece.
- Experiment with real usage of misinformation scenarios.
- Collect results from Greek pilot to be fully processed in the WP5 evaluation tasks. Consider new usage scenarios.
- Translate data collection instruments for assessing the stakeholder needs and collecting evaluation data, from English to Greek, with the help of the WP5 team.
- Translate data (i.e. focus group artifacts) from local language to English and convey these to the WP5 team.
- Support the implementation of the focus groups, gather data for the assessment of needs and the evaluation of the process in local language and translate it into English.

International Institute for Applied Systems Analysis (IIASA)

- Launch and manage the pilot in Austria.
- Experiment with real usage of misinformation scenarios.
- Collect results from Austrian pilot to be fully processed in the WP5 evaluation tasks.
- Consider new usage scenarios.
- Translate data collection instruments for assessing the stakeholder needs and collecting evaluation data, from English to German.
- Conduct the three focus groups in local language during the co-creation sessions and collect data.
- Translate data (i.e. focus group artifacts) from local language to English and convey these to the WP5 team.

SCYTL

- Support the pilots with expertise in public engagement, provide feedback to the T1.2 best engagement strategies.
- Under WP1, co-creation exercise, identify all stakeholders: citizens, journalists, and policymakers to start speaking a common language for the challenge itself.

7.2 Information flow in the Piloting countries and other Co-Inform Partners

The information flow from Co-Inform WPs Leaders and Piloting countries will be open. However, as per the aforesaid roles and responsibilities of the Co-Inform partners, the WP1 (SU) and WP5 (CUT) teams will have a key role towards piloting countries for the implementation of the Co-Creation Workshops. They will prepare standard templates, data collection instruments and protocols in English, use case scenarios and exercises in-consultation with Co-Inform technical partners (WP2, WP3, WP4).

The piloting countries will collect results on the aforesaid templates, received from the CUT, from the local stakeholders as per the Co-Creation methodology and handover to the CUT in native language and English, for further analysis, synthesis, and reporting as per the needs of the aforesaid technical partners of the project. The WP6 leader will also have close liaison with piloting countries for appropriate dissemination and communications of the piloting countries' activities at local, national and European level. They will also provide different types of materials that will be used as tools for communication and dissemination activities in the piloting countries. Moreover, FCNI will also contribute towards Co-Inform pilots with expertise in misinformation fact checking and community engagement in information validation and they also share journalists' requirements in general with regards to misinformation. The high level graphical view of information flows amongst Co-Inform WPs and Piloting countries will be as the below figure demonstrates:

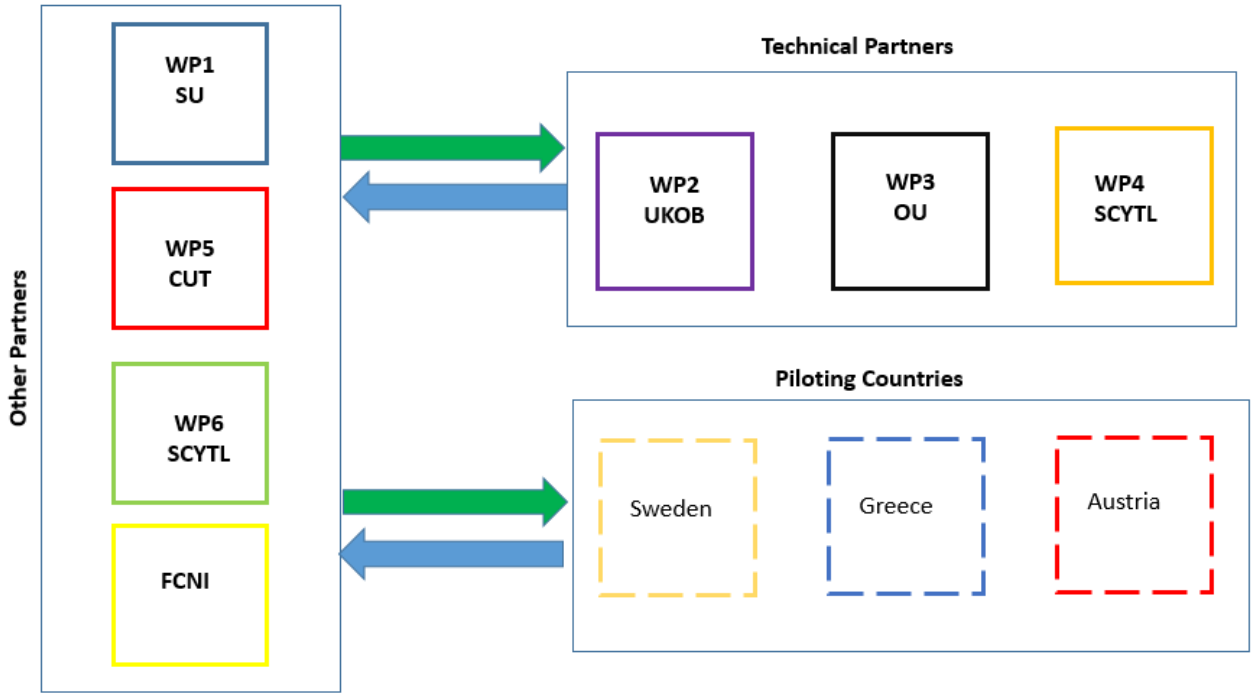

Figure 1: Information Flows between Co-Inform Partners and Piloting Countries

8. Ethics and privacy

The ethical risks and privacy concerns are real and should be dealt within the ethical approval of the project, the data management plan and GDPR regulations. The Deliverable D1.1 (Section 6.3) provides an outline of these risks and how to deal with each by using the state of the art standards set in the project proposal. The issues that need the utmost attention of pilot leaders and teams are:

- **Recruiting vulnerable groups:** Vulnerable groups are groups of research participants who are disadvantageous or had their free will or decision capability impaired, and as such may be subject to influence. These group need to be clearly informed, safeguarded, and protected. Their privacy and their safety must be given utmost care.

- **Collecting sensitive information:** Certain data should be handled using special safeguarding methods as outlined in the data management plan (D 7.1) and the D1.1. Examples are data collection regarding special category data such as ethnicity, religion, political views and trade union memberships.

- **Personal and private information should be safeguarded**, identifying information to be masked, encrypted or password protected and stored at the dedicated secure cloud at the Department of Computer and Systems Sciences (DSV). All personal data that will no longer be used for research purposes has TO be deleted as soon as possible.

