251 Supporting Sustainable Behaviour by Citizen's Participation in Group Activities

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Abstract

For at least 50 years, citizens have been promised measures aimed at curbing climate change, introducing a circular economy, and promoting sustainable consumption and production. However, there is lack of concrete political actions of governments and parliaments to stop the real threats of climate change. Appeals to governments to finally deliver on the promises of top-down measures have been noted but, despite the official announcements of governments worldwide no real effect is in sight. On the other hand, newer technological developments (digitization, networking, communication software) in the sense of bottom-up make it possible to rethink and reshape citizens' participation in ways that would have been considered impossible not long ago. They are already being used in a participatory way and could in the future be a useful complement to so-called 'representative democracy' and help to influence the reflections and actions of all stakeholders, including the citizens themselves, in the direction of sustainability and the circular economy. Of course, the *effective* use of these social and technical possibilities requires the fundamental willingness of stakeholders and potential addressees to allow participation to go beyond the current extent. Of the methods and procedures currently in use, (a) one participation method is currently favoured in Europe (Germany, Ireland, UK, etc.) and will be considered in more detail: Randomly and representatively composed small groups develop topic- and problem-centred proposals for activities and actions to be implemented by citizens, authorities, or other stakeholders. We will discuss ways of optimizing this participation process. Especially, as an alternative and complement, (b) the output-, action-, and impact-oriented participation of citizens in digital councils for solving problems will be considered. We recommend, to combine both the methods (a) and (b) for reaching

sustainable actions which are acceptable for citizens. However, for optimizing the citizen driven problem-solving process further research is necessary. Thus, we define appropriate research questions. Furthermore, it will be discussed how an important overarching goal of citizens' participation can be achieved, namely, to involve 'the citizens' in the development and design of future participation projects, technology and communication structure in a transparent, effective, and environmentally friendly way.

Introduction

For at least 50 years, citizens have been promised measures aimed at curbing climate change, introducing a circular economy, and promoting sustainable consumption and production. However, there is lack of concrete political actions of governments and parliaments to stop the real threats of climate change: The rainforest is being cut down, gas, oil and coal are being extracted and burned, the industrialization of agriculture is being promoted with tax money despite devastating consequences (pesticides, mass animal husbandry), air traffic and kerosene consumption increased worldwide, exports and global trade destroy local productions and markets, and so on.

There is a lack of concrete political actions of governments and parliaments to stop the real threats of e.g., climate change. Appeals to governments (as for example by the Fridays for Future movement or Greta Thunberg) to finally deliver on the promises of top-down measures have been noted but, despite the official announcements of governments worldwide no real effect is in sight.

With the new president of the European Commission (flanked by the new US president, and the president of China), serious top-down measures seem to be planned, which are hopeful and have already been reflected (albeit repeatedly) in the EU research and innovation programme (e.g. European Commission, 2020). However, the planning of a late change in the agricultural economy, the non-transparent Brussels lobbying, the lack of centralization, the low influence and the national composition of the EU Parliament, the short election periods, which make it difficult to pursue long-term goals, the technology-centricity etc. – and not least previous experiences – give rise to scepticism.

In view of e.g. the current climate crisis, however, quick, urgent and effective measures are needed to ensure that countermeasures are still possible at all. There is no doubt that a large part of the necessary measures must be decided and implemented by politics. In addition, it is the financially strong institutions and individuals who can develop and implement measures due to their material power. However, precisely from

these two groups of addressees little can be expected due to systemic problems.

In this respect, complementary bottom-up approaches (Bergman et al., 2010) are needed to get masses of people to change their lifestyles. The goal is not only to change individual consumer behaviour, but also a change in attitude towards life. Individuals should learn together, work on problems and courageously commit to solving them – also in companies (Hammerl et al., 2009) and organizations (Banerjee, 2016).

