Scaling collaborative policymaking: how to leverage on digital co-creation to engage citizens

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Abstract

In recent years, new methods to engage citizens in deliberative processes of governments and institutions have been studied. Such methodologies have become a necessity to assure the efficacy and sustainability of policies. Several tools and solutions have been proposed while trying to achieve such a goal. The dual problem to citizen engagement is how to provide policymakers with useful and actionable insights and data stemming from those processes.

The following paper has the aim to share with the audience of the Data for Policy Conference 2021 an innovative tool based on the concept of participatory policy making with the scope of collecting feedback and comments to enhance the consistency and the usefulness of the tool.

We propose a research featuring a method and implementation of a crowdsourcing and co-creation technique that can provide value to both citizens and policymakers engaged in the policy-making process.

Thanks to our methodology, policymakers can design challenges for citizens to take part, cooperate and provide their input to policymakers. We also propose a web-based tool that allow citizens to participate and produce content to support the policymaking processes through a gamified interface that focuses on emotional and vision-oriented content.

Keywords – Crowdsourcing, Gamification, Co-creation, Policymaking

1. Introduction

Over the past decades, a new form of governance has emerged to replace adversarial and managerial modes of policymaking. Engaging citizens in decision making is gradually proving to be a new way to overcome long-lasting symptoms of a democratic deficit in modern societies, such as the reluctance to publicly state one's opinion, declining voter turnout, and the diminishing participation in public debate within institutions. Governments and institutions are struggling to understand the real impact on innovation creation of such engagement processes, how they can be adequately developed and adopted (Mazzucato, 2018; Wegrich 2019). The theory and practice of public policy are increasingly concerned with placing the citizen at the center of policymakers' considerations, both as target and active agent.

The enormous technological progress in recent years, has led to the development of innovative ICT tools for policy design in governments. Such tools are designed to make governmental action more effective, efficient, and transparent (Kamateri et al. 2015; Ahrweiler et al. 2015). Many of these new ICT tools promise the opportunity of innovative policymaking through collaborative solutions for policy problems.

This new route focuses on opening governmental structures to the external environment and investigating the effect of the intensive use of data, information, and communications technology in the public sphere (Misuraca and Pasi, 2019). Public organizations are trying to

learn how to encourage citizens to get involved in finding solutions to problems in the public sector for the sake of the common good. According to (Bason, 2018), the only way to meet and face these challenges is through the co-creation of new solutions with citizens thanks to the use of participatory policy making tool.

In this context for participatory policy making tool, we intend a digital platform created to facilitate the inclusion of citizens in the design of policies via consultative or participatory means to achieve accountability, transparency, and active citizenship. The role of the digital platform is to involve users in the attempt to increase their awareness about the issues at stake, helping them and organize their critical thinking regarding complex issues, advocating for more participatory policymaking with the scope of supporting policy makers in the creation of a collaboration with citizens.

This research proposes a method aimed at enabling large-scale citizen engagement and co-creation in support of policymakers. The presented approach, as well as its implementation, is based on different principles and techniques, whose initial conceptualization has been reported in (Tocchetti and Brambilla, 2020). We report on our research plan and on the ongoing developments and continuous evolution with respect to the initial concepts.

2. Related work

Most of the times, engaging citizens is a tough task, especially when it comes to the policymaking field. In recent years, many researchers and local administrations developed different methods and systems to achieve such a goal.

Most of the developed solutions were digital, like platforms, social media and/or websites. "Love Your City" (Stembert and Mulder, 2013) allowed citizens to directly address to fellow citizens or authorities ("Addressing"), create solutions to a proposed problem ("Co- creating") and organize events ("Organizational"). "Decide" (GovLab 2010) was an online platform through which citizens could propose and vote new laws and opinions about the city proceedings, debate, and rate how to redistribute the city's budget among projects.

Developed in the U.S.A, "MindMixer" (Ha, 2014) is an online platform through which citizens can express, support, and comment public proposals. Its main functionalities involve submitting ideas, feedback, and photos, answering to questions on common themes and proposing their own solution to real life challenges.

