The problem of low participation in participatory budgeting from the perspective of adoption of innovation

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Abstract

Information and Communication Technology based tools for e-participation, which significantly lowered the entrance cost for citizens, augured widespread presence of citizens in the policy formulation process. However, even after years of practice, citizen engagement in e-participation remains low, especially in relatively new democracies, contributing to imbalance and misrepresentation of citizens' opinions. We present insights from the area of innovation adoption and propose an analytical framework for assessing e-participation initiatives' potential for eliciting wide citizen participation. In our study we examined participatory budgeting in 18 major Polish cities and established that local authorities often fail to make participatory budgeting a successful innovation in terms of inclusion and diversity by overfocusing on needs and expectations of those who participated in the process (10% of population). Officials assessing the success of participatory budgeting only through the lens of its early adopters risk not addressing the needs of the remaining 90% of the population.

Keywords: participatory budgeting, e-participation, adoption of innovation

1. Introduction

The essence of democracy is giving citizens the power to govern themselves directly or through elected intermediaries. Active participation of the people and equal rights in decision making lay at the core of democratic systems. More pragmatically, the rationale is that citizens should be able to tell what is good for them so policies developed with their participation would better answer their needs and therefore be more readily accepted. These days the emerging trend is to enable direct participation of as many citizens as possible in the process of policy making (Komito, 2005; Markoff, 2015), shifting the focus from representative to participatory democracy. Citizens are asked to express their opinions, state their values and priorities (Voinov & Bousquet, 2010), share their observations, ideas and wisdom. They are also exposed to the opinions of other stakeholders. A properly run, transparent participation process also has the advantage of helping citizens build social capital and develop collective awareness of how their community operates, as well as understanding the impact their own actions have on its functioning.

A common belief is that Information and Communication Technology (ICT) based tools for e-participation would capitalize on high exposure of participation processes on the Internet, the availability and visibility of the participation outcomes, as well as the anonymity of participation and the reduction of costs and time needed for participation. Therefore, ICTs might enable inexpensive access to the policy making process for many groups of stakeholders. The improvement would not only be in the quantity of responses but also in their quality – e.g. some groups for whom active participation has been so far too costly might be finally included, enabling true representation of the society. This way e-participation could elicit collective intelligence (Woolley et al., 2010) or the wisdom of the crowd (Surowiecki, 2005), which hopefully would provide better outcomes than policies designed by a limited clique of experts.

However, the uptake of citizen e-participation in public policy design is often slow (Sandoval-Almazan & Gil-Garcia, 2012) and the rate of participation does not live up to the expectations. Citizens quite often tend to be poor engagers. For example, out of 4.7 million inhabitants of Melbourne, Australia, only 86 stakeholders contributed in the consultations for Future Melbourne – a strategic, 10-year plan for the city (Liu, 2017a). It seems that introduction of a new technology alone is not enough to counteract lack of engagement as "(…) technology itself cannot empower the people or make the process more inclusive" (Liu, 2017a, p. 44). Low rates of citizen e-participation are not only disheartening but they can also undermine the core idea of the direct participation

process. This is because low participation can lead to a misrepresentation of the actual needs of the citizens if only certain stakeholders – e.g. big companies, NGOs or narrowly focused activists – become intensively involved, using the participation process to broadcast their own interests and overshadow alternative, bottom-up ideas of ordinary citizens.

For ICTs to make an impact on how policy is formulated, for them to allow an increase in citizen participation, policy makers need to consciously tackle the risks stemming from the use of novel technology in the e-participation processes. The most daunting risk comes from the introduction of novelty per se; further risks come from specifics of the available technology. Introducing novel solutions – especially with the aim of spreading their adoption through a representative and large sample of end users – is a challenging task. Therefore, we propose treating e-participation as a social innovation and drawing from the amassed knowledge on the process of innovation adoption to better comprehend the reasons for low engagement and to inform the design of e-participation projects. In what follows, first we present theoretical insights from innovation diffusion studies that could potentially offer practical solutions to reach out to a larger and more representative portion of the affected populations. Secondly, we depict a case study that we conducted in Poland. We have chosen the Polish case because we believe that the effectiveness of the e-participation process in countries with less established democratic processes is needed. We pose three research questions:

RQ 1. Who are the adopters of participatory budgeting?