Informed consent

All participants should sign the informed Consent for Co-Inform (Annex 1, D7.1 Data Management Plan). The consent form provides detailed information about the purpose of the project, description of the study procedures, potential risks or discomforts of being in this study, confidentiality and use of the information, how participants can get information about the results of the study and that participation is voluntary. The document may be used as the base for informed consent for all participants. Other points can be also amended according to special scenarios of the teams.

9. Local implementations

9.1 Pilot Implementation in Sweden

Context

The intensity, spreading speed and dangerous consequences of misinformation in Sweden have never been more remarkable. The issue has been exploited by all factions of society, politicians and even other countries that capitalized on the issue to spread harmful propaganda (Barclay, 2018; James Pamment, Howard Nothhaft, Henrik Agardh-Twetman, 2018; Juhász & Szicherle, 2017; Rosales, 2013). The pilot in Sweden will engage stakeholders in a co-creation process that will allow them to reflect on the issue of misinformation, suggest solutions and recommend tools. The main theme of the pilot will be misinformation regarding new arrivals and immigration.

The chosen geographical location is Botkyrka Municipality. Botkyrka is a municipality in east central Sweden, South of Stockholm. It has an estimated population of 91,925, of them 58% are of immigrant origin, 163 background nationalities and more than 100 languages, 83 languages are taught by Botkyrka schools. The younger generation is mostly born in Sweden, as such 87% of aged 0-18 years are born in Sweden. Botkyrka has a low income per capita in all Stockholm which makes it a resource poor municipality. Starting on 2010, the number of citizens with foreign backgrounds has reached 53%, most of them are from non-western backgrounds. The demographics within the municipality are also interesting. The districts of Botkyrka are Hågelby, Gård Districts, Fittja, Alby, Hallunda, Norsborg, Eriksberg, Tumba, Tullinge, and Vårsta. Of these districts Fittja, Alby, Hallunda Norsborg are among the poorest and the most radicalized in Sweden. The north part of Botkyrka is inhabited by a majority of foreign background, while the southern part is mostly inhabited by citizens of Swedish background. A previous study has confirmed the prevalence of rumors in the municipality regarding immigrants (Rosales, 2013)(Wikipedia contributors, 2018).

Stakeholders

Citizens

- Around 10-12 citizens including native citizens, second generation migrants and new arrivals.

Journalists (approximately 8)

- Legacy, public and commercial journalists
- Local free weekly newspaper: Mitt i Botkyrka and Södra Sidan
- Radio Botkyrka
- Main daily newspapers: Dagens Nyheter and Svenska Dagbladet
- SVT Swedish National Television
- SR Swedish Broadcasting Corporation

NGOs

- The Multicultural Centre
- Anti-Rumors Sweden
- Botkyrka Konsthall
- Support Group Network
- Other local organisations

Policy makers (approximately 5)

- Local policy makers of Botkyrka
- Analysts
- Regional politicians and party representatives.

User recruitment and invitation

Users will be recruited using the methods outlines in the manual

Pilot Team, Roles

- Mohammed Saqr – Team and Pilot Lead
- Oxana Casu – Member (Project Manager)
- Somya Joshi – Member (WP1 Leader and Advisor)
- Serena Perfumi – Member (Advisor)

Implementation tasks and schedule

The schedule will follow the manual timeline. The Swedish team will always try to be the first to start the process. As such the first workshop will start as soon as February 2019.

Specific Risks and mitigations:

- The risks and challenges of the Swedish pilot are similar to the ones mentioned in this document. However, since the Swedish pilot has promised to start early and provide insights about the process, delays might be a risk that need to be considered.

9.2 Pilot Implementation in Austria

Context

The theme of migration and of providing information about migration processes is relevant for Austria as 16% of the entire Austrian population are foreigners and 23% of population have migration background. The Austrian limited profit housing sector (LPHS) and its inhabitants and other stakeholders, are the subject of the Austrian pilot, namely, their perceptions of migration, social media and related tools. This sub-theme was selected due to several reasons but mainly because housing policy is a key pillar of the Austrian policy on socio-economic development and political stability. The LPHS has a high share of migrants and is challenged by different kinds of social conflicts. Some of these conflicts are caused by differences in opinions, views and everyday practices as well as on perceptions of different ethnic groups or cultural backgrounds. Another reason is also the experience of LPHS with the digital tools as they started already with implementation of digital tools to deal with information on migration in social media or differences in perceptions regarding people's cultural backgrounds. So, there is an interest expressed from the stakeholders' side in any results that can be produced by research on this subject.

As housing policy in Austria has a unitary approach, the majority of the population is targeted by the housing policy measures. The universal model of social housings aims at a diverse composition of residents and thus, avoids residualization and stigmatization of the social housing segment. The focus of the Austrian pilot is on the inhabitants of the social housing sector.

In Austria, there is no official definition of social or affordable housing but there are different forms of housing provision other than the private market. The different forms of social housing include rental housing provided by municipalities and housing by limited-profit housing associations (LPHAs), which have access to public subsidies. 16% of all dwellings in Austria (600,000) are owned by LPHAs. Additionally, LPHAs have constructed a big number of subsidized owner-occupied apartments, which may also be attributed as social, and usually remain in the management responsibility of the LPHA. They sum up to another 7% of the total housing stock (300,000). In total, LPHAs manage around 900,000 housing units.

Today, 187 LPHAs are active in Austria, differing in their legal status and owner composition. Cooperatives are owned jointly by their members while the capital companies (limited liability companies, joint stock companies) are owned by local or regional public authorities, charity organizations, political parties, unions, the finance industry or private persons. This multifaceted picture of housing providers reflects the fact that housing associations are intertwined with the Austrian political landscape.

Similar to most Scandinavian countries and the Netherlands, Austria follows a universalistic understanding of social housing, which is accessible for a very broad range of social groups. There are fairly generous income limits for the access to social housing. On average only 10-20% of the population is excluded from this scheme of transfer and subsequent salary increases are not taken into account. Taking the total LPHA housing stock, middle-income households are over-represented and lower-income households are under-represented. The diversity of its occupants is a very important aspect of the Austrian social housing sector. Yet, especially in the new-built LPHA housing

stock of high quality, cost-rents are comparatively high and the required tenants' down payments function as barriers for low-income households. LPHA housing is challenged by the recent immigration of asylum seekers. A number of initiatives have been launched to provide for low cost housing for lowest income groups.

Stakeholders

Citizens

- Around 10-12 citizens who are inhabitants of LPHS, native citizens and second-generation migrants and new arrivals.