Even though digital tools are more accessible and widespread, few European administrations opted for more tangible alternatives. Helsinki, Finland promoted public participation using a board game through which small teams of managers and front-line staff could learn together how to involve citizens in their work (Bloomberg Cities, 2018).

Several initiatives initiated across different European administrative traditions in EU demonstrate how these digital tools for citizen engagement have characteristics in common such as: 1) providing information to public officials, 2) improving public officials' awareness for specific policy issues, and 3) improving communication across the public sector.

The most well-known cases are the "eNAP" platform in Germany, which is an assessment tool designed to support public officials in their evaluation of the potential impact of planned policies regarding the United Nations Sustainable Development Goals (SDGs) and the "NAGiS" platform, which is a Hungarian geo-information system that aims to assist all governmental levels and selected NGOs in assessing the impact of planned legislation and other projects on climate change. It thus encourages relevant stakeholders to collaborate in the development of municipal climate change strategies.

"Pleio" in the Netherlands is a social collaboration platform that enables employees in public sector organizations to share their professional

knowledge and experiences, aiming at more informed policymaking in all policy areas.

"DIGIT" in Norway is a working group assisting all ministries to improve their appearance and communication practices in social media.

The Dutch and Norwegian initiatives were initiated bottom-up by public officials, while the ICT tools in the other countries were commissioned top-down by political and administrative leaders as part of larger administrative reform projects.

3. Literature Review

In a world where complexity and uncertainty are increasingly made visible, issues can no longer be framed in single dimensions, especially at a policymaking level.

Instead, they need to be addressed by a close attention to the interdependencies with different values, norms, and interest groups. The most pressing policy challenges need to be tackled by a dialogue across co-existing worldviews and knowledge production spaces in society.

Co-creation is one of the modes that have been experimented in the last decades as a new modality of collaboration between citizens and policymakers.

Alternative framings coming from the scientific community have been proposed to justify this collaboration, mode 2 Science (Gibbons et al. 2000) refers to the specific way of producing scientific knowledge that is context-driven, problem-focused, and interdisciplinary, also entailing the participation of external actors such as citizens in the production of knowledge.

Such models of co-production of knowledge propose alternative dialogues amongst different bodies of knowledge which do not rely in rigid or exclusive separations. Co-production of knowledge is linked to the motivations and justifications for the ways in which citizens, policy makers and scientists hold, develop,

represent, communicate, or express, and deploy knowledge.

However, also growing bodies of knowledge are accessible to growing number of individuals with added agency that enables them to intervene in the world (Deacon and Mann, 1999).

Several authors have anticipated this state of deeper involvement of non-experts in scientific dimensions of societal matters, not only because of a dissatisfaction with existing representative and deliberative democratic arrangements, but also due to a perceived need for spaces to express arguments referring to values, preferences, cultural traditions, and local interests.

Since science became a privileged input into the evidence base for policy making, more space is needed for citizens to get engaged with the issues to tackle and provide knowledge that is relevant to address those matters (in all forms, from data, experience, values, questions to be addressed either by science or other bodies of knowledge, etc.).

One of the most emblematic experiences in this respect is the now reformed Danish Board of Technology (DBT), which works at the interface between public challenges, technology, knowledge, values, and actions to be taken. Overall, there has been a great deal of initiatives that aimed at wider participation of the publics in many policy areas via both physical and digital means.

However, citizen engagement (CE) is a broad term and encompasses different degrees of influence and agency of citizens in the knowledge production process. That is, the public are involved to varying degrees and control over the several steps, such as defining the questions, developing explanations/hypotheses, collecting data, interpreting data, or drawing conclusions.

Projects are often classified on a ladder that includes contributory projects (mostly data collection); collaborative projects (data collection and refining project design, analysing data,

disseminating results); and co-created projects (designed together by scientists and public where the public shares most or all the steps in a scientific project/process) (Bonney et al. 2009). Categories are not to be seen as mutually exclusive, although it can be argued if what can be said to be CE is mostly in collaborative and co-created projects.

