



## Does Participatory Budgeting Bolster Voter Turnout in Elections? The Case of the Czech Republic

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### Abstract

Though participatory budgeting (PB) is often discussed as a tool to bolster the level of civic participation and the quality of democracy, empirical research on the subject offers ambiguous results. In the Czech Republic, PB was introduced 5 years ago, and the number of implemented PBs has since increased substantially. The purpose of this article is to evaluate whether the use of PB is associated with higher voter turnout in municipal and parliamentary elections. Voter turnout in Czech municipalities that implemented PB is analyzed and compared with the control group of municipalities without PB. Considered by type of election, we found that the impact of PB use on voter turnout is higher for local elections than it is for national elections, which is in line with our assumptions. However, our results were significant for Prague districts only. Participatory budgeting could increase voter turnout in local election, but there are other factors that must be considered.

### Keywords:

participatory budgeting, voter turnout, direct democracy

### Introduction

In recent years, participatory budgeting (PB) has often been discussed as a tool to bolster the level of civic participation and the quality of democracy (e.g. Matovu and Mumvuma 2008; Wampler 2012). In this context, PB is seen as a form of citizen initiative which is similar to the instruments of direct democracy.

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Tolbert et al. (2001) state that the process of direct democracy itself could influence the attitudes and behaviors of individuals and motivate them to be more involved in the decision-making process about public goods and services. One of the educative effects of direct democracy could be the positive influence that direct democracy has on voter turnout. Similarly, in Sintomer et al. (2013) PB has also often been associated with the mobilization of citizens.

In the EU, the European elections tackle the problem of a low voting turnout. Since 1979 the participation rate has fallen by 20 percentage points to 42.61 %. In the Czech Republic, the voting turnout in the European election in 2014 was the second lowest of all EU countries with a 10-percentage point decrease compared to the previous election turnout in 2009 to 18.2 % (European Parliament 2014). The situation has changed slightly this year (2019) when the overall turnout in the European election increased to 50.95 %. However, although voter turnout in the Czech Republic has increased to 28.72 %, the Czech Republic remains the country with the second lowest participation (European Parliament 2019). The possibility to motivate Czech citizens to vote and to increase their civic engagement and interest in politics through the implementation of participatory budgeting could be presented as a solution to the “crisis of democracy.” However, the type of election could have a different impact on voter turnout (e.g. Tolbert et al. 2001). For example, in the local elections in the Czech Republic, the situation is better than in the European elections (for citizens it is much more interesting at the local level because they are more concerned about it), but in the last two elections (2014 and 2018) the turnout did not even reach 50 %. Therefore, the article is focused on municipal elections because we anticipate PB to have the most impact on the relationship between citizens and municipal officials. We will also test the possible impact of PB implementation on the parliamentary voter turnout at the national level.

The contribution of the article can be seen in two aspects. Firstly, the objective of the paper is to evaluate whether the use of participatory budgets is associated with a higher voter turnout in parliamentary and municipal elections. The empirical studies for European countries do not provide unambiguous results referring to the relationship of PB implementation and voter turnout (e.g. Sintomer et al. 2014), and less attention is paid to the probable difference in the case of local and parliamentary elections.

Secondly, participatory budgeting is a new phenomenon in the Czech Republic. The first PB was introduced 5 years ago, and the number of PBs was growing relatively rapidly in the period 2016–2018. So far, we have not found a publicly available database or a systematic report about participatory budgeting including all Czech PBs, only some partial analyses were published (e.g. Haken et al. 2016). Therefore, we had to use public web-based information to complete the data, and our preliminary results are based on a relatively lower number of finished Czech PB cases.

## 1. Participatory democracy and the objectives of participatory budgeting

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Participatory budgeting could be understood as a combination of elements of direct or semi-direct democracy with representative democracy (UN-Habitat 2004). In participatory democracy, the citizen's participation is not limited to the act of voting to elect their own representatives and an executive but persists during and between election periods. Participatory budgeting (PB) is one of the modern global trends of involving citizens in deciding where and how to divide a part of a public budget. It is a decision-making process through which citizens deliberate and negotiate over the distribution of public resources (Wampler 2007). Sintomer et al. (2008, 2014) define 5 criteria necessary for PB to meet the definition of a proper PB process that have been accepted as a standard around the world: financial and/or budgetary aspects must be discussed; the city level or a decentralized district with an elected body and some power over administration and resources has to be involved; it has to be a repeated process over years; some forms of public deliberation must be included within the framework of specific meetings/forums; some accountability on the results of the process is required.

