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The Determinants of Voter Turnout in Croatian Local Government Elections

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This study examines the factors influencing voter turnout in the 556 Croatian local governments over 2014-2021. The previous electoral turnout has a negative influence on the following elections turnout, which is consistent with the declining trend in participation at local governments' polls. In addition, municipal management issues affecting voters' pockets (welfare benefits) affect electoral turnout. Moreover, traditional parties are failing to mobilize their voters, while corruption does not influence electoral turnout, perhaps because of Croatians' lack of confidence in politicians and their efforts to curb corruption. Reelection of the party in office and big electoral win margin discourage citizens from voting, as they feel that there is no room for influencing the final electoral outcome. This feature confirms the basic rational choice model of voting (turnout is higher in more competitive political systems). Finally, our findings do not indicate a significant impact of budget transparency on voter turnout.

Budget transparency, Voter turnout, Local government, Elections, Post-communist country

1 Introduction

Voter turnout at the local level is a clear indicator of democratic participation. Local authorities are responsible for essential public services such as education, housing, infrastructure, and transportation. However, despite their significance, participation in local elections is consistently lower than in national contests (e.g. Lysek, 2024). Persistently low and uneven turnout raises important questions regarding the representativeness and legitimacy of local elected officials (e.g. Wolfinger and Rosenstone, 1980).

In the case of Croatia, analyzing patterns of local electoral participation is particularly relevant due to ongoing challenges related to civic engagement and pronounced regional disparities (Bastida, 2023; OECD, 2024). Since achieving independence and establishing democratic institutions in the early 1990s, Croatia has maintained regular local electoral contests. Nevertheless, local election turnout has remained relatively low and highly uneven across cities and municipalities. For instance, in the 2025 local elections, voter participation fell below 50% in many LGs (State Electoral Commission, 2025), raising concerns about democratic legitimacy and widespread civic disengagement. These concerns are further amplified by Croatia's decentralized

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governance structure, which grants substantial authority to local governments (LGs) in areas such as key services provision, urban development, and the allocation of European Union funding. In this context, robust citizen engagement in local elections is crucial for ensuring accountable and responsive governance.

Although the academic literature has extensively examined the determinants of voter turnout (e.g., Alford & Lee, 1968; Cancela & Geys, 2016; Stockemer, 2017; Wood, 2002), findings are mixed regarding local elections. Among the most consistently supported findings is that synchronizing local elections with national or regional elections significantly boosts turnout (e.g. Rudolph & Leininger, 2021). Other factors identified in the literature include the level of electoral competition, as uncontested or minimally contested elections tend to suppress turnout (e.g. Kouba & Lysek, 2023); administrative unit size or amalgamation, as larger or consolidated municipalities typically exhibit lower participation rates (e.g. Bhatti & Hansen, 2019); and ballot complexity, as more intricate voting procedures, such as preferential or multi-vote systems, are associated with decreased turnout (e.g. Ellenbroek, 2024). Additionally, higher electoral frequency has been linked to reduced participation, as repeated voting demands may lead to voter fatigue (Kostelka et al., 2023).

Despite these findings, the empirical evidence for many other potential determinants remains inconclusive (e.g. Blais, 2006; Geys, 2006), and significant variation persists across different institutional and national contexts. Stockemer (2017), in a comprehensive meta-analysis, concluded that no single explanatory variable consistently predicts turnout across studies, underscoring the importance of contextualized, case-specific research in this domain.
Kropf and Pope (2020), on an empirical analysis of elections in North Carolina (USA), find that the higher the expenditure on elections, the higher the electoral turnout. Similarly, local authorities that reduce their election budgets risk increased voter disengagement (James & Jervier, 2017).

This study contributes to the ongoing scholarly debate on the relationship between voter turnout in local elections and various dimensions of municipal governance, as well as socioeconomic and political factors. While voter participation has long been recognized as a key indicator of democratic legitimacy, particularly in decentralized systems, the specific drivers of turnout at the LG level remain insufficiently explored in Croatia, a post-communist country that entered the EU in 2013. Building on the existing literature, this study addresses the following research question: which factors influence voter turnout in Croatian elections? To examine this question, we formulate four hypotheses, which appear on the corresponding section of the article.
The remainder of this article is organized as follows. First, we present the literature review on the determinants of local electoral turnout: LGs' budget transparency, management, politics and socioeconomic factors. This section is followed by the empirical analysis. Then, the discussion of findings, conclusions and policy implications finish the article.

2 Literature review

By situating this research within the broader literature on local electoral participation, this review synthesizes existing theoretical and empirical research on the institutional, demographic, and political determinants of local voter turnout. Special attention is given to findings that pertain to post-socialist democracies and decentralized governance structures, to contextualize the Croatian case and identify gaps that this study seeks to address.

2.1 Budget transparency

The political budget cycle literature explains how politicians may increase their re-election chances by offering tax reductions, increasing spending, and/or relocating expenditures to purposes more visible to citizens, such as transfers and/or benefits (Alt & Lassen, 2006b; Bronić et al., 2022). Politicians can perform these budgetary tricks because of the information asymmetry on public finance between voters and politicians (Alt & Lassen, 2006b). However, these political tricks may be discouraged by fiscal/budget transparency (Reviglio, 2001), which enables citizens to better understand politicians' budget manipulation and to thereby distinguish competence from opportunistic fiscal policies, with the result of increasing voter turnout while penalizing opportunistic politicians in elections (Ferejohn, 1986).

