Power to the People? Applying participatory budgeting to evaluate transport policy decisions

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Introduction
Participatory budgeting has become a popular tool to involve citizens directly in policy decisions and gives inhabitants direct influence on budget decisions of local and regional governments. However, the design and outcomes of these experiments have rarely been studied by economists which is surprising because it allows for direct measurement of preferences for actual policy decisions. This research develops a novel participatory budget game (PBG) to support (transport) policy decisions that addresses some of the key deficiencies of existing approaches to citizen participation and referenda, namely: self-selection, time constraints of inhabitants and biased information provision by political parties and interest groups.

Background
Participatory budgeting involves the participation of non-elected citizens in the conception and/or allocation of designated parts of the public budget (Sintomer et al. 2008). Typically, in a participatory budgeting process citizens are the first ones to move by establishing their social priorities through a budget proposal. Subsequently, representatives have to react to the proposal, deciding whether to implement it or not (Aragones and Sanchez-Pages, 2009). As such, participatory budgeting combines elements from both direct and representative democracy. Participatory budgeting emerged in Porto Alegre (Brazil) in the 1980s and the instrument now extended to many other cities worldwide. Scholars observe that it is now applied in more than 1,000 municipalities in Latin America (Cabannes, 2004) as well as in western cities such as Amsterdam, Paris, Rome, Chicago, New York, Lisbon and Berlin (e.g. Sintomer et al. 2008). Moreover, participatory budgeting is among the fastest-growing democratic innovations in the United States and Canada (Public Agenda, 2016).

Participatory budgeting is extensively studied in the democratic innovations literature as the introduction of the instrument resulted in a massive participation of those segments of the population typically disengaged from the institutions of representative democracy (Aragones and Sanchez-Pages, 2009) and it holds the promise to increase transparency in public spending, build trust between government and residents and increase the legitimacy of public decisions (Public Agenda, 2016). Moreover, cities who adopted participatory budgeting indicate that tax revenues increased and tax delinquency dropped after the introduction of the instrument, possibly because the process allows the population to become aware of municipal resources, their limits and their origin (Cabannes, 2004).

Participatory budgeting must also be of interest to economists because the key aim of the instrument is to make government policies more responsive to the preferences of citizens (Aragones and Sanchez-Pages, 2009). Moreover, a key advantage of participatory budgeting is that it deals with the economic problem of allocating limited resources (Sintomer et al. 2008) and it constitutes a reliable channel for the transmission of information from the citizens to the legislator about their
preferences (Aragones and Sanchez-Pages, 2009). Finally, participatory budgeting can be portrayed as a novel application of welfare economics as the instrument seeks to investigate the social desirability of alternative economic situations (Boadway and Bruce, 1984). However, quite surprisingly, the design and outcomes of participatory budgeting have rarely been studied by economists.

We suggest that economic research can contribute to alleviate some of the problems and pitfalls of participatory budgeting. While direct citizen participation in the budget making process may result in a budget that better reflects communities’ greatest needs and values, some scholars have called attention to the high monetary and procedural costs of citizen participation (e.g. Irvin and Stansbury, 2004). Irvin and Stansbury (2004) emphasize that citizen participation inevitably increases cost per decision. They further point out that frequent meetings require a substantial time commitment which many citizens would prefer to avoid. This has the potential to lead to a poor representation of the general population, insofar as those with a high motivation to participate will be those that have the most to gain by influencing decisions, but also have the free time and economic resources to do so (Day, 1997). Irvin and Stansbury (2004) also warn that well-compensated professionals representing special-interests can dominate decision-making. Selection bias has been identified in several studies investigating participatory budgeting processes. Wittmayer and Rach (2016) report that predominantly white, middle aged well-educated males attended the participatory budgeting assemblies in Amsterdam (around 25 assemblies per year) and Public Agenda (2016) establishes that residents with less formal education were underrepresented among voter survey respondents in most Canadian and American communities (just 39 percent of respondents overall reported not having a college degree).

Our study aims to alleviate this the above mentioned pitfalls through applying an innovative web-based choice experiment which resembles participatory budgeting. A representative sample of inhabitants of the municipality Amsterdam and its agglomeration will participate in our study.

**Methodology**

We designed a novel participatory budget game (PBG) for the Transport Authority of the municipality Amsterdam and its agglomeration (hereafter: TAA) which will be played by a representative sample of 500 respondents living in this region. Respondents are instructed that the TAA decided to invest 100 million euro in improving the transport system in the period 2030-2032 and in 2017 decisions will be made regarding the allocation of the 100 million euro. Moreover, the respondents are told that the TAA will consider the respondents’ recommendations in their allocation decision. Subsequently, the respondents are presented with 14 ‘initiative projects’ that the TAA considers to include in the 100 million euro investment program. Both the 14 projects and the decision-making situation are realistic as the TAA actually has to decide which of the 14 ‘initiative projects’ are (not) included in the 2030-2032 investment program. The 14 projects can be categorized in four themes related to the four departments of the TAA: road projects, cycling projects, public transport projects and safety projects.