More recent technological developments and innovations (digitization, networking, communication software) in the sense of bottom-up make it possible to rethink and reshape citizens' participation in ways that would have been considered impossible not long ago. They are already being used in a participatory way and could in the future be a useful complement to so-called 'representative democracy' and help to influence the reflections and actions of all stakeholders, including the citizens themselves, in the direction of sustainability and the circular economy. Of course, the effective use of these social and technical possibilities requires the fundamental willingness of stakeholders and potential addressees to allow participation to go beyond the current extent.

Phenomena such as declining voter turnout, hate postings, the need for campaign goodies, etc. seem to increase the willingness of political, administrative and economic stakeholders not only to allow participation, but even to encourage it in a moderate way. An example is from the city of Graz, which is hosting this conference. Graz calls itself a Smart City, and even has a department for citizen participation. However, the extent of citizen participation is limited - for example, Graz citizens were recently asked to submit innovative proposals to the city, and 300k Euros were allocated for their realisation (Graz.at, 2021). On the other hand, for reports, a feasibility study, evaluation, advertising, and marketing for a potential mini-subway in Graz, which have been initiated by the mayor of Graz without the involvement of regular citizens the costs were more than 700 k in total.

At least, the Stadlabor Graz, under the management of Barbara Hammerl and Hans Schnitzer, were able to closely cooperate with the city in the context of city-district initiatives and to involve engaged local communities and citizens.

However, some basic questions remain: Do citizens actually want to participate and what should such a participation look like? To quote a book-title from Mausfeld (2015): 'Why are the lambs silent?' In any case, without the active involvement of citizens as well as their sustainable consumption and actions, the global climate crisis won`t be solved. For instance, in the EU individual households account for nearly 20% of total carbon dioxide emissions (Gwozdz et al., 2020).

Methods

It seems obvious that behavioural change towards sustainable consumption and production should not rely on purely top-down approaches but requires bottom-up initiatives by the engagement and involvement of citizens. The prerequisites for such a (sustainable) behavioural change of citizens are the perceived *self-efficacy* (Bandura, 1977), the avoidance of *learned helplessness* (Seligman et al., 1979), *fear mongering* and *mind manipulation* (Mausfeld, 2019) or *corporate power* (Eckert, 2019).

Thus, it is necessary to ask which methods and procedures of citizen participation currently exist to bring about changes at different levels through direct or indirect influence or through stimulating self-reflection? The different levels can be ordered from global (e.g. UN), continental (e.g. EU), national (e.g. Austria), regional (e.g. Styria), local (e.g. Graz) down to specific households and individuals. It could be argued that behavioural changes even at the highest levels should be possible with effect and without problems: e.g. if all smokers, drug consumers, all beef consumers worldwide would agree to stop their consumption simultaneously and permanently, the consequences for the environment, health etc. would be enormous. The individual who agrees will argue that it is easy to change one's own behaviour, but that the more people who need to be convinced, the less influence they will have on the behaviour of others.

Changing one's own behaviour usually requires acquiring knowledge, insight, attitudes, etc. These are necessary but not sufficient prerequisites - individual behavioural changes are also based on highly complex processes of a cognitive, emotional and motivational nature.

It is a well investigated fact that even motivated persons with appropriate knowledge often do not decide and behave according to his/her attitudes, values, emotions and cognitive insights (Courtenay-Hall and Rogers, 2002). This is called 'knowledge-behaviour gap', 'value-action gap', or 'attitude-behaviour gap' - and may or may not cause 'cognitive dissonance' (Festinger, 1957). A wide range of established and empirically-validated cognitive models on behavioural change have been developed, aiming to explain and predict this gap, for example (see also Albert et al., 2021; Bedek and Albert, 2019; Hagger et al., 2020).

- Social Cognitive Theory (Bandura, 1977, 2001),
- Health-Belief Model (Becker, 1974; Janz and Becker, 1984),
- Theory of Reasoned Action (Fishbein and Ajzen, 1975),
- Theory of Planned Behaviour (Ajzen, 1985, 1991),
- Protection Motivation Theory (Rogers 1975, 1983),
- Health Action Process Approach (Schwarzer 1992, 2008),
- Transtheoretical model (Prochaska and DiClemente, 1983; Prochaska and

Velicer, 1997), or the

- Precaution Adoption Process Model (Weinstein et al., 1998).