RQ 2. To what extent does participatory budgeting satisfy the characteristics of successful innovation?

RQ 3. Can the evaluation of participatory budgeting profit from the proposed analytical framework?

2. Diffusion of e-participation as a social innovation

ICT-mediated participation in policy-making – although not groundbreaking concept for scholars and professionals – remains largely a novelty for ordinary citizens. Introduction of novel products and services and ensuring their wide adoption is a staple in everyday functioning of organizations and businesses. Therefore, we pose that the problem of low engagement in e-participation may be addressed from the perspective of research on adoption of innovation. We propose to draw from the vast research on diffusion of innovation to understand how adoption of e-participation – a social innovation – can be improved.

In his seminal work on diffusion of innovation, Rogers (Rogers, 2002) described it as a process in which a novel product or service, in our case ICT mediated participation, enters a market and spreads among the members of a community of potential adopters. Interestingly, different innovations diffuse at different speeds. Some ideas or novelties spread really fast, while others take much longer to reach a substantial part of the community. Rogers identified two factors that influence the speed and rate of adoption: characteristics of the innovation itself and the readiness of the adopters to pick up any innovation. What is crucial here is that adopters are not a homogeneous group and that their readiness to adopt is determined by a variety of psychological and socioeconomic factors. We propose to look at e-participation response rates as a consequence of both the features of the technological innovation at play as well as the natural segmentation of potential adopters of this novelty.

2.1. Traits of innovation

Rogers specified five dimensions on which innovations differ and which influence their adoption rate: (1) relative advantage, (2) compatibility, (3) complexity, (4) triability, and (5) observability. To ensure the uptake of e-participation each of these features should be considered before the launch of a participation process. First, the innovation needs to be perceived by members of the community as advantageous when compared to the solutions that it aims to supersede. Rogers clearly underlines that it is not the objective advantage of the innovation that should be considered but its evaluation by the community in comparison to the solution currently in use.

So far the cost and benefit analysis of the e-participation process in the policy cycle is mostly conducted from the perspective of the practitioners who launch the process. It is often underscored that thanks to e-participation governments can reach creative individuals to boost innovation (Liu, 2017b), gain access to information (Carter & Bélanger, 2005), better understand citizens (Chu et al., 2008) or gain the legitimacy for the policy (Smith & Dalakiouridou, 2009). On the costs side, time and effort required to manage the process and digest content produced by citizens, is considered (for a review of costs see Weerakkody et al., 2015).

What is lacking is a proper analysis of the costs and benefits from the citizens' perspective. It is often taken for granted that giving citizens the possibility of

partaking in policy creation and expression of their own opinions and the ability to protect their own interests should be enough to ensure their engagement in e-participation. But are these benefits really enough to entice them to adopt the innovation, especially when compared to the existing practice of face to face consultations or lack of such practice at all?

Second, the innovation needs to be perceived by members of the community as compatible with their values, needs or past experience. There are two points that follow from this. One is that the less often the citizens were asked to contribute to policy making in the past, the lower will be the adoption rate of e-participation solutions. In other words, the first participation process will be the most difficult to solicit and it has to be carefully planned. The other point to draw from the compatibility feature is that participation should be related to local specifics. Values prevalent in the community should be addressed, for example by stressing that direct participation in policy making fulfills the need for justice or equality. If other values are cherished locally, like power or hedonism, e-participation can be designed to address these values as well. Moreover, the transplantation of successful solutions from other contexts – e.g. another country or region, can be a challenge due to the incompatibility of value systems. In such a case analysis of value differences should be taken into account. Shwartz's theory on basic human values (Schwartz, 2012) can be used as one of the approaches to study values in a community.