The first participatory budgets in line with Sintomer et al.'s (2008, 2014) definition were implemented in Brazil, and are named the Porto Alegre type after the municipality where the success of the PB served as an inspiration for spreading the practice worldwide. PBs were implemented in Europe with some modification, and therefore the term "Porto Alegre adopted in Europe" is used (e.g. Džinić et al. 2016 or Boc, 2019). In our article we analyze the project oriented PBs of the Porto Alegre in Europe type that prevail in the Czech Republic.

PBs were implemented in Europe with some modification, and since then more types of PB have been distinguished (e.g. Cabannes 2004; Sintomer et al. 2008). The type of PB described as Porto Alegre adopted for Europe is characterized in Džinić et al. (2016, 34) as: "discussion in neighborhood and/or thematic assemblies primarily dealing with concrete investment and projects and their prioritization." In our article we analyze the project PBs of the Porto Alegre adapted for Europe type that prevail in the Czech Republic. The form of civic participation is direct – a citizen can vote on a project as an individual without delegates. This feature slightly differs from the definition of Porto Alegre adapted for Europe in Krenjova and Raudla (2013), where the council as the decision-making body is composed of citizens' elected delegates. Our definition is in line with Gondášová and Murray Svidroňová (2016) using this type for project PBs in Slovakia.

Carroll et al. (2016) summarized reasons why PB is implemented and defined six angles attracting the most interest: democracy (D), transparency (T), education (Ed), efficiency (Ef), social justice (SJ) and community (C). Democracy means that ordinary people have decision-making power (e.g. Sintomer et al. 2013). This process

can increase trust in government (Berman 1997) and the will of inhabitants to participate in public activities and to vote (e.g. Matovu and Mumvuma 2008; UN-Habitat 2004). Thus, PB could be defined as a tool to improve democratic governance.

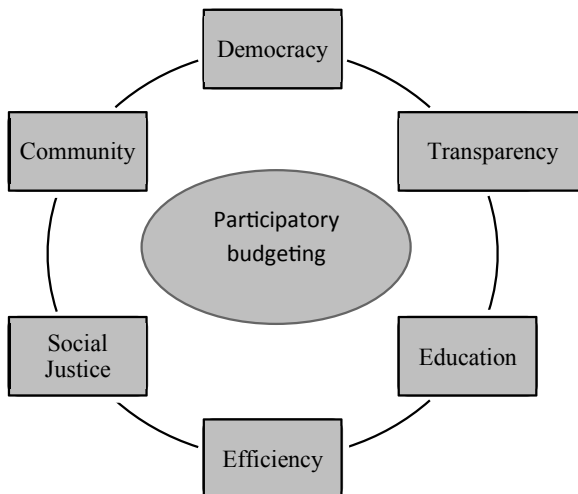
Jacobi (1999) stresses transparency as one of the main features of the PB process. When community members decide on spending through a public vote, there are less opportunities for corruption, waste, or backlash (e.g. UN-Habitat 2004; Matovu and Mumvuma 2008; Wampler 2007, Carroll et al. 2016).

Through education, participants become more active and informed citizens as participatory-budgeting programs can serve as “citizenship schools” that allow participants to learn democracy by doing it (Wampler 2007). Engaged citizens can gain a better understanding of general political issues and community needs (Carroll et al. 2016; Baiocchi and Ganuza 2014).

Viewed from the efficiency angle, budget decisions are improved when they draw on residents’ local knowledge and oversight. Once they are invested in the process, people can apply pressure to make sure that money is spent wisely (Sintomer et al. 2010; UN-Habitat 2004).

From a social-justice perspective, participatory budgeting ensures that everyone has equal access to a public decision-making process. Traditionally underrepresented groups (e.g. seniors) often participate more than usual in PB, and it provides opportunities to solve poverty problems and to mitigate social exclusion (e.g. Goldfrank 2007; Wampler 2007, 2012; Bhatnagar et al. 2003).