Because of the attitude behaviour gap it is difficult to change her/his *own* behaviour even if a person is motivated to do so. Nevertheless, many individuals and groups are convinced that they can legally influence and change the behaviour of *others* in various ways, directly and indirectly.

Legal aspects of citizen participation

Legal civic participation is not self-evident even in democratic states; e.g. in one of the oldest democracies, Switzerland, women's suffrage (voting and electoral rights) was introduced only 50 years ago in 1971. Even today, many citizens living in Europe are denied democratic forms of participation: e.g., around 70k asylants (in the minimum income scheme) are living in Austria for an indefinite period and do not have the right to vote (Statistik Austria, 2019); also, e.g. in Hungary, the right to demonstrate was recently restricted (Euronews, 2018), and in Poland the rights to freedom of expression and association have been reduced in 2020 (Amnesty International, 2021).

The legal framework for citizen participation obviously has to be permanently defended and protected - although the legal framework is internationally and nationally defined and guaranteed by a multitude of legal provisions. As an example, we will briefly mention and comment on the current legal framework in Germany. We would expect that the current legal regulations are a 'holy grail' and 'living rights'.

First, let us look at the laws for participation in a parliamentary democracy - regulations for adult citizens in Germany:

In principle, Art 21 GG stipulates: The parties shall participate in the formation of the political will of the people. This principle is further extended in the Political Parties Act.

§1 PartG para. 2 states: The parties shall participate in the formation of the political will of the people in all areas of public life, in particular by influencing the shaping of public opinion, stimulating and deepening political education, promoting the active participation of citizens in political life.

However, reality is different. The interests and needs of the people are less and less represented by the parties. The decline in voter turnout clearly shows that this representation of the will of the people no longer works. Political decisions are significantly influenced by certain groups who see themselves as experts for selected legislative projects. This kind of participation goes by the name of lobbying. The problems of this practice have been the subject of public debate for some time. In general, these are representatives of financially strong institutions that exert more or less direct influence on political decisions and legislative projects, primarily pursuing

particular interests rather than the common welfare.

According to Art. 17 GG, the submission of petitions and complaints is permitted as a further participation option, a very vague principle that primarily concerns the rule of law aspect.

Petitions, referenda, and plebiscites are possible in principle, but only in special cases and to a limited extent. The procedures are regulated by a Bundestag resolution and regulations of Federal States. Compared to the effect of the afore mentioned lobbyists, these forms of participation are relatively ineffective. Petitions are statements without binding character, referenda are limited to a few legally possible decisions and thus exposed to great hurdles, citizens' petitions at regional level are laid down in municipal ordinances.

Second, notice that also children and adolescents have rights for participation and should exercise them with respect to becoming full citizens in the future. Thus let us have a look at the laws for participation of children and adolescents - taking international and German regulations into account (Turek, 2012).

For instance, the 'Deutschlandfunk' (2021) stated recently, that children's participation in Germany is not yet a matter of course: According to the representative study by World Vision (2018), there are major deficits in schools of all places. This is a fact, even though participation is enshrined in law in Germany, both in the school laws of the federal states (Kulturministerkonferenz, 2020) and via the UN Convention on the Rights of the Child and the UN Convention on the Rights of Persons with Disabilities, which have the status of federal law in Germany. Even the Standing Conference of the Ministers of Education and Cultural Affairs of the Federal States and the Federal Ministry for Families make recommendations on 'human rights education in schools' (Kulturministerkonferenz, 2018) and on quality standards for children's participation. However, the practice of participation by children and young people often looks different. Also, for vocational schools, there is the fact that even though the state ministries of education and cultural affairs consult the student councils, central areas lie with the chambers, says the state student representative for vocational schools in Bavaria.

Without going into details, we suppose that the situation in other European countries are more or less the same: Legal regulations exist, however their usage is far behind possibilities, that means, real participation of individuals or groups does not or only partly exist - whatever the reasons might have been. Looking forward, already existing digitalisation and communication technology seems to be the basis as a 'game changer' regarding citizens' participation. However available technology is only one aspect, citizens also have to be aware of real problems they are willing and able to solve in groups.