Third, the adoption rate of innovation depends on its complexity - the degree to which it is assessed as difficult to understand and use. Using ICT for participation in policy making introduces two sources of complexity: the subject of the policy that is being formulated and the technology for participation. In order to boost adoption the problem should be presented in such a way as to make it clear for contributors with very varied background knowledge. The materials have to be understandable to the citizens who are mostly not familiar with legal or administrative jargon. Visual and interactive content can help reduce the complexity of the issue (Spence, 2001; Yi et al., 2007).

Similarly, the tasks and interfaces of the platform should be designed with very simple tasks visible first (e.g. voting, rating), with more complex forms of contribution accessible for the highly engaged, and with information about time needed for performance of a task. The barrier for entry should be minimal even for people not advanced in use of ICT, but ICT savvy users should be able to contribute more through commenting on others' work, writing their own suggestions, giving feedback to proposed solutions, etc.

Such an approach could theoretically not only result in complexity reduction but might also influence the fourth factor determining the success of innovation uptake - trialability, i.e., the degree to which an innovation may be tested. People often feel unsure about new solutions. They experience a mix of excitement and anxiety which might cancel each other out and lead them to reject the innovation. The possibility of trying the novelty out, without any negative consequences might ease the negative emotions evoked by being exposed to a new solution. If citizens are engaged first in simple activity, e.g., voting for or against policy or rating problems to be tackled for future policies and are given positive feedback for the sole act of contributing, then they might become more open to do something more risky next, e.g., expressing their opinions in written form and exposing themselves to potential criticism.

Finally, observability of the results of innovation may influence decisions to participate. When citizens can see how their input translates into actual policy they become more inclined to participate. However, observability means not only transparency of the process of contributing, but also direct and immediate feedback on how the contributions combine to form the policy. Feedback is a vital aspect in acquisition of new skills and habits (Anderson et al., 1995; Schmidt et al., 1989) and therefore the possibility of observing the results of one's e-participation can help the innovation spread. The feedback can take different forms. It can be data on the number of answers and comments to the initiative, visualization of collected data, meta-analysis of the content to name just a few.

To sum up, "innovations that are perceived by individuals as having greater relative advantage, compatibility, trialability, observability, and less complexity will be adopted more rapidly than other innovations" (Rogers, 2002, p. 990). However, diffusion of innovations is not only about the new product and its characteristics but also about the people who are potential adopters. It is important to notice that diffusion of innovation is a social process – by talking to each other, adopters spread information about the innovation together with its evaluation. Social influence is therefore a very important factor determining the future success or failure of an innovation and may play a very important part in spreading the concept of e-participation.

2.2. Adopters

People differ in their readiness to adopt novelties. Some cannot wait to try something new, others are rather reluctant about novelties and would prefer the world to stay as they know it. Based on the results of numerous case studies, five segments of the population of potential adopters have been identified: innovators, early adopters, early majority, late majority, laggards (Nowak et al., 2013; Rogers, 2002). Each segment has its own distinctive characteristics and its own timing of adoption – innovators are the first to try out the innovation while laggards are the last ones. We can draw from this typology to understand how to help spread the innovation of e-participation in policy making.

Innovators account for only 2,5% of the population but they exhibit the greatest potential of creativity. They are willing to invest their time, energy and money just to be part of an innovation. They are well-situated and are not afraid of risk taking. In e-participation processes they would be the first to respond to a new initiative if it speaks to them. However, the problem is that they often lack a wider perspective and might be unaware of the general population's preferences. They could be prone to imposing their own point of view as the optimal one, which could be far from being representative for the community. If they were to become sole contributors in an e-participation project, their proposed solutions might turn out to be too complex and laden with an excessive degree of uncertainty to be adopted by other segments of the populace.

The second to adopt an innovation are the **early adopters**. They account for 13,5% of individuals. Their motivation is strongly driven by social prestige. Similarly to innovators they are wealthy, personally confident and well informed, which allows them to deal with uncertainty and complexity pretty well. They are often local leaders who serve other members of the community with information or advice about innovations. If convinced to e-participate they might propagate this activity widely as they are well-connected and influential. Their role in speeding up the diffusion process has been confirmed in many studies (Farquhar et al., 1990; Puska et al., 1986). Viral marketing and social network research tested how and when initial seeding of ideas to identify early adopters results in widespread adoption (Centola, 2010; Iyengar et al., 2011; Weng et al., 2013).