The same discussion is at the core, for instance, of different categories of citizen-generated content (Craglia and Shanley 2015), which is on the rise due a massive diffusion of the Internet, mobile technologies, and social media (ICT):

1. Data mining - reuse of data generated by the public often unintentionally or for other purposes, e.g. social media, mobile phones traces, photo-sharing sites, etc). This category is more difficult to be seen as part of CE and can be even exploitative if using personal data for commercial gain, misinformation or manipulation.

2. Crowdsourcing - contributions are solicited from a large group of unknown individuals (the crowd) or a restricted group of trusted individuals or experts. In most present cases, the methodology for data collection and analysis is centrally designed by researchers.

3. Citizen science - the public is openly collaborating in the knowledge production process in strong interaction with the academic community (although not always), with greater or lesser extent of engagement of the public from only data collection to analysis and co-creation. One hidden assumption in most approaches is that scientists are leading the project, even when co-created.

However, initiatives with a reverse relationship where the public leads the process, with less or no help from professional scientists, are also on the rise. What can be called DIY science (Nascimento, Guimarães Pereira and Ghezzi 2014) includes non-specialists, hobbyists and amateurs who are doing research outside policy hub, university, or lab settings, and instead in Makerspaces, FabLabs, Hackerspaces, Techshops, innovation and community-based labs, or even in their homes, garages or schools.

In short, innovative processes for engaging citizens in science and/or policymaking, are placing citizens in all steps of the co-creation of knowledge, when it is relevant and adequate. Deeper extents of engagement, seen for instance in collaborative approaches, offer major opportunities to narrow the gap between science, society policy and make their interconnections more transparent and participated.

Effective and meaningful engagement of civil society in policy dialogue should be based on the values and principles of transparency, openness, inclusiveness, accountability, mutual trust and understanding, and institutional responsiveness to citizen-proposed policy inputs.

Allowing citizens to take part in the working groups for drafting new legal or policy acts, but also to comment on already prepared proposals during public consultations, enables government institutions to draw from the "wisdom of society" and use the sector knowledge and expertise available among activists and professionals to prevent possible flaws in the future implementation.

Careful design of the participatory drafting process as well as more strategic approach to conducting public consultations can result in getting innovative contributions, valuable information on the situation in the sector/ policy area, expected costs and benefits, as well as the needs and concerns of the citizens and groups that will be affected by new legislation.

Additional benefits are related to strengthening the legitimacy of policy proposals, building a sense of ownership among main target groups as regards the proposed policy options and solutions for identified social problems, but also increasing the likeliness of the future support to the implementation of adopted policies, especially citizens feel their opinions are considered and if they receive explanation on what happened with their comments, and they feel treated with respect.

4. Co-creation and User Engagement Method

4.1   The Evolution of the Policymaking Process

In the traditional approach to policy-making citizens are perceived as passive actors. As can be evinced from Figure 1, the active participation of citizens in the iterative formulation of a policy is able to enhance the overall outcome of such process by collecting direct feedback on the perceived impact of such procedure. However, this solution presents its own challenges when it comes to bridging the gap between policymakers and citizens.
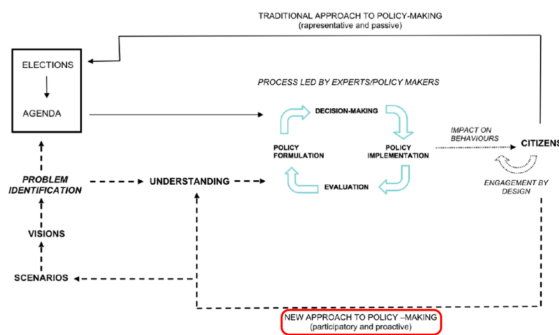

Fig.1: Proposed co-creation process engaging both policymakers and citizens.