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Process-oriented group activities for participatory problem-solving

For supporting sustainable consumption and production by citizen's participation in group activities, from a psychological point of view, the citizens are performing group problem solving and decision making. As a consequence, involving citizens in group activities for solving problems and elaborating ideas and suggestions for policy makers, may stimulate and support behavioural change, for example, with regards to sustainable consumption and production. The underlying rationale for this claim is as follows: as it will be outlined in the section 'Procedures for 'representative' participation of citizens in councils for problem-solving', the perceived justice of a decision or problem solution – and in consequence, its' justification – is considered as higher, if the individuals were involved in the decision making and/or problem solving process; even if the final decision and/or solution is not in line with their own, initially preferred decision and/or solution (Brockner and Wiesenfeld, 1996). If such participatory group activities lead to a higher justification, it is reasonable to assume that the individuals' commitment towards the final decision and/or solution is increased. Such an increased commitment may reduce the above mentioned 'attitude-behaviour gap' - even if such a reduction may be reached by overcoming cognitive dissonance (Festinger, 1957), i.e. changing and adapting attitudes due to the change of the behaviour. In addition to that, being confronted with ideas from others with different backgrounds, and in particular in the context of diverse groups, may lead to more acceptance towards attitudes, solutions and decisions that are not perfectly in line with one's own (Brandstätter and Schuler, 1976).

Different models exist on describing stages, phases, or steps of a collaborative problem solving process (e.g. Bell, 1982) or by suggesting facilitating conditions (e.g. McFadzean and Nelson, 1998); among them, is a generic one by University of Minnesota Libraries Publishing (2013):

- *Problem definition*: Define the problem by creating a problem statement that summarizes it.
- *Problem analysis*: Analyse the problem and create a problem question that can guide solution generation.
- *Solution generation*: Possible solutions should be offered and listed without stopping to evaluate each one.
- *Solution evaluation*: Evaluate the solutions based on their credibility, completeness, and worth.
- *Solution implementation and assessment*: Aside from enacting the solution, groups should determine how they will know the solution is working or not.

Of course, each of these five steps of collaborative problem solving can be divided into smaller sub steps, e.g. *Problem definition* includes detecting the problem, *Problem*

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analysis includes goal setting, *Solution generation* includes brainstorming, *Solution evaluation* includes decision making, and *Solution implementation and assessment* includes concrete actions and later assessments in order to determine the sustainability of the implementation.

The question remains, if face-to-face group activities are as efficient, effective and successful as virtual or digital group activities (e.g. Purvanova, 2014). On the one hand, it is reasonable to assume that technological solutions to facilitate virtual meetings and group activities are getting more and more advanced in the near future. On the other hand, such virtual or digital group activities have several advantages: they can be more spontaneous, and more people may be able to participate due to their (comparatively) independence of a certain location and the lack of time constraints.

Thus, the questions arise, which methods and procedures of citizens' digital participation in groups are currently available, common, and ready for digitalization and which of the more 'traditional' approaches of citizens' participation can be digitized, for example citizens' assemblies, opinion polls, petitions, demonstrations, participation in political parties or citizens' initiatives (see also Kubicek et al., 2009). A few examples are online platforms such as U_CODE (2020), an 'Urban Collective Design Environment', Change.org (2007) for initiating online petitions, or aula (2014), that aims to enable students to participate in decisions in school-related topics.

Procedures for 'representative' participation of citizens in councils for problem-solving

Of the methods and procedures currently in use, however, another participation method is currently favoured in Europe (Germany, Ireland, UK, etc.), a modified form of agile hackathons, and will be considered in more detail here: Randomly and representatively composed small groups develop topic- and problem-centred proposals for activities and actions to be implemented by citizens, authorities, or other stakeholders. The overall objective is to involve a representative set of people composed of small teams with the task to work out proposals and solutions for a given challenge.