**Figure 1**  
Understanding six angles of participatory budgeting



Source: own elaboration based on Carroll et al. 2016

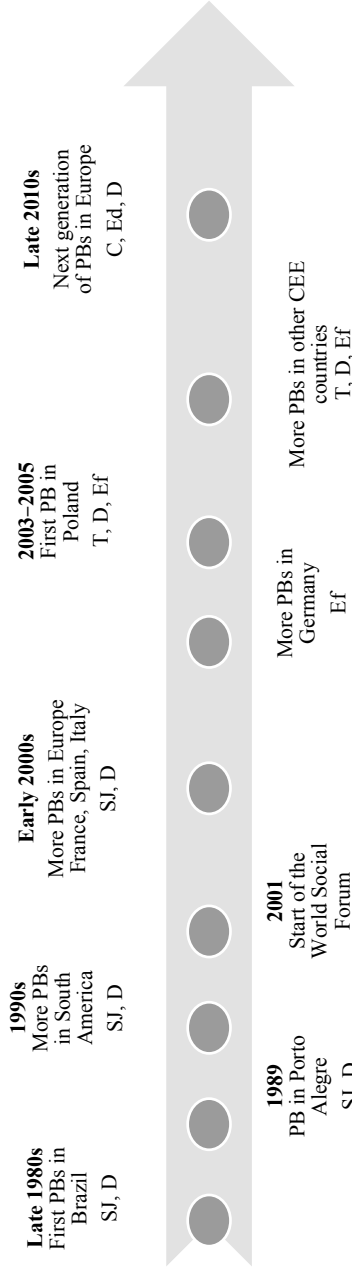
Finally, the community perspective reflects that, through the regular meetings involved with PB, people can get to know their neighbors and feel connected to their city. Budget assemblies connect community groups and activate them (Matovu and Mumvuma 2008).

Similarly, Goldfrank (2007) summarized results of PB in the analogous areas: redirecting public resources towards poor neighborhoods (akin to SJ), extending service provision, democratizing existing and spurring the creation of new civic associations (D and Ed), increasing transparency (T) and accountability (similar to Ef) and enhancing democratic representation for the formerly excluded (D).

The reasons for PB implementation have evolved since their initiation in South America through their current application in European countries. The initial idea of PBs in Brazil was concentrated on social justice issues (SJ), with the aim to solve extreme disparities in income and quality of life between the rich and poor (Sintomer et al. 2010, 2014; Bhatnagar et al. 2003, Goldfrank 2007; Wampler 2012). After the fall of dictatorship, democracy and citizens' participation were the center of attention (D). By the 1990s, more PBs were implemented in other countries of South America outside Brazil, and the objectives of their realizations were similar. An important role in the spreading of PBs in Europe was the World Social Forum, an annual meeting of civic society organizations first held in Brazil in 2001, where the concept of PB was presented (e.g. Sintomer et al. 2010). Many local governments from Europe found inspiration in PBs, and the first PBs were introduced mostly in France, Spain and Italy and focused on SJ and D. The different aim of the first generation of PBs implemented in Germany was to modernize public budgeting and to increase its efficiency (Ef) and to improve transparency (T) (Sintomer et al. 2010, 2014; Baiocchi and Ganuza 2014; Ermert and Ruesch 2014; Ermert et al. 2015; Foelscher 2007). The first PB in a Visegrad country was realized in Poland in 2003–2005 (Džinić et al. 2016).

Latter PBs were more focused on fostering the participation of citizens in public issues and enhancing community development as a solution for the crisis of democracy (D, C) (e.g. Foelscher 2007). These objectives could be achieved by educating PB participants to be more active and informed citizens (Ed). Gondášová and Murray Svidroňová (2016), for example, state that one of the effects of participatory budgeting is increased citizen involvement when citizens play a crucial role in the realization of the projects and in co-creation process in the type of PB Porto Alegre adapted for Europe.