Journalists

- National and local media
- Fact checkers who are located in Vienna
- NGOs like Global2000 or other NGOs which are active in the area of integration of migrants

Policy makers

- Representatives from the municipality of Vienna
- Representatives from the LPHA
- Representatives from the different political parties
- Representatives from the ministries of economy and digitalization as well as from the ministry of education and other policy-making bodies

User recruitment and invitation

Users will be recruited using the methods outlined in the manual.

Pilot Team, Roles

- Nadejda Komendantova, Team and Pilot Lead
- Love Eckenberg, Member
- Joanne Linnerooth-Bayer, Member

Implementation tasks and schedule

The first workshop will be realized during the first half of the year 2019.

Risks and mitigations

The major challenge will be to keep the same group of participants for a number of workshops.

9.3 Pilot Implementation in Greece

Context

Between 2016 and 2018, over 200,000 refugees and migrants arrived in Greece, the majority of whom were from Syria, Afghanistan or Iraq, and over 35% of whom were children. While exact data are not readily available, around 60,000 refugees remained in Greece. Most of them were hosted in over 43 sites throughout mainland Greece while around 14,000 persons were residing in the Greek islands.

Whilst the transient nature of the population movements meant that the vast majority of refugees and migrants aimed at continuing their journey onwards, staying in Greece only for a limited period, the situation changed considerably in March 2016.

Since the progressive establishment of border entry restrictions between the Former Yugoslav Republic of Macedonia and Greece, resulting in an effective closure of the Western Balkans route, as well as the EU-Turkey agreement which came into effect on March 2016, only a very small number of people were able to continue elsewhere from Greece.

The response focus thus changed from targeting people on the move, to helping a more stable population staying in an urban context and being hosted in emergency sites or existing buildings. The international community as well as the Greek authorities were also increasingly waking up to the fact that since many of the refugees were here to stay, effort must be put into integration.

This is challenging in a country suffering from a financial crisis since 2010 that has impacted the local job market severely. There is relatively little or sparse interaction between the migrant and Greek communities, partly because of a lack of shared space and joint activities where they would get to meet up and partly due to language and other factors.

These conditions create a fertile environment for the spread of misinformation between and within these population groups. The internet and social media addresses the issue of limited foreign-language news sources for immigrants and refugees in the country. But in many cases, they present a whole new set of issues including the spread of false information, both intentionally and unintentionally.

Misinformation centered on immigrants, spikes during periods of increased flows and intense media coverage of migration issues. Common topics include supposed criminal acts carried out by migrants, migrants who take advantage of social benefits and the idea of a migrant invasion. Misinformation even spreads between countries, often changed or adapted to fit a local context or to feed into the rhetoric of various local political groups. The impetus being to associate these groups with violent behavior and some kind of ingratitude for the "social benefits" they may enjoy.

Interestingly, social media and the internet have not replaced word-of-mouth. Instead, they can amplify it, spreading misinformation through communities even quicker. This was demonstrated numerous times during the operation of the large camp at Idomeni (“Authorities target misinformation at refugee camp”, 2016), where false information on the opening or closing of border passages would cause large population movements.

Migrants and refugees seeking accommodation for mid to long term settlement in Greece face considerable integration pressures that are compounded by misinformation throughout traditional, new and social media. Similarly, educational provision has proven to be difficult and has led to ad-hoc solutions that in many cases exclude migrants and refugees from the national educational system.

The Greek Pilot thus would turn its focus on the housing and educational services provided by national and international private and public entities including “Solidarity Now”, “UNHCR” in major cities of Greece such as Athens and Thessaloniki. Provision of basic accommodation for migrant and refugee groups is seen by those designing integration policy in Greece to also provide psychological and legal counseling, case management, information and educational activities.

The Pilot will also look at the Code + Create project by the Open Technologies Alliance, an open educational resource-based effort to provide basic digital and technology skills to mixed groups of refugees, migrants and Greek youth and will examine the educational and housing activities provided by the Athens Municipality.

The Greek Co-Inform pilots will focus on the specific strategies employed by stakeholders to combat misinformation issues in housing and educational provision by looking into local conflicts, possible biases of national media and entrenched attitudes in relevant population groups.

Stakeholders

Citizens

- This group of participants will include native citizens, immigrants and refugees.

Journalists

- Journalists,
- Representatives of journalism associations.
- Non-governmental organizations (NGOs).

Non-governmental organizations

- Non-governmental organizations (NGOs) that are active in the domain of interest will also be engaged in the pilot. This group will include the NGOs that are verified by the Greek government to act for the migrant and refugee crisis. In addition, the pilot will engage other NGOs that are active in the fields of migration, refugee crisis and education.

Representatives of relevant EU projects

- The pilot will engage representatives of relevant EU projects.

Policy makers

- The pilot will engage policy makers and other officials from public bodies and other organizations that are driving the governmental policy in the Greek government.

User engagement and invitation

Users will be engaged using the methods outlined in the manual.

Pilot Team, Roles

- Dr. Vasilis Peristeras, Team and Pilot Lead (Asst. Professor)
- Dr. Ioannis Magnisalis, Member
- Dr. Christos Berberidis, Member
- Syed Iftikhar H. Shah, Member
- Athanasios Deligiannis, Member
- Nancy Routzouni, Member

Implementation tasks and schedule

- **End of January 2019:** Design workshop - following the receipt of the deliverables provided by the project partners. Review of workshop methods/practices/scenarios/design cards. Review of suggested incentives and decide on the incentives that are applicable to the Greek pilot according to the national context.

- **Early February 2019:** translate the workshop material to Greek and to the rest of the languages indicated by the participants profile.

- **Mid-February 2019:** Go ahead with workshop invitations and logistics considerations.

- **End of February/ Early March 2019:** Conduct the first workshop according to the agreed workshop design and the feedback received on the workshop conducted in Sweden.

Risks and mitigations:

The Greek Pilot has identified the following risks and proposed the possible ways to mitigate these risks:

#	Risks	Mitigations
1	Participation and retaining stakeholders in Pilots	• Provision of incentives & motivations • Careful consideration during the selection process by involving our main partners (Athens Municipality, Solidarity Now, Open Technologies Alliance/GFOSS) and their existing contact networks is seen as way to address this. • Providing methods of online feedback for those unable to participate in the live sessions is also a possible mitigation strategy.

2	A possible language barrier for some participants (newcomer refugees) can also become an issue	• Availability of workshop material in the relevant languages • Provision of a translation facility (this could be interpreters from our partner organizations for example) would address this challenge.

Table 2. Risks and Mitigation for Pilots in Greece

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Annex 1: Informed Consent Form for Co-Inform

1. Introduction

You are being invited to take part in the research project Co-Inform which aim is to create tools that will increase society's resilience to online misinformation and to generate more informed behaviors and policies. This document gives you information about the project and what it means to participate in it. At the end of the document you are asked for your consent to participate in the project including the personal data processing that will take place.