The new feature of current citizens' councils is 'random selection / sampling' or 'drawing of lots' (Franke, 2017). Thus, currently, citizens' councils are randomly selected people who, with the support of moderators and experts, work in small teams on a joint position on a given issue and discuss the result with politicians. Examples are 'Citizens' Council on Germany's Role in the World' (Germany's Role, 2021) and 'Citizens' Council on Climate Protection' (Deutsche Welle, 2021). The random principle is intended to ensure that the selection represents the population to be considered.

The main advantage of such a random selection is that one of Leventhal`s rules to ensure procedural justice (Leventhal, 1980) is fulfilled – at least from a statistical point

of view: representativeness. A sufficiently large set of smaller teams that constitute the citizens' council, each team consisting of up to ten individuals which were randomly selected from the population, should represent the population. In addition to that, every citizen has the same chance to be chosen for a citizens' council. On the downside, minorities could be even more underrepresented (compared to their already smaller group-size in the population) in the outcome of the decision: If majorities dominate nearly all single smaller teams constituting the citizens' council, and the 'winner-takes-all principle' is applied to come up with suggestions and recommendations from the single teams, minorities may not have the chance that their suggestions are reflected in the decision of the council. The winner-takes-all principle is for example applied in case of the US majority vote system.

However, also other selection processes and rules on how to select members for the smaller teams are feasible (for a schematic overview see Figure 1; inspired by Allianz Vielfältige Demokratie, 2017).
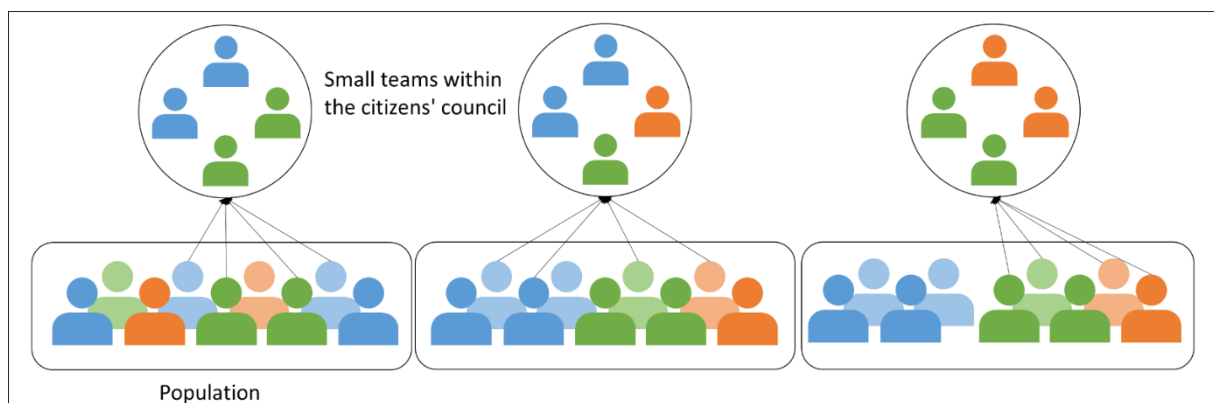

Figure 1. Schematic overview on prototypic selection rules for members of the smaller citizens' council teams: random selection from the population (left), quota selection process (middle), and quota selection process from pre-defined subgroups (right).

A quota selection process would ensure that at least a single member from each subgroup is represented in the smaller teams. This would have the advantage that the voices of minorities (or coalitions of minority groups) are more likely to be reflected in the final outcomes, i.e. suggestions and recommendations of the citizens' council, to be implemented by the policy makers. However, to ensure high quality some disadvantages have to be solved: First, the question is what variables (e.g. gender, age, socio-economic background, etc.) to include in defining the quotes / subgroups. Second, who is authorized to decide upon the selection of these variables – policy makers? For example, right-wing policy makers may not want to include people with migratory backgrounds. Third, it is questionable if individual members of a certain subgroup (defined by others) actually consider themselves as belonging to this subgroup. And finally, even if a certain individual identifies herself/himself as a member of a particular subgroup, the basic question is if individuals can actually represent a

larger collective. A basic premise of identity politics is the assumption, that members of social groups (e.g. based on race, gender, sexual orientation, etc.) share the same (or at least similar) experiences and that these experiences shape common belief systems and political attitudes (e.g. Crenshaw, 1991).