**Figure 2**  
Journey of PB from South America to Europe with the objectives for PB implementation



Source: the authors

## 1.1 Direct democracy and electoral turnout

Empirical studies provide ambiguous results about the impact of direct democracy measures on voter turnout. Freitag and Stadelmann-Steffen (2010) distinguish two approaches in assessing this relationship. First, prevailing empirical studies indicate a positive relationship between direct democracy and voters' participation, arguing that direct democracy processes are associated with an increase in voter interest, political information and knowledge (e.g. Tolbert and Smith 2005; Lassen 2005; Tolbert and McNeal 2003; Smith 2001; Smith 2002; Dvořák et al. 2017). These results are in line with the participatory theories of democracy (Barber 1984; Pateman 1970).

The second approach insists on the opposite relationship – more direct democracy initiatives cause decreased significance of elections due to voter fatigue or less perceived importance of direct electoral choices. Freitag and Stadelmann-Steffen (2010) showed that the frequent use of direct democracy procedures resulted in lower voter turnout in municipal and national elections as the result of less interested potential voters. The theory of protest voting could be another explanation for the negative impact of civic initiatives on the participation rate in elections. For instance, Horton and Thompson (1962) and Buehlmann et al. (2003) consider local referendums as possible institutional outlets for protests, leading to negative voting.

The type of election also plays an important role in the evaluation of the impact of direct democracy on voter turnout. Tolbert and Smith (2005) identified different effects of citizen initiatives on voter turnout in presidential and midterm elections in the USA. Turnout in presidential elections increases by 0.70 % with each initiative on the ballot, with turnout in midterm elections increasing by 1.7 %. Schlozman and Yohai (2008) identified increased turnout in midterm elections, but no effect on turnout at presidential elections. Dvořák et al. (2017) distinguish between the long- and short-term effects of direct democracy on voter turnout. The education of citizens through the direct experience may increase their political engagement in the long run. A public campaign connected with civic initiatives could cause higher public interest but is rather election-specific and short-term. Local direct democracy events have a positive impact on voter turnout, causing its increase by 2.5 percentage points in local elections and by 1.5 percentage points in parliamentary elections.

Like direct democracy, the introduction of participatory budgets with the objectives to educate citizens, improve democracy and enhance community development may influence voter participation in elections. Based on this assumption, we formulated the following hypothesis:

H: The introduction of participatory budgeting has a bigger positive effect on voter turnout in municipal elections than on voter turnout in national elections.

We presume, that voter turnout in municipal elections is more influenced by the introduction of PB than is voter turnout in national elections, since participa-

tory budgets are focused on local issues and thus are more likely to change voters' attitudes towards local politics.

## 2. Methodological framework

We tested the hypothesis by applying regression discontinuity analysis (OLS models). We used quasi-experimental analysis in line with the counterfactual approach comparing the treatment group (municipalities with PB implementation) and the control group (municipalities without PB). Quasi-experimental studies (also known as natural experiments) are used to estimate a causal relationship and rely on circumstances outside of the researcher's control that naturally lead to random assignment (Rosen and Gayer 2014).

Characteristics of all compared subjects in both groups should be very similar or the same on average (e.g. Potluka and Brůha 2013); therefore we used the nearest-neighbor search method. We assume that by using this method we could eliminate the probability of the existence of exogenous events that might influence only one of the groups (Card and Krueger 1994). The application of the method of searching for the nearest neighbors was based on the following main criteria: population (number of inhabitants); population density; location in the same NUTS III as the municipality with PB.

The population criteria can reduce the impact of the size of municipalities. For example, Čmejrek (2007) states that small Czech municipalities have higher voter turnout in municipal elections. The preferred location in the same NUTS III is included to eliminate the impact of voting traditions or preferences typical for a certain area. The criterion of the same NUTS III location was not used for Prague districts – all municipalities in the control group were the Prague districts only to eliminate the possible difference. We used a different approach for the city of Ostrava because we could not find a proper pair based on the population number or density in Ostrava districts only. We looked for similar municipalities in the same NUTS III with a preference for the population criteria. Table 1 shows the different sizes of municipalities in our experimental group.