2. Purpose of the project

Misinformation is one of the most pressing issues that the online world is facing today. Digital technology has advanced at lightning speed, and algorithms used by social media platforms have been becoming more and more complex. Because of this, the consequences of online misinformation and its impact on real life are only now emerging. The ubiquitous and loose term "fake news" has risen to the surface and has become a hot topic frequently discussed in the public sphere.

A multitude of academic research has been conducted in recent years on the reasons online misinformation has spread so much, on its impact on society and on potential ways to effectively fight it. The Co-Inform research project aims to contribute towards this ambitious goal by focusing on intra-European, multidisciplinary research targeting three main stakeholder groups that could help turn this problem around: policymakers, journalists and citizens.

Academic surveys have shown that online misinformation is becoming more difficult to discern by the human eye. After asking readers to distinguish between a hoax and true articles, Stanford University researchers showed that humans made a correct identification just 66 percent of the times. And this research included both media-savvy and less educated readers. What does this show us? That online misinformation has the potential to deceive even readers with strong literacy skills. And due to the amplifying factor of social-media platforms, it can reach larger numbers than ever. Echo-chambers which are digital spaces where like-minded opinions just confirm each other, get boosted by algorithms and thus erect even thicker walls between online users with opposing views. Online misinformation can even lead to real-life consequences as recent anti-immigrant violence shown in Chemnitz, Germany. If we take it a step further and try to see the bigger picture, misinformation has the potential to lead to erosion of the public's trust towards institutions and media and to dangerously disrupt the political debate in Europe ahead of several crucial elections in 2019.

The Co-Inform project will aim at making an impact on the European society by conducting research in 3 different EU countries greatly affected by the combination of anti-immigration rhetoric and online misinformation. Co-Inform consortium partners believe that researching both the technological and behavioural aspects of this phenomenon is imperative in order to have a real impact on society. Online misinformation detection techniques that make use of big data analysis need to be combined with behavioural research regarding a user's attitude when confronted with false information. Co-Inform aims to make a difference by involving three categories of stakeholders that have the largest stake in the fight against misinformation: policymakers, journalists and citizens.

- **Citizens:** Using the methodology of co-creation, Co-Inform researchers will use a bottom-up approach to understand the end-users' needs when it comes to tools automatically detecting misinformation online. Co-Inform will use this feedback and researchers will be able to adjust and correct the tools' technological capabilities accordingly.

- **Policymakers:** Co-Inform will support policymakers with the creation of informed policies against the spread of misinformation. Support from a diverse group of International Institutions and NGOs will assist the Co-Inform consortium in widening the range of its research and reach of its results.

- **Journalists:** Co-Inform aims at providing our fact-checking partners with the adequate technology to overcome issues related to the high volume of online misinformation that they need to check. Furthermore, the effectiveness of current fact-checking methods will be assessed by examining public perception during all co-creation sessions.

The Co-Inform project aims at addressing these issues at a crucial moment in the European Union's history. Fighting online misinformation is more than getting rid of online trolls. It is about restoring trust towards public institutions and journalism and by extension restoring citizens' faith in the democratic process.

Co-Inform aims to engage all stakeholders in fighting misinformation by providing them with tools to identify misinformation online, understand how they spread and obtain verified information. The objective is to create tools that will increase society's resilience to online misinformation and to generate more informed behaviours and policies. The result of the project will also be published in scientific journals, workshops, conferences and on the website of the project.

The research project is conducted by a European research consortium which consist of nine (9) countries and is funded by the EU's Horizon 2020 program. More information about the project can be found on the website of the project: https://coinform.eu/

3. Description of the study procedures

The part of the research project that you are invited to participate in will be conducted by Stockholm University and consists of a series of co-creation workshops with a group of 15-30 people who represents the three stakeholder groups of the project: citizens, journalists and policy makers. The aim of the co-creation workshops is to jointly discuss the needs and ideas for new methods, policies and digital tools for detecting and handling misinformation online. The workshops will be led by a workshop leader and be followed up by interviews and questionnaires. The workshops will start in December 2018 and last to November 2020.

4. Potential risks or discomforts of being in this study

There are no reasonable foreseeable or expected risks in the project, except if the outcome of the project would result in negative publicity, which could potentially cause discomfort for you as one of the participants in the project. This risk is, however, minimal, since you and the others participants' identity will be disclosed in the presentation of the project.

5. Confidentiality and use of the information

The voluntarily provided information will be used for research purposes only. The records of this study will be kept confidential in accordance to national applicable law. Research records will be kept in a locked file, and all electronic information will be coded and secured using a password protected file. The information that we will obtain and store is audio and video, video and written documentation of the results of the workshops, interviews and questionnaires.

We will also store certain personal data about you such as your name, address, contact details, age and occupation. The personal information will not be shared outside the research team beyond national legislation and will not be used in a manner which would allow identification of your individual responses in the workshops, interviews and questionnaires. Only summaries of the overall results from the workshops, interviews and questionnaires that you will participate in will be stored.

The results of interviews and questionnaires will be anonymized prior to processing and publication, which means that individuals will not be able to be identified from the outcomes. Personal data will be retained in a protected file, separated from the outcomes of the participants' anonymous answers and discussions in interviews, questionnaires and workshops. Only summaries of workshops. Interviews and questionnaires will be published in scientific journals and other publications. Personal information such as signed consent forms, names or email addresses will be destroyed within ten years of the initiation of the project. Responsible for your personal information is Stockholm University.

6. How do I get information about the results of the study?

According to the General Data Protection Regulation (EU) 2016/679 (GDPR) you have several rights. Of particular importance are rights (sometimes conditional) to be informed and have access to data, rectification and erasure, restrictions of processing, rights to data portability, right to object and request a portable copy of the personal data about you in a common format, and if you find necessary. If request that the information about you will be deleted. In order to do so, please contact the research leader of the project (see below contact information) or the Data Manager of the project at (email of the appointed Data Manager).
If you are dissatisfied with the processing of your personal data, you are entitled to file a complaint with the Swedish Data Protection Authority (DPA), which is the national supervisory authority in Sweden.

7. Participation is voluntary

Your participation is voluntary, and you will not receive any compensation for your participation in the project. You are free to discontinue your participation in the project and withdraw your consent for the processing of your personal information at any time without any negative consequences. If you want to discontinue your participation, withdraw your consent, or if you have questions, concerns or complaints, please contact the primary investigator (see below contact information). You do not need to motivate your decision to discontinue your participation or withdraw your consent.