4.2   The Research Method

In the attempt to face this problem, we devised a research plan implementing an incremental approach, where the work has been organized in four different steps:

– Definition of the theoretical model based on literature review and experts' interviews.
– Realization of a paper-based implementation based on the theoretical model. The resulting physical mock-up has been tested by hosting workshops and gamified sessions, engaging experts in the social and policy-making fields to validate the engagement mechanisms. Tocchetti et

al. (2020) explains in detail how such physical prototype was structured and how the experiment was carried out.
– Development of a digital mock-up featuring the core aspects deemed valuable based on the input of the physical phase.
– Engagement of communities of policy-making experts in the validation process of the digital mock-up.

The preliminary feedback cycle contributed to identify some threats to the validity of our methodology. Therefore, policy-making experts were engaged in further discussion rounds. One of the aspects that has been under meticulous scrutiny is the emotional one. Due to its relevance and eventual impact on the design of the proposed interaction flow, this feature has undergone intense design cycles which led to a partial re-design of the mock-up to improve the emotional engagement of the citizens. The emotional facet has been modeled referencing the categorization of human emotions proposed by Plutchik (1980). In particular, the organization of people's emotions under eight categories, with three different intensities each, has been considered.

As most of the designed activities were successfully validated by the engaged policymakers, a digital mock-up with the objective of improving the testing capabilities of the process has been developed. Further feedback on the final prototype have been collected to ensure that the principles validated in the physical prototype were correctly transposed into the digital one.
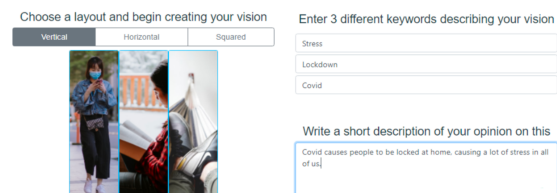

Fig 2.: Example of visual and textual content made by citizens

4.3 The Co-creation and User Engagement Solution

The approach and tool resulting from the research process engage citizens in a set of structured activities through which they can organize their thoughts in different formats. The interaction flow is structured to enable citizens to develop and convey their ideas through textual and graphical elements. In particular, the digital platform enables citizens to discuss about a variety of topics, through a series of gamified co-creation activities.

The main goal is to detect moods, perceptions, and changes in the feelings of the users as they play and interact within the platform. The approach also leverages on empathy between players. Therefore, the proposed activities are aimed at structuring the thoughts of the citizens in an organized way, making them share, discuss, explore, and converge on new lines of thought and visions for the future.

Thanks to its innovative content and interaction design, the proposed method can capture interesting signals from citizens about the topics of interest.

5. Future work and conclusions

Even though an internal testing phase has already been carried out, it's still necessary to evaluate the effectiveness of the proposed methods in a real environment. Such assessments will engage stakeholders, policymakers, and different categories of citizens (e.g., students, citizens from a specific city, etc.). A first testing phase engaging university students will be carried out over the course of the year.

Another evaluation is expected in late fall when the citizens of an Italian city will be engaged to contribute to the decision-making process of the local administration. The proposed method will be also tested in some public events and conferences attended by policymakers. Finally, likely the most crucial aspect, the delivery of results to policymakers will be addressed. This final objective will be accomplished via a data visualization dashboard. Its aim is to provide a comprehensive explanation of the content shared through the platform to the policymakers, involving not only descriptive statistics but also analytical results about topics, questionnaires, keywords, and textual comments shared by citizens within the process proposed above.

The data collected will also be analyzed through machine learning algorithms to extract further knowledge that can be provided to policymakers (e.g., by classifying the citizens depending on their feelings and shared content, it would be possible to determine the polarization of the citizens with respect to a specific topic). The final objective will be to use the approach for creating and evolving policies, around which the community will converge and gather consensus.

In this paper, we described one of the aspects that both local and international administrations are currently trying to deal with, namely the engagement of the citizens in co-creating solutions to current problems. As a solution to such a challenge, we briefly exhibited a methodology through which provide policymakers with insights on the thoughts of citizens, improving their decision-making capabilities. Over the rest of the year, the research will be enhanced with additional features. Furthermore, extensive experimentation will be implemented to test and validate the approach on real-world scenarios, engaging citizens, and communities from different countries and with different socio-demographic characterization.

Acknowledgements

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