In the game, the projects will be characterized by several attributes such as costs, time savings of citizens that benefit from the project, safety improvements, changes in noise pollution and changes in air pollution. Respondents are asked to choose those projects that best match their preferences within the budget constraint of the TAA. For instance, it is possible for the respondents to select 3 large projects (30-40 million each), 7 smaller projects (15 million each) or a combination of larger and smaller projects. The boundaries for participating in a PGB are relatively low when compared to regular participatory budgeting assemblies, as respondents receive a monetary compensation, it takes
around 15 minutes to complete one game, and they can choose themselves when and where they complete the game.

In March/April 2017 PBG will be played four times by 500 respondents (experiments 1-4). Since our study is a first exploration of combining the concept of participatory budgeting with choice experiments we decided to test alternative PBG designs. Conducting multiple experiments allows us to investigate the extent to which the design of a PBG affects the portfolio selection of respondents.

In experiments 1 and 3 we assume that the budget of 100 million is fixed. Respondents are informed that when they do not fully allocate the total budget of 100 million euro of the 2030-2032 investment program the TAA will spend the remaining budget in the period 2032-2034. In experiments 2 and 4 the budget is flexible which involves that the tax payments of respondents will decrease in case they do not allocate the total budget. Hence, respondents are enabled to ‘vote’ for an option that no money is spend on transport projects in 2030-2032 which results in a tax reduction of 100 euro for each of the 1 million residents of the TAA Region. Furthermore, in experiments 2 and 4 respondents are also enabled to allocate the 100 million euro and – on top of that – pay an additional amount of taxes for the construction of additional projects. Respondents are told that the 100 million euros will be allocated through a majority rule which is in line with real-life applications of participatory budgeting (Aragones and Sanchez-Pages, 2009). That is, only if the majority of the respondents ‘votes’ against spending the total 100 million euros this will result in a tax reduction. Moreover, respondents are informed that their additional payments are obligatory in case the amount of money that has been raised through additional payments of households in the TAA is sufficient to cover the costs of a particular transport project. Note that experiments 2 and 4 are hybrid consumer/citizen experiments (see Mouter and Chorus, 2016 for a demarcation between consumer and citizen experiments) as the respondents are enabled to reveal their preferences with their after tax income (consumer), but, at the same time, the 100 million euros of government budget will be spend in line with a majority rule and respondents cannot defect when the majority decides that the total 100 million euros should be spend (citizen). We content that conducting such a hybrid consumer/citizen experiment allows us to discern individuals’ consumer and citizen preferences from effects accruing from the candidate projects.

Experiments 1 and 2 will be unlabeled experiments in the sense that the exact location of the project within the TAA is not revealed to the respondents. Respondents only receive information concerning the effects accruing from the 14 projects and they are told that it is not made clear whether or not they themselves experience any effects (positive and negative) from either one of the candidate projects as the TAA is interested in general preferences of its constituency. Hence, the respondents participating in experiments 1 and 2 are uncertain about the impact of their choices for themselves (e.g. travel times, safety and noise pollution). We expect that unlabeled experiments can circumvent deficiencies of existing democratic instruments (e.g. referenda), such as biased information provision by political parties and interest groups regarding policy options. Experiments 3 and 4 are labelled experiments in the sense that respondents are informed about: 1) the location of the project; 2) the impacts of the projects they themselves experience; 3) the impacts for other citizens. These experiments allow us to infer individuals’ trade-offs between effects for themselves and effects for other citizens.

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<th>Fixed Budget</th>
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<td>Unlabeled experiment</td>
<td>Experiment 1 (3rd week March)</td>
<td>Experiment 2 (4th week March)</td>
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Expected results
The collected data will be analyzed using state-of-the-art discrete choice models where the possible portfolios are the alternatives (Train, 2009). The quantitative analyses will show which attributes drive citizens’ selection of the projects. Besides the marginal utility citizens infer from reductions of travel time, reduction of noise/air pollution and improvement of traffic safety (for themselves and fellow citizens) we also aim to derive the extent to which citizens are willing to trade efficiency for equity. For instance, do citizens recommend a portfolio in which the travel time savings accruing from the investment program are to a certain extent equally spread among different mode users and across the TAA instead of recommending the portfolio with the highest total travel time savings? Ultimately, the quantitative analyses will allow us to infer the optimal portfolio of transport infrastructure projects for the TAA.

In-depth qualitative questions will be asked to learn more about the respondents’ motivations: did they assign value to the spatial distribution of benefits accruing from the investment program because they believe that it is fair to balance transport investments across the TAA to some extent or because some projects are beneficial for friends/family living in another part of the TAA? It will also be measured which type of citizens participates in the experiments. It is well known that some groups are more willing to participate in governmental decision-making than others meaning that some of the results potentially need to be reweighted afterwards to make them representative for the population of the TAA. Finally, questions are asked to identify the extent to which respondents feel that participating in the experiments contributes to their feeling of citizenship.

The proposed presentation at the ITEA conference will be the first occasion where the results of our study will be presented and discussed with the research community.

References