8. Contact information of the project

Primary investigator:
Phone:
Email
Visiting Address:
Postal Address:

9. Consent to participate in the project

☐ I have read and understood the project information dated **[**DD/MM/YYYY**]**, or it has been read to me. I have been able to ask questions about the study and my questions have been answered to my satisfaction.

☐ I consent voluntarily to be a participant in this project and understand that I can refuse to answer questions and I can withdraw from the project at any time, without having to give a reason.

☐ I consent that information about me is treated as described in the above information about the project.

☐ I understand that participating in the project involves notes from the workshops, interviews and questionnaires.

☐ I am over 18 years old.

Signature

Place and Date

Name of participant Signature

Annex 2: Multi-Criteria Decision Analysis and its Application in the Framework of the Co-Inform Project

1. Introduction

With an ever-increasing reliance and dependence on digital media and digital service functionality of various kinds, issues of deliberate as well as unintentional misinformation are becoming more and more important. In all sectors, from public and political to corporate settings, the costs of forming views and acting on erroneous information are becoming larger and are even becoming a concern regarding democracy and national independence.

With the very large and continuing increase in both volume of information and its flow, there is little to hope that surveying and counteracting such misinformation hazards could be handled even with digital automation. We also need tools for enhancing the potential stability and resilience of societies and democracies. Decision making (based on public information) is not seldom affected by misinformation or sometimes even irrational factors and lacks transparent support models for the preparatory, analysis and negotiation stages of democratic decision processes. Generally, policy decisions are to a large extent influenced by temporary hot spots and trends in unstructured data trying to grasp attitudes to societal issues. Therefore, this project aims at developing methodologies and tools for supporting complex transparent decision processes based on data sets of various kinds. The basic ideas behind the processes are: (i) they must take advantage of transparent decision support models, (ii) the various beliefs and opinions involved must be clearly separated from the actual underlying facts, and (iii) reasonably fair and efficient elicitation procedures must be included.

One of the problems herein, as with most models for decision making, is that numerically precise information is not available and techniques such as ratio weight procedures are impossible to accurately employ. The general lack of reasonably complete information, which will be dominating in our case, increases this problem significantly. Several attempts have been made to resolve such issues. Methods allowing for less demanding ways of ordering the criteria, such as ordinal rankings or interval approaches for determining criteria weights and values of alternatives, have been suggested, but the evaluation of these models is often complicated and difficult for decision-makers to accept. We have earlier solved this in part by introducing, for instance, so called surrogate values, such as in (Danielson and Ekenberg, 2019ac). This, however, is only a part of the solution since the elicitation can still be uncertain and the surrogate weights might not be a fully adequate representation of the preferences involved, which of course, is a risk with all kinds of aggregations. To allow for analyses of how robust the problem is to changes of the input data, we will also systematically introduce a kind of managed uncertainty, cf. e.g., (Danielson and Ekenberg, 2019c, Danielson et al., 2019), where ranges of possible values are represented in combination with various types of orderings. During such a process, we will be able to consider the entire range of values as the alternatives presented across all decision components as well as how plausible it is that an alternative outranks the remaining ones, and thus provide a robustness measure. Because of the complexity in these calculations, we will further develop the unique decision engines of the programs DecideIT (Danielson et al., 2019a), Risk Library (Danielson and Ekenberg, 2018), POLA (2019) and Decision Wizard (Fasth et al., 2018; Larsson et al., 2018), allowing for strong uncertainty

while showing the internal relations between the decision components. Earlier versions of these programs have successfully been used in a variety of contexts, such as national energy transition policies, storage of nuclear waste, governmental insurance portfolios, demining, financial risks, policy creation and many others.

The public information handling and decision process model to be developed within the project builds on previous research by the project members on decision models, in which the decision components, such as criteria, alternatives and their possible consequences are associated with, possibly imprecise, weights, utilities and probabilities. This imprecision can be manifested through specifying inequalities, intervals and distributions over them, rather than point values, for weights, utilities and probabilities, and by specifying partial preferred orderings for the different outcomes. In order to allow for a truly transparent decision process, then not only these decision components should be specified, but also the way in which they have been derived. For instance, in case the probabilities of different consequences are based on empirical material, this requires that the factors underlying these estimates are provided. Similarly, if the utility estimates, distributions and preference orderings are based on text analysis, e.g., using surveys or document collections, the analysis leading to these estimates need to be fully transparent as well. Any derived model, e.g., through data and text mining techniques, that is to be used for supporting the decision-making process is hence required to produce interpretable results in several ways.

The project will deliver a theoretical and implemented framework for transparent, public decision making, allowing for the incorporation of different information sources, including expert knowledge and empirical evidence. The outcome ct will be technical, in the sense that new analysis methods will be implemented, but a desired outcome would also be to provide public actors a road map to identify ongoing attitudinal changes in public discourse and public opinion.

We thus intend to deploy a risk and decision theoretical model for assessing the rationale for public opinion impact on policies and policymaking as well as representing the impact of how the citizen stakeholder group assesses the credibility of information shared online and how they, then, decide to address it. We will also try to examine how credibility assessment, decision making, and associated practices changes when the public opinion enter transitions and develop an integrated decision analytical model for evaluating policies regarding counter--measure efficiency and credibility from quantitative and qualitative data, based on stakeholder feedback, data aggregations and risk analyses. This will be carried out with a focus on handling potential misinformation and its propagation during decision modelling and making.

2. Methodology

The methodology section describes the task 4 of the work package 5 on the development of the policy evaluation module and decision analytical tool. The aim of this task is to develop and deploy a decision theoretical model for assessing policies and policymaking process while using data collection from work package 5. The methodological basis for the tool development is the participatory governance framework which allows alternative actions, scenarios or policies from the perspective of different stakeholders and different stakeholders groups. The tools allow for weighting of different criteria in decision making processes or complex and contested issues, such as migration. It also allows for identification of trade-offs and differences in preferences of various stakeholders' groups.

In frames of the Co-Inform project we compare policies to deal with misinformation in the area of migration against a set of evaluation criteria and performance indicators. Each policy is evaluated against a set of criteria, which are to be developed in frames of the Co-Inform project and in co-creation with stakeholders. The criteria are developed based on the review of scientific literature on migration, as well as on the analysis of policy documents from pilots.

The criteria should include a set of indicators, usually quantitative and qualitative. Data for quantitative indicators can be collected, e.g., from national and international statistical databases, reports and projects. Data for qualitative indicators were collected from surveys, questionnaires, interviews with stakeholders.