**Table 1**  
Size of municipalities in the experimental group

<b>Municipality size</b>	<b>N</b>	<b>%</b>
Less than 10,000 inhabitants	7	29
10,000 to 100,000 inhabitants	13	54
More than 100,000 inhabitants	4	17

Source: the authors



The next step was to test for similarities in complementary criteria – expenditures and revenues per one inhabitant. Expenditures per one inhabitant reflect the extent of public services in the municipality. Revenues per one inhabitant are an expression of potential financial sources that could be used for participatory budgeting. Both criteria are suitable for determining the relevance of PB application. For the Ostrava and Prague districts the complementary criteria were not applied due to the dissimilar basis and principles of the budgets of city districts compared to the towns and cities in the control group.

As the results of OLS models were not significant for all municipalities, we applied also the method difference in differences used by Card and Krueger (1994). This method assumes that the impact of the policy on the outcome can be calculated by means of two differences. The first difference is determined in time (before and after intervention) and the second is caused by the difference between supported and unsupported subjects (Potluka and Špaček 2013).

We used public, web-based information about PBs in Czech municipalities, and our own data was collected manually. For analyzing voter turnout, we used data published by the Czech Statistical Office (CSO) on voter turnout in municipal and parliamentary elections and population (density) for a certain municipality. Linked open data on municipal expenditures and revenues from MONITOR (portal of the Ministry of Finance of the Czech Republic) was used for testing the determination of the control group. Our data set contains 65 PB cases in 30 municipalities in the Czech Republic in the period 2016–2018. The substantial increase of PB cases started in the analyzed period, and their evolution is shown in Table 2.

**Table 2**  
Evolution of PB cases in Czech municipalities

<b>Year</b>	<b># of PBs</b>	<b># of inhabitants with PB</b>	<b>Average rate of total expenditures used for PB in %</b>	<b>Amount used for all PB projects in EUR</b>
2016	13	556,510	0.66	1,407,000
2017	27	1,307,001	0.56	2,924,000
2018	25	1,402,216	0.59	3,702,000

Source: the authors

Five municipalities did not meet the definitional criteria of PB based on Sintomer et al. (2010) or the condition of at least 2 years duration of the PB process in a certain municipality. Similarly, we had to exclude Brno because we could not find a proper pair for the control group. After selection, there are 48 municipalities in both the experimental and control groups used for OLS regression. We did two

OLS models – for all analyzed municipalities (N=48) and for the Prague districts only (N=18).

**Table 3**  
Descriptive statistics for the experimental group (N=24)

	<b>Mean</b>	<b>Std. Dev.</b>	<b>Min</b>	<b>Max</b>
population	42,612	38,120	1,133	109,790
expenditures (in EUR)	24,300,015	19,860,795	669,787	73,135,000
pb expenditures <sup>3</sup>	105,900	113,919	9,671	386,847
pb rate <sup>4</sup>	0.61	0.50	0.06	2.22

Source: the authors

## 2.1 Dependent and independent variables

Voter turnout in municipal elections and turnout in parliamentary (national) elections are considered dependent variables. We used voters' participation rate for a certain municipality in the control and the experimental groups in the last municipal elections (2017) and in the last parliamentary elections (2018). The PBs were introduced in this period, therefore we can test the immediate effect on voter turnout after PB implementation.

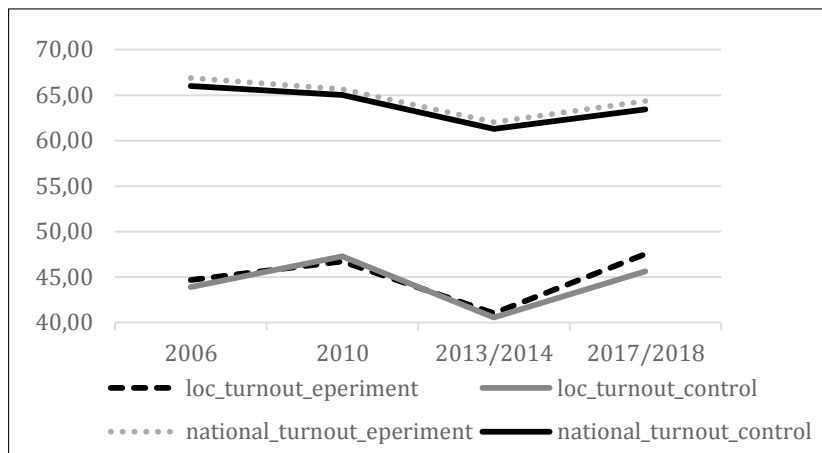
The independent variables were previous voter turnouts (in municipal and parliamentary election), and the dummy variable was the presence of the PB. We eliminated the differences in previous voter turnouts caused by possible unobserved factors by using the nearest-neighbor search method. Previous voter turnouts (national and local) are similar for both groups (experimental and control), as shown in Figure 3. Voter turnout in the period before PB implementation (2013/2014) is on average the same for local and national elections in the control and experimental groups. Voter turnout in the local election was less than voter turnout in the parliamentary election during the whole analyzed period (by approximately 20 pp).