A more restrictive quota selection process (see Figure 1, right) would include only subgroups who would be actually affected by the decision. As an example, it could be argued that for the decision on where to build a new kindergarten within a city-district, only parents of younger kids should be included in the citizens' council. Here, the same open questions and potential disadvantages from a democratic and social justice perspective as for the quota selection process described above, remain. In addition to that, who has the authority to decide upon the inclusion / exclusion of certain sub groups? As for the previous example, nearby residents of the potential locations of the 'new kindergarten' may also want to participate in the decision process.

Results and Discussion

Surprisingly, the topic of citizen participation has only recently 'boiled up' again, although, for instance, (a) citizen participation existed in Europe more than two thousand years ago (Athenian Democracy, 2021), (b) Hannah Arendt already proposed citizen councils more than 50 years ago (Ledermann, 2019), (c) electronic technology and computer conferencing for citizen participation were used as early as 1975 (Sheridan, 1975) and 1979 (Crickman and Kochen, 1979), respectively, and (d) in Germany, an Internet-based citizen participation platform was developed and tested as early as 2001 (Märker, Hagedorn, Trénel, Gordon, 2001).

Experience so far has shown that citizens' interest in such a form of participation is very high. However, difficulties have also become apparent that suggest further development of participation instruments.

The problems can be outlined with the following points:

- *Selection principle*: The random selection chosen is very understandable in order to achieve representativeness. However, one problem associated with this is of a demographic nature. Our population is ageing and thus the proportion of old people is increasing disproportionately. On the other hand, major political decisions are about long-term effects that affect the old much less than the young. Random selection, however, would inevitably lead to an overrepresentation of the old. The selection would therefore have to be linked to the impact on different stakeholder groups in a form yet to be found.
- *Group size*: Another aspect is the group size. Currently, groups most often consist of far more than 10 people, which is suboptimal from the point of group *problem solving research.*

- *Moderation*: The next problem is the selection of moderators and experts. It has been shown that with the selection of moderation and expert input chosen so far, the results were and are "polished by consensus". In this respect, the question arises as to how the various interests can be supplemented/supported by appropriate expert input.
- *Topic setting*: Topic setting is another aspect that should not be left to chance or to a small interest group. A rather problematic example was the Citizens' Council "Germany's Position in the World". The topic was deliberately predetermined by the Bundestag because too many conflicts were feared with the topic of "climate protection".
- *Adoption of results*: And finally, there is always the question of whether the results will be adopted. In this respect, too, there are initial experiences that make it clear that the motivation of the people involved suffers when they experience that the hard-won results disappear in a drawer.

Nevertheless, in summary, compared to the forms of participation offered so far, digital citizens' councils are a new instrument of participation that can potentially have an impact on political decision-making. One of the most important features is that in principle every citizen has randomly the chance to contribute. Insofar the method can (directly or indirectly) contribute to representative democracy using modern technology, and thus, modernizing and improving citizen participation.

Output-, action-, and impact-oriented participation of citizens in councils for problem-solving

Above, the question was addressed how citizens can and should be adequately statistically represented in differently composed groups in order to 'give them a voice' and to influence political decisions and actions. Until now, it has been proposed that the interests of the majority of the citizens should be represented in those councils, and also the interests of the minorities have to be taken into account.

In the following, however, the participation of citizens in differently composed groups will be mentioned from a different perspective. Specifically, we address the question how digitized group-work can be used to ensure that (a) as many possible relevant points of view and potential solutions are not only discussed by many different councils when trying to solve a complex problem, but also (b) lead to concrete problem solutions and sustainable actions. In this context, each alternative for a potential solution is of equal importance, regardless of how many people or groups prefer a particular alternative. Thus, even a potential solution proposed by only one individual may be realized – rather than a solution originally contributed by a majority of people or groups.