Further on, relevant criteria are selected and discussed during the co-creation workshops to see whether the stakeholders agree with the criteria definition, whether the criteria are relevant for them and the pilots and whether stakeholders would recommend any further criteria.

3. Co-creation workshops to discuss criteria and visions

A workshop with stakeholders should last for a day and include several sessions. The first session starts with the introduction during which the organizers present the workshop and its objectives as well as the goals of the workshops and the agenda. The participants introduce themselves and their organizations.

During the second session, the visions on migration should be discussed. Participants has opportunity to describe how they see environmental, social and economic aspects of the future aspects on migration. Then they write their choice on the different colored cards and put them on a flipchart. Furthermore, they explain their choices. During the third session, the policies should be discussed. It should start with a presentation of policies relevant for migration and followed by a discussion of positive and negative sides of each policy. Participants will have a chance to suggest further policy options, which were not originally included in the list of discussed policies.

The fourth session focus on the discussion of criteria. First, the criteria and their definitions are presented to the participants. Each criterion is discussed to make sure that participants understand its definition. Participants also has a chance to provide suggestions on how the definition of criteria could be changed and to add further criteria.

The fifth session should be on criteria ranking during silent negotiation, which is a tool for collective ranking but in silence by avoiding any discussion. The following rules applied to the session: At the beginning, the set of cards was displaced on the table in a random order. Then the moderator explained the ranking and the rules and asked participants to order cards in three rounds of silent negotiations. The three rounds were followed by a discussion to identify lines of conflicting opinions. During the first three rounds, participants make eight moves during the first round, five moves during the second round, three moves during the third round and finally, after the open discussion, two moves in the fourth and final round. The order how participants were putting the cards is identified by the lottery.

The sixth session is on silent negotiation and white cards. The moderator introduces the blank cards and explains that they show the relative difference in importance for different criteria. The greater the difference in importance between two criteria, the more blank cards should be positioned in-

between these criteria. Altogether, there are three rounds of silent negotiations. The first round had three moves, the second one had two moves and was followed by the open discussion. The final round has one move.

In the seventh session, the participants discuss procedural and output justice. This discussion focuses on the following questions:

- Access to information: How high is the need for information about the different policies?
- Meaningful participation in decision-making: How high is the need for participation concerning the different policies?
- Benefit sharing: How high is the need to share a reasonable amount of benefits with local communities?

To discuss these questions, the participants form two groups and try to reach a compromise on grouping four criteria in a ranking according to what they believed was important. Later, the results of the ranking are discussed, and participants provide their arguments why they find some criteria to be more important than others.

4. Criteria ranking

One of the problems with most models for criteria ranking is that numerically precise information is seldom available, and most decision-makers experience difficulties with entering realistic information when they analyze the challenges of decision-making. For instance, Barron & Barrett (1996b) argue that the elicitation of exact weights demands an unreasonable exactness which does not exist. There are other problems, such as that ratio weight procedures are difficult to accurately employ due to response errors (Jia et al., 1998). The general lack of reasonably complete information increases this problem significantly. Several attempts have been made to resolve this issue. Methods allowing for less demanding ways of ordering the criteria, such as ordinal rankings or interval approaches for determining criteria weights and values of alternatives, have been suggested, but the evaluation of these models is sometimes quite complicated and difficult for decision-makers to accept.

The utilization of ordinal or imprecise importance information to determine criteria weights is a way of handling this, and some authors have suggested surrogate weights as representative numbers assumed to represent the most likely interpretation of the preferences expressed by a decision-maker or a group of decision-makers. The idea is to enable decision-makers to utilize the information they can supply and then generate representative weights from some underlying distribution and investigate how well they perform. One such type is derived from ordinal importance information (Barron & Barrett, 1996ab; Katsikopoulos & Fasolo, 2006), where decision-makers supply ordinal information on importance, and the information is then subsequently converted into surrogate weights corresponding to and consistent with the extracted ordinal information. Often, rank sum (RS) weights, rank reciprocal (RR) weights (Stillwell et al., 1981) and centroid (ROC) weights (Barron, 1992) are used.

Still the problem there is to elicit stakeholder information. Different elicitation formalisms have been proposed by which a decision-maker can express preferences. Such formalisms are sometimes based on scoring points, as in point allocation (PA) or direct rating (DR) methods. In PA, the decision-

maker is given a point sum, e.g. 100, which they distribute among the criteria. Sometimes, it is pictured as putty with the total mass of 100 being divided and put on the criteria. The more mass, the larger weight on a criterion, the more important it is. When the first N–1 criteria have received their weights, the last criterion's weight is automatically determined as the remaining mass. Thus, in PA, there is N–1 degrees of freedom (DoF) for N criteria. DR, on the other hand, puts no limit on the total number of points to be allocated. The decision-maker allocates as many points as desired to each criterion. The points are subsequently normalized by dividing by the sum of points allocated. When the first N–1 criteria have received their weights, the last criterion's weight still has to be assigned by the decision-maker. Thus, in DR, there are N degrees of freedom for N criteria. Regardless of elicitation method, the assumption is that all elicitation is made relative to a weight distribution held by the decision-maker.

Simos proposed a simple procedure, using a set of cards, trying to indirectly determine numerical values for criteria weights (Simos, 1990ab). The Simos method is, however, a bit different from the methods discussed above. It is a relatively simple method for easily expressing criteria hierarchies while introducing some cardinality if needed. It has been widely applied and has been well-received by real decision-makers. When this method is used, a group of decision-makers are provided with a set of coloured cards with the criteria names written on them. They are also given a set of blank cards. Then, they are asked to rank, the coloured cards from the least important to the most important, where criteria of equal importance are grouped together. Furthermore, the decision-makers are asked to place the blank cards in- between the coloured cards to express preference strengths. Then, the surrogate numbers can be computed. A constant value difference, 'u', between two consecutive cards is assumed here. A blank card between two consecutive coloured cards signifies a difference of 2·u, and two white cards represent a difference of 3·u, etc.

However, one problem with the Simos method is that it is not robust when the preferences are changed (Scharlig, 1996) and that it has some other contra-intuitive features, such as that it only picks one of the weight vectors satisfying the model, while there can, of course, be an infinite number of them. Furthermore, because the weights are determined differently depending on the number of cards in the subsets of equally ranked cards, the differences between the weights also change in an uncontrolled way when the cards are reordered. This is why (Figueira & Roy, 2002) suggested a revised version, where there is a more robust proportionality when these blank cards are used. It is accomplished by requesting the decision-makers to state how many times more important the most important criterion or criteria group is—compared to the least important. This addition seemingly solves some problems but introduces the complication that the decision-maker has to reliably and correctly estimate a proportional factor 'z' between the largest and the smallest criteria weights.