We used municipal-level data about voter turnout in previous elections, both in local and national elections (2013 and 2014), as dependent variables. We anticipated that there would be a positive correlation between the last and current voter turnout. The presence of the PB was a dummy variable with value 1 in case of PB application and 0 without PB. All municipalities in the experimental group have the value 1, and the municipalities in the control group have the value 0.

3 pb expenditures are total expenditures in a municipality per year used for PB projects in EUR.

4 pb rate is the % of total expenditures used for PB projects.

**Figure 3**  
Voter turnout in the experimental and control group in % (2006–2018)



Source: developed by the authors, based on data from CSO (2019)

When applying the difference in differences (DID) method, we compared the average voter turnout in the municipalities in the control group (CG) with the experimental group (EG) in the previous and current elections. The method was used for both municipal and parliamentary elections for all municipalities. Participatory budgeting was introduced in the period after the previous elections, therefore we can evaluate its impact on voter turnout.

### 3. Results and discussion

Table 4 presents the results of the OLS regression models for all municipalities. Our results are in line with the expectation that voter turnout in the previous elections be positively correlated with the current voter participation in both national and local elections. However, we did not find evidence that the introduction of PB had a significant impact on voter turnout in all municipalities.

When we applied our model to the data set for Prague districts only (Table 5), we found a positive correlation for PB use and voter turnout in both local and national elections. Nevertheless, there is a difference in the level of significance and coefficient. Voter turnout in municipal elections is more significant than voter turnout in parliamentary elections.

**Table 4**

Empirical results of the regression analysis (the OLS models) with N=48

<b>Dependent variable munelect_1<sup>5</sup> R=0.652371, R2=0.636921</b>						
	Coefficient	Standard error	t-stat	p-value	Hypothesis (correlation)	Fact (correlation)
Const	11.6769	3.9128	2.9843	0.00458***		
pb	1.51629	1.69483	0.8947	0.37573	ambiguous	insignificant
munelect_0 <sup>6</sup>	0.836978	0.0917581	9.1216	<0.00001***	positive	positive
<b>Dependent variable parelect_1<sup>7</sup> R=0.929017, R2=0.925862</b>						
Const	-10.0525	3.06696	-3.2777	0.00202***		
pb <sup>8</sup>	0.0895035	0.643824	0.139	0.89006	ambiguous	insignificant
parelect_0 <sup>9</sup>	1.19847	0.0494739	24.2243	<0.00001 ***	positive	positive

\*\*\*, \*\*, \* mean 1 %, 5 % and 10 % level of significance

Source: the authors

**Table 5**

Empirical results of the regression analysis (the OLS models) with N=18

<b>Dependent variable munelect_1 R=0.857570, R2=0.838580</b>						
	Coefficient	Standard error	t-stat	p-value	Hypothesis (correlation)	Fact (correlation)
Const	8.82764	4.456	1.9811	0.06622*		
pb	2.99744	1.40338	2.1359	0.04958**	ambiguous	positive
munelect_0	0.972677	0.102779	9.4638	<0.00001***	positive	positive
<b>Dependent variable parelect_1 R=0.899263, R2=0.885831</b>						
Const	6.03419	5.48415	1.1003	0.28855		
pb	1.20903	0.630601	1.9173	0.7445*	ambiguous	positive
parelect_0	0.945461	0.0826096	11.4449	<0.00001 ***	positive	positive

\*\*\*, \*\*, \* mean 1 %, 5 % and 10 % level of significance

Source: the authors

5 munelect\_1 – voter turnout in the 2018 municipal elections in a certain municipality.