Of course, in the problem-solving process, a decision-making and implementation phase must be also provided, and the sustainability of the implementation should be

evaluated in a follow-up phase. Sustainable and transparent impact is important not only for solving a detected problem. The method of citizens' participation will not be used any more in the future without tangible impacts, rewarding participants' efforts and contributions. The method needs to have long lasting success.

With these aims in mind, the general question arises, how to design the participation and problem solving process with respect to its' final sustainable impact. How to create collective sustainable problem solving processes based on distributed intelligence of humans, machines, and digital connectivity?

Rather than presenting solutions, we will identify questions for future research, creating potentially new methods, and enabling measures to establish a basis for bottom-up approaches.

In particular, several specific aspects need to be specified for optimizing the method and foster positive aspects and avoiding negative ones; some of them are:

- What about taking each of the five problem solving steps as a separate problem solving step with input from former steps and as output for the next one?
- Each group of citizens can be assigned to the whole process or to a single step; either for problem solving and/or evaluating the work of other groups.
- Digitization allows to increase the number of participating citizens and groups without increasing the optimal group size and to use any digital means for supporting the groups and improving effective work. What critical mass of people must be reached in order to create new sustainable solutions and to correct existing insufficient decisions, made by politicians and policy makers?
- How to support the application of methods and models of computational and mathematical psychology in each of the steps and sub steps for problem solving in a transparent way?
- What about applying the power of artificial intelligent algorithms and to realize transparency of these methods?
- How to assess, predict and measure 'sustainability' of solutions by applying digital methods?
- Another important aspect of sustainability is the intended knowledge transfer, competence development and behavioural change of individuals and groups. How to assess these effects and how to use these effects for refining the involved feedback-loops?
- How to handle the amount of data, foster transparency, and automatically analyse, compare, summarize digitized results of participatory group activities.
- Finally, how to achieve an overarching goal of citizens' participation, namely, to involve 'the citizens' in the development and design of future participation projects, technologies and structures in a transparent, effective, and

environmentally friendly way, i.e. creating the future of digitalized citizens' participation. Of course, experts should contribute methodological approaches which are appropriate to move forward towards future digital participation.

There exists already a large body of experiences regarding impact-oriented group working, as well from the analogue and the digital world. Thus, for constructing and establishing citizen councils some of these methodological approaches and recommendations will be briefly mentioned:

There is the need to identify specific problems in given settings that might be local, regional, or national. The corresponding required skills encompass analytical thinking, knowledge, communication skills and awareness about the *Sustainable Development Goals* (SDGs) of the *United Nations*, the *Main Objectives of the European Union*, and the above mentioned Legal Aspects of Citizen Participation.

- One instrument that supports action learning is *Design Thinking* (Siang et al., 2021). The instruments ensure in-depth analysis of problems, taking into account stakeholder interests.
- Other important elements are inspiring examples and inputs from existing solutions.
- Furthermore, the process of design thinking requires the development of prototypes that need to be evaluated by stakeholders or experts to get feedback.
- Team and group organization should follow SCRUM principles (Latre, 2019) with sprint, daily meetings, reviews and retrospectives. Short sprints lead to quick results, feedback and success experiences, short daily meetings are the basis for coordination and improvements. Reviews with e.g. experts ensure critical view on proposals and retrospectives improves the team work of the group.

These aspects allow to improve at least some of the relevant analogue and digital components: moderation, team organization, expert input, and impact.

Combining representative and impact-oriented approaches, and overcoming the gap between knowledge/motivation and action

The two described approaches are not mutually exclusive – on the contrary, they complement each other. The result of an impact-oriented process cannot be realized without sufficient acceptance of citizens. The representative approach is a prerequisite in terms of a bottom-up process.

However, there are two obstacles of a similar character: (a) the gap between knowledge and motivation at one hand and action at the other, (b) between the results of citizen councils and actions of stakeholders or policy makers.