We, therefore, use a variant of the Simos method for elicitation purposes and kept the card ranking part while changing the evaluation significantly compared to the Simos method and its revisions. At that point, the participants already know the criteria well from the previous sections of the workshops. The key challenge in our workshops is to elicit a collective ranking. Most methods for ranking and weighting deal with individuals, we have to do it as a group effort. This is the main reason to opt for the card-ranking through a silent negotiation, not the calculation behind it.

Each criterion is written on a coloured card and arranged horizontally on a table. Then each of the participants successively ranked the cards from the least important to the most important by moving the cards to a vertical arrangement, where the highest-ranked criterion was put on top and so forth. If two criteria were considered to be of equal importance, they were put on the same level. This process goes on for four rounds, where the number of moves for each round is 8, 5, 3 and 2. Furthermore, the first and third round is concluded by an open discussion before the following round. The ranking procedure last 120 minutes or until a final ranking is achieved that the participants find acceptable.

It is true that the decreasing number can be disputed and is a weak point of the method since it induces / forces the participants to act strategically in relation to the information they got during the process. So when this method is used, the potential conflicts must come to the open and be dealt with. In some cases, by working with a set of final ranking in the evaluations, where it turns out whether the differences are of importance or not. After the first ordinal ranking is finalized, the participants are asked to introduce preference strengths in the ranking by introducing the blank cards during three additional rounds (with three, two and one move). The number of white cards (i.e. The strength of the rankings between criteria) is also interpreted verbally:

Table 1: Blank cards

Equal level of cards	Equally important
No blank card	Slightly more important
One blank card	More important (clearly more important)
Two blank cards	Much more important
Three blank cards	Extremely more important

The final rankings of the six workshops are handed to the representatives of each stakeholder group during the final workshop after two months, where the exercise is repeated also with this group. There they can present each ranking and its rationales to the other participants during an introductory presentation round.

5. Methods of analysis

A common approach to solve decision problems with multiple criteria is to specify a set of criteria that represent the relevant aspects of a problem, and then define a weight function over the criteria set. Value functions are then defined over the alternatives for each attribute. Common here is to use a weight function over the attribute set using fixed numbers on a normalised scale. The criteria weights thus describe each criterion's significance in the specific decision context. Value functions

over the alternatives are defined in a similar way. Thereafter, the overall score of each alternative is calculated by aggreggating the various components.

One of the central issues of these methods is how to assign weights while avoiding too much information loss as well as preserving correctness in the weight assessments. Using criteria ordinal rankings usually avoid some elicitation difficulties that appear when limited to precise numbers only. Techniques for ordinal rankings are, however, quite different regarding their accuracy and decision-makers usually also have useable knowledge of decision situations than expressed in criteria orderings, c.f. e.g., (Danielson and Ekenberg, 2019ab); information that should be used as well. The, so called, surrogate weights based on an ordering only may thus be too weak a representation. In the analyses, we have therefore included information regarding relational strengths.

Before, going into the evaluations, we will explain the issues with eliciting and representing preference orderings into some more details. A commonly used class of methods here is the SMART[1] family. These were quite early suggested as methods for weight assessment from criteria rankings and the basic idea is quite simple. Given a ranking, ten points are assigned to the weight of the least important criterion (w_N), where after the weights w_{N-1} through w_1 are given points according to the decision-makers' preferences. The overall value, $E(a_j)$, is then a weighted average of the values v_{ij} associated with alternative a_j (Eq. 1) under the criterion c_i:

$$E(a_j) = \frac{\sum_{i=1}^{N} w_i v_{ij}}{\sum_{i=1}^{N} w_i} \qquad (1)$$

Some years later, Edwards and Barron (1994) suggested the SMARTER method, and included an elicitation component for ordinal information before converting this to numbers. First, the weights are ordered as $w_1 > w_2 > \ldots > w_N$ and are then transformed to numerical weights using ROC weights (see below), and then SMARTER continues as the ordinary SMART method.

The Analytic Hierarchy Process (AHP) is a well-known ratio scoring method (Saaty, 1977, 1980), where a set of alternatives are evaluated under a criteria tree by pairwise comparisons. For each criterion, the decision-makers assess the ordering of the alternatives. Thereafter, they assess the strength of the ordering by quite roughly considering ratios between the alternatives.

There are however some several shortcomings of these methods, and we have in a series of articles suggested a set of alternatives. A promising candidate to these methods is the P-SWING method and we have shown that it is a more robust and efficient than the ones from the SMART family, AHP and many others. [2]

We will use P-SWING, in the analytical part of this report, when translating the rankings to surrogate weights and subsequently use these values in the Multi-Attribute Decision Making (MADM) software DecideIT, which is designed for solving these types of problems under uncertainty.

[1] Simple Multi-Attribute Rating Technique
[2] See, e.g., Danielsson & Ekenberg, 2019cd

6. Calculations of surrogate weights from the ranking

The P-SWING method of (Danielson & Ekenberg, 2019e) converts the cardinal criteria ranking including the blank cards into numerical weights, while thereby limiting information loss. The idea is the following:[3]

1. Assign an ordinal number to each importance scale position, starting with the most important position as number 1.
2. Let the total number of importance scale positions be *Q*. Each criterion *i* has the position *p(i)* ∈ {1,…,*Q*} on this importance scale, such that for every two adjacent criteria c_i and c_{i+1}, whenever $c_i >_{s_i} c_{i+1}$, $s_i = | p(i+1) - p(i) |$. The position *p(i)* then denotes the importance as stated by the decision-maker. Thus, *Q* is equal to $\Sigma s_i + 1$, where $i = 1,\ldots,N-1$ for *N* criteria.
3. Use a reliable transformation algorithm for the generation of surrogate weights.