6 munelect\_0 – voter turnout in the 2014 municipal elections in a certain municipality.

7 parelect\_1 – voter turnout in the 2017 parliamentary elections in a certain municipality.

8 pb – participatory budgeting: dummy variable indicating PB implementation (=1) for the treatment group or no PB (=0) for the control group.

9 parelect\_0 – voter turnout in the 2013 parliamentary elections in a certain municipality.

The implementation of PB increased voter turnout in municipal elections by approximately 3 percentage points and by approximately 1.2 percentage points in parliamentary elections. We presumed that the positive effect of PB use on voter turnout was bigger in the case of municipal elections than in the case of parliamentary elections, and the hypothesis was confirmed.

Consequently, we analyze differences in voter turnout for all municipalities before and after the PB implementation using the difference in differences (DID) method. Table 6 presents the results for municipal elections.

**Table 6**

Municipal election – DID in voter turnout in all municipalities before and after the PB implementation in %

	<b>Experimental group (EG)</b>	<b>Control group (CG)</b>	<b>difference (EG-CG)</b>
munelect_0	41.04	40.59	0.45
munelect_1	47.54	45.65	1.89
difference in time	6.50	5.06	<b>1.44</b>

Source: the authors

In both groups, there was an almost identical increase in the average voter turnout by over 5 percentage points in time. In the first period (before PB introduction), the difference between the experimental and control groups was less than 0.5 percentage points. The relative gain (the difference in differences) of the changes in voter turnout was 1.44 %.

**Table 7**

Parliamentary election – DID in voter turnout in all municipalities before and after the PB implementation in %

	<b>Experimental group (EG)</b>	<b>Control group (CG)</b>	<b>difference (EG-CG)</b>
parelect_0	62.02	61.31	0.71
parelect_1	64.36	63.42	0.94
difference in time	2.35	2.11	<b>0.23</b>

Source: the authors

Table 7 shows that on average the increase in voter turnout was by approximately 2 percentage points in time, which is less than the result in municipal elections. Similarly, there was only a weak impact of PB implementation on the average voter turnout in the experimental group with a relative gain of 0.23 %. As shown in

Tables 6 and 7, the positive effect of PB use on voter turnout was present in both cases, but there must be an emphasis on the difference in the type of election. The DID in voter turnout in all municipalities before and after the PB implementation was bigger by 1.21 percentage points in the case of municipal elections than in the case of parliamentary elections.

The results of the OLS models for the Prague districts and the difference in differences approach show that PB implementation increased voter turnout in municipal elections more than in parliamentary elections. The results of the OLS models for all municipalities suggest that voter turnout in both local and national elections was almost unaffected by the PB introduction; they were statistically insignificant. We tried to eliminate other factors influencing voter turnout by using the nearest-neighbor method to select a suitable pair of municipalities, but we are aware of its imperfections. Different results for the dataset with all municipalities in comparison with the Prague districts could be caused by other socio-demographic and economic factors that could influence the results significantly and must be tested in further research. The OLS regression model could be amended by adding more independent variables reflecting this absence. The limitation of the model is the lower number of observation due to the short period of PB application. On the other hand, we can exclude Horton and Thompson's (1962) theory about negative voting of, because there is no negative correlation between PB introduction and voter turnout on average for all municipalities.

Dvořák et al. (2017) mentioned another confounding factor influencing voter turnout. This could be a conflict within a concrete municipality that might energize the local community. We did not have information on all circumstances in the analyzed municipalities where that could be the case. Therefore, another option for further research could be more qualitative analysis, e.g. in the form of case studies about selected municipalities focused on the local political situation and about a possible conflict in the community that could occur before elections.

Additionally, Džinić (2018) states that the significance of the local population's participation in managing public finances through PB depends on the degree of fiscal decentralization and whether the citizens manage a substantial share of public finance. In our experimental group the mean PB rate (% of total expenditures used for PB projects) was 0.61, and the maximum was 2.22. In the CEE region, the situation is similar in Poland, where the PB rate in 2018 was below 1 % with a maximum of 0.85 in Katowice (Olejniczak and Bednarska-Olejniczak 2018). It could be questionable to consider this rate to be high enough to influence civic participation and motivate individuals to vote.