If the innovation proves to be affordable, relatively easy and quick in use it has chances to be taken in by the **early majority** (Robinson, 2009). Early majority makes up 34% of potential adopters. They are pragmatists who are not afraid of progressive projects, but they are also more risk averse than the earlier groups of adopters. Therefore, they will not engage in an activity that has high potential of failure. Unlike early adopters they do not like complexity. They will join an e-participation project if the task is well defined and if they are convinced that their contribution will lead to a successful policy formulation. Therefore, to attract the early majority the e-participation process has to be already recognized as useful by many citizens and the contribution to policy making needs to be presented as something socially desired.

The two remaining groups of adopters are **the late majority** (34% of individuals to adopt an innovation) and **laggards** (16% of adopters). Late majority is mostly driven by social norms and peer pressure. They are skeptical, cautious, risk averse, and cost sensitive. In other words, they would participate in policy crowd-sourcing if the majority around them were doing so and if the profits of participation were clearly relevant to them. However, the late majority is not only influenced by individuals who have already adopted the innovation but also by laggards who are reluctant to adopt any novelty. Laggards prefer to maintain the status quo as they see any new activity or product as very risky. If representatives of the late majority are surrounded by other representatives of late majority and laggards, the chances for them to adopt an innovation are rather low. This is a probable scenario, as in general, people tend to associate with those who are similar to them (McPherson et al., 2001).

When planning a direct participation process (where the goal is to better serve the needs of citizens), it is crucial to attract representatives from all segments of adopters – those who are more progressive and risk taking but also those who are rather conservative and more risk averse.

So far, e-participation processes seem to attract significantly less than a "crowd" of contributors (Liu, 2017b; Prieto-Martín et al., 2011). The opinions and ideas presented in the participation process might be objectively interesting but it is important to remember that they represent the viewpoints of just a handful of citizens – probably innovators and early majority – those who are affluent, willing to take risks and adept at handling uncertainty. Consequently, the readiness of a society to embrace solutions derived from such processes may, surprisingly, be much lower than anticipated by authorities employing a tool for widespread participation. Late majority and laggards (50% of the population) might have different opinions but as they are reluctant to adopt the novelty of e-participation, their views remain unseen at the stage of participation process. The crucial point here is that

their late position in the adoption chain is correlated with their views – they represent the conservative segment, resistent to changes and not as well-situated as the earlier groups. Therefore, their absence in participation may directly translate into non-acceptance of the solutions that are derived from such a process. This lack of acceptance from the late majority and laggards might hinder any trials of implementing the solution, which will only frustrate those who sacrificed their time and effort by joining the process. In a longer perspective, this might have catastrophic consequences for engagement – as those who decided to risk and participate might withdraw from it in future due to the negative experiences.

3. Materials and methods

The quantitative and qualitative analysis of participatory budgeting practices covered 18 major cities in Poland: Warszawa, Kraków, Łódź, Wrocław, Poznań, Gdańsk, Szczecin, Bydgoszcz, Lublin, Białystok, Katowice, Toruń, Rzeszów, Kielce, Olsztyn, Zielona Góra, Opole, Gorzów Wielkopolski. The chosen cities are administrative centers of all 16 voivodeships (in case of two voivodeships the administration is split between two cities). The voivodeship is the highest-level administrative division of Poland. Cities in the studied sample are spread all over Poland and vary in size. The biggest city is Warsaw with 1.76 million inhabitants while the smallest is Gorzów Wielkopolski with a population of 0.12 million. All cities launched participatory budgeting in a similar moment - from 2013 (five cities) to 2015 (one city).

The process of participatory budgeting can be divided into three main phases: submission of projects (all city dwellers are allowed to submit a project), the verification of the projects by local authority (local authorities verify whether the project complies with the regulation and city's strategy), and voting on projects by all citizens. The projects can be submitted in one of two categories: city-wide or district projects. There are some minor differences in the way participatory budgeting is implemented in different cities, e.g., how many projects one person can submit, how much support a given project must receive from the citizens to go to the voting stage or how many different projects can a person vote for.