To find such, we have some alternatives. For instance, consider the counterpart to RS weights (Barron, 1992). The concept of cardinal rank sum (CRS) weights is based on the idea that the rank order strength should be reflected directly in the weights. Then the CRS weights are obtained by Eq. 2

$$w_i^{\mathrm{CRS}} = \frac{Q + 1 - p(i)}{\sum_{j=1}^{N}(Q + 1 - p(j))}, \quad (2)$$

based on the importance positions *p(i)* as stated by the decision-maker. The counterpart to ordinal rank reciprocal weights[4] is analogously defined. According to step 2, let the total number of importance scale positions be *Q*. Each criterion *i* has the position *p(i)* on the importance scale such that $p(i) \leq p(j)$ if $i < j$. Then the corresponding rank reciprocal (CRR) weights are obtained by Eq. 3

$$w_i^{\mathrm{CRR}} = \frac{\frac{1}{p(i)}}{\sum_{j=1}^{N}\frac{1}{p(j)}} \quad (3)$$

with the usual property that a higher weight is assigned to lower ranking numbers. ROC weights (Danielson et al., 2014) are generalized in the same way. The ordinal ROC weights, given by Eq. 4

$$w_i^{\mathrm{ROC}} = {}^{1}\!/_{N} \sum_{j=i}^{N} \frac{1}{j} \quad (4)$$

could be interpreted as candidate weights for positions on the importance scale. Then, the corresponding preference strength rank order centroid weights (CRC, Eq. 5) are

[3] This is more described in more details in (Danielson & Ekenberg, 2015, 2016)
[4] Stillwell et al, 1981

$$w_i^{\mathrm{CRC}} = \frac{\sum_{j=p(i)}^{Q} \frac{1}{j}}{\sum_{k=1}^{N}\left(\sum_{j=p(k)}^{Q} \frac{1}{j}\right)} \quad (5)$$

Finally, the SR weights (Danielson & Ekenberg, 2014) are generalized in the same way. The ordinal SR weights are given by the Eq. 6

$$w_i^{\mathrm{SR}} = \frac{{}^{1}/_{i} + \frac{N+1-i}{N}}{\sum_{j=1}^{N} w_j^{\mathrm{SR}}} \quad (6)$$

and the corresponding preference strength SR weights (CSR, Eq. 7)

$$w_i^{\mathrm{CSR}} = \frac{{}^{1}/_{p(i)} + \frac{Q+1-p(i)}{Q}}{\sum_{j=1}^{N}\left({}^{1}/_{p(j)} + \frac{Q+1-p(j)}{Q}\right)} \quad (7)$$

is a similar generalization as the other weights.

Ordinal weight methods are thereby easily generalized to their respective counterparts and we have earlier demonstrated in (Danielson and Ekenberg 2015, 2016) that CSR should be preferred to the other candidates. This is also the evaluation method for the criteria ranking component used in P-SWING.

Now we turn our attention to the general evaluation of the entire decision problem.

7. Multi-Criteria Decision Analysis (MCDA)

Typically, a multi-criteria decision situation is modelled like a tree, such in the figure below, where the *w:s* are criteria weights and the *v:s* are values of alternatives under the different criteria.

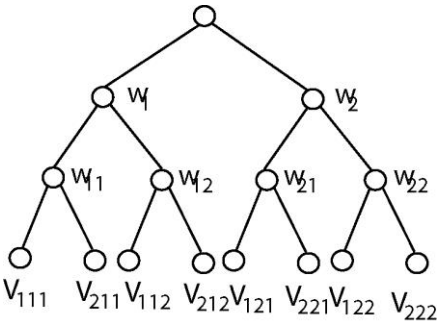

Figure 1: A multi-criteria tree

The normalisation constraint means that the weights are restricted by the equation $\sum w_j = 1$, where w_j denotes the weight of a criterion G_j and the weight of sub-criterion G_{jk} is denoted by w_{jk}. Denote the value of alternative a_i under sub-criterion G_{jk} by v_{ijk}.

A common value function for evaluating alternatives in the analyses is a weighted average of the components involved. For instance, consider an alternative A_i under two criteria, with the respective weights w_1 and w_2. The overall value of this alternative can be calculated by a weighted average:

$$E(A_i) = \sum_{j=1}^{2} w_j \sum_{k=1}^{2} w_{jk}\, v_{ijk} \quad (8)$$

This can straightforwardly be generalized to multi-criteria decision trees of arbitrary depth and solved as corresponding multi-linear equations.

As was mentioned above, one of the problems with most models for criteria ranking is that numerically precise information is seldom available. We have solved this in part by introducing surrogate weights as before. This, however, is only a part of the solution since the elicitation can still be uncertain and the surrogate weights might not be a fully adequate representation of the preferences involved, which of course, is a risk with all kinds of aggregations. To allow for analyses of how robust the problem is to changes of the input data, we also introduced intervals around the surrogate weights as well as around the values of the policy options. Thus, in this elicitation problem, the possibly incomplete information is handled by allowing the use of intervals (cf., e.g., Danielson & Ekenberg, 2019c, Danielson et al, 2019a), where ranges of possible values are represented by intervals (in combination with pure orderings without the use of surrogate weights at all, if the latter turns out to be inadequate).

There are thus several approaches to elicitation in MCDM problems, and one partitioning of the methods into categories is how they handle imprecision in weights and values, such as fixed numbers, comparative statements, representing orderings or intervals.

Computationally, methods using fixed numbers are very easy to solve, while systems of relational or interval constraints normally require more elaborated optimization techniques. On the other hand, if the model only accepts fixed numbers, we impose constraints that might severely affect the decision quality. If we allow for imprecision in terms of intervals and relations, we usually get a more realistic representation of the problem. These can, for instance, be represented by interval statements, such as $w_i \in [y_i - a_i, y_i + b_i]$, where $0 < a_i \leq 1$ and $0 < b_i, \leq 1$, or comparative statements, such as $w_i \geq w_j$.

Systems of such equations can be solved, and aggregations of decision components in these formats can be optimized, by using the methods from (Ekenberg et al., 2019b). The disadvantage here is that many decision-makers sometimes perceive these methods difficult to understand and accept, because of complex computations and loss of user transparency.[5]

The performance of the different policies can, for instance, be estimated from a larger expert surveys. Together with the surrogate weights, they thus provided the decision base for the multi-criteria analysis. Using the weighted aggregation principle in (Eq. 8), we can combine the multiple criteria and stakeholder preferences with the valuation of the different policy options under the criteria surrogate weights.

The results of the process are (i) a detailed analysis of each policy's performance compared with the other policies, and (ii) a sensitivity analysis to test the robustness of the result.

During the process, we consider the entire range of values as the alternatives presented across all criteria as well how plausible it is that an alternative outranks the remaining ones, and can thus

[5] This should be kept in mind here as always when working with aggregation methods of whatever kind and this should affect how the elicitation mechanisms and software tools that are used.

provide a robustness measure. Because of the complexity in these calculations, we intend to use the state-of-the-art MCA software DecideIT and POLA for the analysis, allowing for imprecision of the kinds that exist here (Ekenberg et al., 2019ab). Earlier versions of DecideIT have been successfully used in a variety of decision situation, such as, storage of nuclear waste, insurance portfolios, demining and financial risks.

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