The size of a municipality can be an important factor that can influence PB application. A small municipality often implies limited financial resources, which may make a more large-scale implementation of PB more complicated (Krenjova and Raudla 2013). In the CEE region there are highly fragmented territorial struc-

tures of local government, and they tend to be rather small (Swianiewicz 2010; Illner 1998), which is typical of the Czech Republic with more than 6 thousand municipalities.

Furthermore, the real participation of citizens in the PB process can play an important role in the evaluation of PB's influence on voter turnout. Zepic et al. (2017) identified some reasons why inhabitants refuse to participate in the PB process, such as a relatively small PB budget, the low trust in the implementation of PB projects etc. In some municipalities in Poland voter turnout in votes on the participatory budget was more than 30 % in 2016 (Olejniczak and Bednarska-Olejniczak 2018). However, based on our preliminary data voter turnout on PB in Czech municipalities was at a maximum of around 16 % in smaller municipalities for the whole analyzed period, and it differs a lot. In the municipalities with weak interest in PB participation and PB voting, it is arguable to expect any exact causal mechanism of how PB introduction increases voter turnout in local/national elections.

The results of OLS regression for the Prague districts are in line with Dvořák et al. (2017) testing the impact of the use of municipal referendums on voter turnout. There was an increase of voter turnout by 2.5 pp in municipal election and 1.5 pp in parliamentary elections, which is close to our results (3 percentage points in municipal election and 1.2 percentage points in parliamentary election). Likewise, the higher impact of PB implementation on voter turnout in local elections than in national elections was shown when we applied the difference in differences method. The difference in differences of the changes in voter turnout before and after PB implementation is 1.44 % in the case of municipal elections, which was more than the relative gain of 0.23 % in parliamentary elections. In addition, our findings are compatible with Tolbert and Smith (2005), who found evidence for the different impact of citizen initiatives on voter turnout in presidential and midterm elections. The effect on the midterm elections was higher by 1 pp than on the presidential election, which could be caused by the higher concentration on local issues akin to our results concerning the Czech local elections.

We analyzed the impact of PB introduction on voter turnout on the aggregated municipal level. Another option could be the analysis on the individual level, which was applied in Johnson et al. (2018). Engaging with PB caused the increased individuals' probability of voting by an average of 7.5 %, with a greater effect on the groups of citizens who have lower probabilities of voting (e.g. young voters). Unfortunately, nowadays there is no data about individuals voting in PB available for Czech municipalities.

## **Conclusion**

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The objective of the paper was to evaluate whether the use of participatory budgets is associated with a higher voter turnout in parliamentary and municipal elections.

We provide some support for a positive and significant effect of PB implementation in the Prague districts in both local and national elections. However, the results for all municipalities in our dataset were not significant. When reflecting the types of elections, we found that the impact of PB use on voter turnout in local elections is higher than in national elections (for all municipalities), which is in line with our assumptions.

Thus, participatory budgeting could increase voter turnout in local elections, but there are other factors that must be considered, and there is a need to analyze these factors more deeply. Solving the “crisis of democracy” by means of PB implementation alone is not probable, and local politicians should be rather prudent and not consider PB as an ideal instrument to foster civic participation under all circumstances.

Even if PB is often considered an innovative tool to promote the concept of good governance, based on the results of our study it is not possible to confirm its impact on a higher participation rate and voter turnout without a deeper analysis of other factors that could be specific for a concrete municipality. Therefore, we recommend a more qualitative approach in researching this area and in decision-making when introducing PB. A good example of providing this type of research on a particular municipality could be the case study (Špaček 2018) of Brno’s 2050 Strategy with a view to enhancing inclusivity and participation.

Additionally, the aim of the study was to create a unique dataset about project-oriented PBs in the Czech Republic using public web-based information with the intention to have better insight into the development of Czech PB cases. Further research could be a systematic overview of Czech PB cases focused on other potentially problematic issues than voter turnout and civic participation.

The period of PB application in the Czech Republic is rather short, and therefore adding more finished PB cases in Czech municipalities to our dataset in the future might show results with a potentially higher explanatory power.

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