Moreover, in the first run, different groups of citizens were allowed to participate in different cities: two cities had no age limit, in one city everyone who was at least 15 years old could vote, in 7 cities the age limit was set to 16, and in three cities only adults could vote. In the case of 5 cities, we were not able to find information on eligibility. After a while, the age limit was abolished and now, in all cities, every citizen can participate. Due to this difference, we use the percentage of eligible residents for comparison.

In this paper, we present the results of a study in which we gathered and analyzed secondary information on participatory budgeting, like official websites of city administration (18 cities), voting applications (10 cities), evaluation reports (15 cities), legal documents and city resolutions regarding the budgeting (18 cities), maps with projects (12 cities). The materials was coded by two researchers with the following codes: advantage, compatibility, complexity, trialability, observability.

4. Results

4.1. Adopters of participatory budgeting

One of the main questions of our study concerned the adopters of innovation. Who are the people that take part in participatory budgeting and has this group widened over the years? In the first edition of the participatory budgeting the mean rate of submitted proposal per person was 0.1% (SD = 0.05%, the mean was calculated on all 18 cities) and 17.78% of eligible residents voted (SD = 8.9%, the mean was calculated on 15 cities due to some missing data), meaning that the possibility of submitting own project appealed only to innovators while the possibility of choosing the project by voting managed to attract wider population: innovators, early adopters and even early majority in case of eight cities.

In that way the first edition seemed to be successful. The innovation had a potential to diffuse to other groups of adopters who are more careful in applying novelties, i.e., late majority. However, after years of practice (from 7 to 9 years) the mean rate of submitted proposals per person was still 0.1% (SD = 0.4%) while the voting participation dropped on average to 9.72% (SD = 4.01%). Inspection of turnouts in individual cities (see Figure 1) reveals a decline in voting interest among residents of 13 out of 15 cities. Over time instead of attracting wider groups of residents the participatory budgeting lost its popularity among adopters. In the latest edition only innovators and early adopters took part in voting, reshaping the city according to their particular needs. Only one city managed to exceed the threshold of 16% of its population, meaning that some representatives of the early majority might have been involved in the initiative.

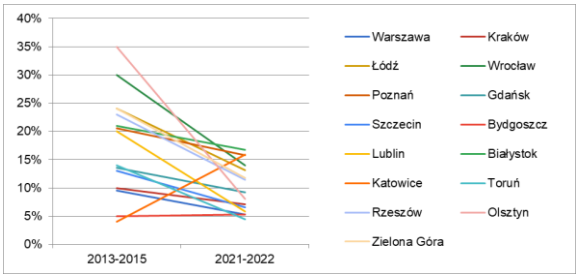

Fig. 1. Turnout in voting in participatory budgeting in the first edition (2013-2015) and in the last edition (2021-2022) for 15 of the studied cities.

4.2. Participatory budgeting as an innovation

As the adoption of participatory budgeting did not seem to go beyond the early minority or sometimes even early adopters, we looked closer at the traits of innovation from the perspective of Rogers' theory. We wanted to learn to what extent participatory budgeting meets the requirement of the five traits that make innovations desirable by all segments of adopters.

Firstly we investigated whether the innovation was perceived by residents of Polish cities as **advantageous**. To understand if the novelty has a relative advantage it is essential to investigate the context in which it was introduced. Before the introduction of participatory budgeting, citizens in Poland could only ask local administration to make particular changes in the city, but the whole planning of interventions and renovations was on the side of the local administration. The citizens could expect, e.g. that streets would be in good condition and that street lights would be working. Nowadays, proposals that are voted on in participatory budgeting concern quite often repairs of the city infrastructure: streets, pavements or lights. So far these problems were in the sole domain of local administration. As some citizens underlined in evaluations, residents should not decide which streets to repair as this work should be performed seamlessly by the city: "The participatory budget should not replace the city's budget in its tasks." Moreover, according to 64% of respondents in one of the evaluations run in Opole, the citizens' projects seemed to satisfy only narrow groups of inhabitants: children or teenagers, making the voting unattractive to those who were not direct beneficiaries of the change. Citizens did not perceive any advantage in spending time on screening projects that would not be later used by them. Therefore dwellers of major cities perceived participatory budgeting as something that answered the needs of local authorities rather than citizens'.