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Often, the results of citizens' councils affect the citizens themselves, i.e., results are addressed by and to themselves. The required knowledge may have been shared with others, and the motivation to change behaviour may have been stimulated and aroused. However, this does not necessarily trigger actual behavioural change and corresponding actions, even not in the absence of *learned helplessness* or other barriers. Bridging the gap between knowledge and motivation on the one hand, and transforming motivation into actual behavioural change on the other, is extremely difficult to achieve, as already indicated by the different theoretical and empirical approaches mentioned above (see also Albert et al., 2021; Bedek and Albert, 2019; Hagger et al., 2020).

It seems reasonable to assume that motivation increases due to the participation in councils. As a consequence, the compliance to actually implement the councils` outcomes by concrete actions increases if previous councils have shown tangible impact. Besides the influence of the group situation, anticipated *expectation of success* and rewards play a role in changing behaviour. The extent to which people are affected and involved also has an impact. Local and regional behavioural goals are implemented more successfully.

Independent of the rules on how to select the individual members of the citizens' councils, how to compose the groups etc., it is essential for both the general approaches' sustainability and success on the long term, that the actual policy makers (legislative branch at the city district, city, federal or national level) actually implement the suggestions and recommendations of the citizens' councils. Consider that policy makers do not implement unpleasant suggestions and recommendations – this would have devastating effects on the citizens' motivation to engage in such councils and to invest time and creativity to come up with suggestions in the future. Most theories on (perceived) social justice / fairness, developed and empirically validated in the field of Social Psychology, distinguish between at least two forms of justice / fairness: distributive and procedural fairness (e.g. Cropanzano and Folger, 1996). Others also include a third form, called interactional justice (e.g. Skralicki and Folger, 1997). Distributive justice is the perceived fairness about the outcomes of a decision, procedural justice is the perceived fairness about the process to come up with the decision, and interactional justice, which is informed by the perception of the quality of the interpersonal treatment received during the decision making process. Even if people are not satisfied with the outcome of a decision for themselves, the overall perceived fairness remains high if the procedural justice is considered as high (Brockner and Wiesenfeld, 1996). Thus, procedural justice is considered as essential element for subjectively perceived fairness and justice. Leventhal (1980) suggested six rules on how to ensure procedural justice (called consistency, bias suppression, accuracy, correctability, representativeness, and ethicality), whereas these rules may be – depending on the concrete situation – some rules are considered as more or less

important (VanYperen et al., 1999).

Conclusions

For solving the problems at hand and shaping a sustainable future, the engagement and participation of citizens is absolutely necessary to achieve the required behavioural changes, either by the stimulation of new behaviours and/or the suppression/inhibition of old behaviours. The current 'silver bullet', that randomly selected people work out solutions in statistically representative groups is certainly an important step in the right direction, but it is too one-sided. Rather, many groups should be formed (a) in order to realize the different aspects and methods of group composition and (b) to fulfil the need for small working groups. The digitized results of the different groups can be combined in a bias-neutral way and subsequently evaluated. Evaluation and cross-validation can be done either by the existing groups or by systematically newly composed groups. Groups can also be formed in this evaluation phase in which control- and communication-expertise might be more represented. Semantic technologies can be used to make the flood of digital information manageable and communicable in a transparent way. Follow-up feedback procedures guarantee that the impact of participation is recorded and communicated. In this way, the motivation of the participating citizens can be maintained. It is possible that, in the sense of *observational learning*, even those citizens who have withdrawn from participation due to *learned helplessness* may become active and involved again.

Finally, it should be pointed out that from a psychological point of view there are problems of behavioural change that are difficult to solve and resistant to change (addiction, hatred, habitually behaviour). In such cases, for example, the question arises whether 'unethical', non-participatory methods of behavioural change seem appropriate, i.e. through regulations and coercion. For example, the wearing of seat belts was introduced against the majority of car drivers. The current switch to smart meters is in many cases against the declared will of consumers.

The authors take the view that in all these cases, too, the participation of individuals and groups concerned is necessary in order to achieve sustainable behavioural changes.

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