When looking at the age histograms and gender frequencies of citizens who participated in participatory budgeting, we found that there were three groups of citizens underrepresented in voting: young people, seniors, and men in general. Women tended to vote more frequently than men, however men submitted proposals more often than women.

Moreover, what seemed to bother citizens quite often was the procedure that limited their role to voting on the best projects. They felt that a more deliberative way of choosing, based on discussion, would be a better approach to changing cities and making them more liveable.

The second studied feature was **compatibility with norms and past experience.** Here we considered two kinds of compatibility: compatibility of the participatory budgeting procedure with local norms and a compatibility of submitted projects with norms and values of the local community. The first discrepancy that we found between the imposed procedure and norms was that all citizens were eligible to vote, including newborns – there is now no minimum age requirement, which is uncommon in other national or local democratic processes, such as elections. Some citizens perceived this expansion of the voting groups as a gateway to manipulation of votes.

Moreover, citizens often seemed to have negative feelings about projects that won because they were not compatible with their values. Therefore some citizens opted for adding the possibility of giving negative votes to projects that they find wrongful. It would enable blocking some controversial projects that are not in line with norms or habits of the majority. When controversial projects are imposed without deliberation, citizens might associate participatory budgeting with negative feelings and exclude themselves from the process in the future. The awakening feeling of helplessness and inefficacy might be a strong force blocking the spread of innovation. Interestingly we found that although this problem and solution (negative vote) was mentioned by participants in the evaluations, in many cities it has not been officially addressed by the local authorities.

Moreover, in the situation of low participation, when less than 10 percent of residents choose the winning project, people had the feeling that projects that won were not the embodiment of real needs of citizens but rather satisfied preferences of strong minorities, like religious groups, associations of football fans or school communities who voted on the project indicated by their leader, not even considering other projects. The feeling of impossibility of outvoting such unified groups discouraged individual adopters of the innovation. Surprisingly, citizens came

up with a remedy here. They believed that splitting the general budget into subcategories might limit the power of strong associations. However, such a solution would increase the complexity of the participatory budgeting procedure, which could limit participation.

The analysis of the documents reveals that the local administration is not aware that they are responsible for establishing a new norm: participation in participatory budgeting. With low knowledge about participatory budgeting and voting, inefficient promotion of the initiative, and lack of appealing projects it might be hard to implement this new norm in the society. Moreover, the norm cannot be promoted only in digital spaces, citizens often voiced that there was a need to meet and discuss projects during festivals, picnics or workshops. ICT solutions are not able to replace grassroots work when it comes to development of new habits. The lack of trust in the process and intentions of authorities (a norm in Poland) is an additional argument for more in-person promotion of participatory budgeting.

The third trait of innovation that influences the speed of its diffusion is **complexity**. More complex products need more time to be adopted. In case of participatory budgeting there seems to be some complexity that holds up the diffusion. Although the voting rules seemed to be simple, there were some aspects of participatory budgeting that are suboptimal and time consuming. Firstly, with the increasing number of projects on which citizens can vote, the time needed for studying them also grows. If citizens wanted to make informed decisions, it would cost them a lot of time. The need of cataloging the projects according to their specificity was often raised. Moreover, voting often requires remembering a unique name or number of the project which is difficult for some citizens and often unnecessary. It would be enough to allow citizens to vote directly under the description of the project instead of using two lists: one with descriptions and the second one for voting.

The most popular verification procedure for voting requires a mobile phone that can be an obstacle for children and older people. Although voting on paper forms was allowed in city offices, it does not seem as a good alternative for kids who often cannot commute alone or the elderly who might experience mobility problems.

The fourth trait of successful innovation is **trialability**. The responsibility for choosing the right project might be blocking people from stepping in and choosing the project of their liking. The unfamiliarity of the voting system might be the additional obstacle. Therefore, respondents often declared that more meetings in physical space should be organized and that more small scale projects should be financed. This would allow people to test the tool and mechanisms of participatory budgeting without the fear of appearing uninformed. Good visualization could also improve trialability. We found that there were only a few cases of well-executed visualizations depicting the proposed changes in the project. In many cases, the project is presented primarily through text. People who struggle to imagine the final outcome of the intervention might hesitate to participate, fearing they might choose something they won't like in the end.

According to the evaluations conducted by the cities, trialability can be especially important in the first phase of participatory budgeting – at the stage of submitting proposals. People unfamiliar with writing projects and making budgets need more time in person with a clerk to dispel doubts.

The last desirable feature of innovation according to Rogers is **observability**. In using an innovation it is very important to receive fast feedback on its efficiency and usefulness. The level of observability can be tested best by the access to information about implementation of past, winning projects. In many cities a list of winning projects was published very fast on the website of the office but the information about implementation of the projects that won in the past was less accessible. There was no one standard of doing it: there were long lists in pdf form, or long linked lists with descriptions and some photos; although sometimes it was unclear whether the attached photo had been made pre or post intervention. There were also maps on which a rising number of interventions were cluttered and hard to follow. Moreover the realization of many projects was delayed and the websites were not updated. As a result people did not know which project won and what happened to it. For example, in Olsztyn 62% of respondents did not know any of the projects that garnered the most votes. As one respondent said "I think that the best promotion for participatory budgeting are its effects, and many people do not see these effects."

What seems to be missing is personalized information on the project that a particular citizen voted for. The effects of the vote would be more visible to the citizens if they were informed directly whether the project they voted on won, whether it was realized and how. Such a solution could inspire attachment to participatory budgeting and to the city.

4.3. Evaluation of participatory budgeting

The analysis of the evaluations run by most of the cities revealed that local administration focused on the first and second phase of participatory budgeting, i.e.,

submission of proposals by local citizens and verification of these proposals by offices. The voting phase is studied much less. Although this part included important questions about motivation and effectiveness of voting, it did not explore the problem of low participation. Evaluation was mostly conducted on people who participated in participatory budgeting process, and therefore the reasons for nonparticipation remain unrevealed and understudied. Misrepresentation of needs did not seem to be of concern to the local authorities.

5. Discussion

The opportunity to include citizens directly into the policy making process seems to have a great potential for improving the adequacy and adoption rate of policies. The success of many commercial endeavors to solicit ideas and solutions through crowdsourcing are inspiring (Roth, & Kimani, 2014; Schlagwein, & Bjørn-Andersen, 2014). Similarly, open ICT mediated collaboration communities, such as Open Source Software projects, bring a promise that collective intelligence can, indeed, be spurred and nurtured. Yet, when following the example from those successful cases, policy makers should also take into account the specific differences related to the policy formulation process. Directly applying solutions from commercial and open projects should be treated with caution, and some strategies should be outright avoided. Our study shows some major risks that should be considered when implementing e-participation processes based on existing crowdsourcing solutions.

The first risk is related to the concept of "open call". Open call is prevalent in ICT based collaboration as it welcomes anybody who wants to contribute. The rationale behind the open call is that a creative, excellent idea might come from anyone so all should be encouraged and none should be restricted from participating. However, this popular solution may not always be good for e-participation in policy making. Often, a closed call, targeting only those who are potentially the most important beneficiaries of the intervention, is a better choice – a method frequently employed in participatory budgets. By appealing to the sense of community or underscoring the local aspects of the problem and its possible solutions it is possible to engage a wider segment of the populace. Moreover, a locally developed solution – a well-fitted policy – has much higher chances of being adopted than an imposed one. For example, if in a participation process on traffic organization in a huge metropolis no one is restricted from participation, the dwellers from inner city might feel that their voice would be outnumbered by the voices of citizens of other districts. An externally imposed or simply influenced decision, even if grounded in elaborate analysis of the needs of the community and opportunities present, will never be as well accepted and adopted as a decision made by internal deliberation, especially when citizens are not consulted whether they want outside contributions.

It might be a good, enriching experience for citizens to be able to make decisions by their own means and to the end of their own possibilities as a community – even if those abilities are limited and could result in suboptimal choices. In the long run interaction in e-participation might built a sense of belonging to the community, might increase social capital among all segments of adopters or even enable collective agency, which can help the community make better decisions in the future (Rychwalska, & Roszczynska-Kurasinska, 2017). Generally, reaching out in an open search for solutions to local challenges can be very helpful, but we claim that it should be a community decision to do so.

The second risk is related to the notion "wisdom of the crowd" (Surowiecki, 2005). It is one of the most called upon statements to justify involving large numbers of people in the process of decision making. In short, it describes the fact that in most cases the average of estimates of a large number of people will be better than any single estimate. The caveat is that, mathematically, for this statement to be true the errors of single estimates must not be correlated. Only then the errors cancel out when computing centrality measures (mean, median) and a good aggregate estimate can be found. Moreover, the quality of the aggregate estimate depends on the variation of the single estimates – the more diverse they are, the better the general assessment (Page, 2008). This is what solutions such as crowdsourcing depend on. When voting on one project is managed by a leader of a formal or informal community these conditions are not met.

The final issue we mention here is that of intellectual property, which, although minor, might still affect participation design. In commercial crowdsourcing – crowd labor and tournaments mostly – the ownership of artifacts produced is transferred to the institution that opens the call. Moreover, in some tournaments or crowdsourcing without monetary prizes, all solutions submitted, including the ones not implemented by the organization, become its property. This strategy might be used by policy makers to ensure protection against possible claims especially when physical artifacts are produced. Yet, in many cases common ownership – especially of more intangible ideas – can be a great driver of social capital. It also

may encourage others to join at a later stage of the policy cycle. For some citizens it will be hard to join e-participation at the early stage when nothing yet is done, but they might be drawn to join a community that has already established potential, as proved by the intellectual artifacts it owns.

6. Conclusions

ICT has introduced profound changes into many areas of social functioning – it affects not only everyday socializing but also the spread of information and opinion formation. It is already on its way to change how policy makers draw data to develop policies. One of the biggest potentials in this area is to utilize ICT to push from representative to more participatory democracies – a system of governance that could potentially be more flexible and better fitted to the fast pace of changes that current societies face. Yet, for that to happen, the technology needs to be widely adopted by the citizens – the participants in the policy making process. If the adoption fails, instead of wiser and better fitted policies, the officials might end up with an amplified voice of an unrepresentative sample of those who can spare time, effort and cognitive capacities to embrace the novel technology.

To help e-participation spread it is necessary to design the process in such a way that this social innovation can appeal to all segments of possible adopters. To that end it should be presented as more advantageous than the prevailing model of intermediated policy making; the process should be compatible with the norms and values of the populace affected by the policy; the participants should have the possibility to try out both the process and the platform without any negative experiences; the participation should be simple, even for those not well-versed in ICT; and, finally, there should be easily understandable feedback for the contributors as to the process of participation and the resulting policy decisions.

Furthermore, attention should be paid to the process of social influence among the different groups of adopters – innovators, early adopters, early majority, late majority and laggards. Promotional materials should be targeted at many of these groups and should be specific to the group's characteristics. Moreover, the participation process – including the participation platform – should be adjusted for all groups, allowing different levels of contributions.

Finally, policy makers should be aware of the many risks associated with opinion formation and open contribution to ICT based media. A closed call for contributions from only affected populace might help encourage participation as well as make the adoption of resulting policies smoother. Communication with and within participants through social media platforms should be monitored to encourage many points of view and contributions from diverse groups of citizens. Finally, running an open forum for communication among the community, for presentation of the policies and solutions developed by contributors – and possibly for buildup of social capital – even in the time between e-participation projects, might help sustain engagement of contributors.

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