According to principal-agent theory, some agents (politicians) pursue their own interests and not the interests of their principals (citizens) (Ferejohn, 1986). Citizens want to know how politicians are spending public money because they do not want to finance politicians' opportunistic goals. Thus, with more budget information available to citizens, in theory, citizens should have more motivation to use elections as a revelation mechanism to penalize opportunistic politicians and, thus, to elect good politicians (Ferejohn, 1986).

One of the points of this article is to answer Alt and Lassen (2006a)'s question: Does budget transparency have an impact on voter turnout? Although the abovementioned theories suggest a positive relationship, empirical research findings are mixed.

Benito et al. (2021) for Spanish municipalities, Birskyte (2018) for Lithuanian municipalities and García-Tabuyo et al. (2016) for local governments in Central America, show a negative relationship between voter turnout and transparency/information disclosure. Birskyte (2018) explains that greater voter turnout may be triggered by a low level of transparency or a lack of transparency, and it may signal the demand for change in the level of transparency.

Serrano-Cinca et al. (2009) do not find a significant relationship between voter turnout and information disclosure in 92 Spanish local governments, nor does del Sol (2013). Smith and Cheng (2006), in their research on budgeting reforms of state governments in the United States, argue that budget reports do not influence voters.

However, Esteller-Moré and Polo Otero (2012) report a positive relationship between voter turnout and information disclosure for large Spanish municipalities. In addition, on a sample of 41 countries, Benito and Bastida (2009) provide evidence that, in line with the abovementioned theories, higher budget transparency provides incentives for people to vote (to penalize opportunistic politicians and elect good politicians).

Based on these theories and the reviewed literature, our first hypothesis is:

H_1: There is a positive impact of budget transparency on LGs' electoral turnout.

2.2 LGs' management variables

Voters who are unhappy with the *economic situation* have two options: to vote in elections hoping something will change (mobilization hypothesis) or to withdraw from elections because they have more pressing problems and/or are in that way expressing their dissatisfaction (withdrawal hypothesis) (Lynge & Martinez i Coma, 2022).

Park (2023) analyses 29 democracies since the 1980s and finds that a poor relative economy leads to lower turnout, while a good relative economy appears to have no effect. However, most empirical studies show that economic downturns have no effect on voter turnout (e.g. Fornos et al., 2004). Martins and Veiga (2013) try to explain this null impact of economic variables on voter turnout through nonlinearities that were not previously tested properly. For the Portuguese municipalities and parishes in the period from 1979 to 2005, they demonstrate a nonlinear (U-shaped) effect of unemployment on turnout and a nonlinear (inverted U-shaped) effect of employment rates and real wages on turnout. They argue that these nonlinear relationships can help explain so many mixed results, as in bad and good times, turnout is higher (the mobilization effect dominates because voters want to show (dis)satisfaction with the current political and economic situation), but when the economy is neither too hot nor too cold, turnout is lower (the withdrawal effect dominates). In line with Martins and Veiga (2013), we expect that if citizens perceive certain economic indicators to be worsening and to potentially affect citizens' pockets (e.g., increasing debt), the mobilization effect dominates, and electoral turnout rises. On the other hand, we assume that for those economic indicators that citizens perceive as stable – neither too hot nor too cold – (e.g., better budget balance, improving fiscal capacity, better LG performance), we expect lower voter turnout (withdrawal effect dominates).

Arawatari and Ono (2020) point to citizens' strategy of voting to secure *welfare benefits*. They argue that a positive relationship between *debt* and voter turnout could be expected because retired people, who tend to vote more and do not pay income taxes, prefer public debt to benefit more from public goods. Similarly, Pacek and Radcliff (1995) show a positive relationship between higher welfare benefits and voter turnout, arguing that citizens receiving higher welfare benefits are more likely to be focused on those benefits when voting, wanting to secure them again.

Regarding the impact of *corruption* on voter turnout, the empirical results are mixed, and it is not clear what to expect. On the one hand, for example, it is proven that illegal practices such as corruption are spread in Croatia (Bađun et al., 2014), and that corruption reduces voter turnout in local elections in Italian municipalities, causing citizens to have less interest in politics and leaving tenured politicians a greater opportunity to run and be elected (Giommoni, 2021). In contrast, Bågenholm and Charron's (2020) find no impact of corruption on electoral turnout in the 2016 Romanian municipal elections. Based on theory and the literature review, we expect the following:

H_2: LGs' management variables have an impact on local electoral turnout.

2.3 Political variables

There is abundant literature on the impact of political variables on voter turnout (e.g. Hadjar and Beck, 2010). Empirical studies show that voters are more likely to vote when there are *women candidates*, as women are seen as change agents (Safarpour et al., 2022). Interestingly, regarding *re-candidacy* and turnout, De Benedetto and De Paola (2016) show that both theoretical expectations and empirical findings are mixed, and they try to solve that ambiguity by using data for Italian municipalities over 1993-2011. They show that the impact of re-candidacy on turnout is mixed in different Italian geographical areas, finding only a significant positive relationship in southern Italy. They explain this positive result with patronage practices (clientelistic relationships established by incumbents, higher probability of political corruption and low social capital) in southern Italy.

As Hadjar and Beck (2010) argue, the probability of nonvoting is increased by *a lack of political efficacy, low political interest, low political trust* and *dissatisfaction with politicians and the political system.* Scepticism about democracy and the lowest level of political trust in the

European Union are general characteristics of Central and Eastern European societies (Lenik, 2024). Indeed, interest in politics is argued to be one of the most robust predictors of voter turnout in Croatia as well (Ančić et al., 2019). According to Bastida (2023), there is a clear lack of interest in politics among Croatian people, and Croatians' trust in their politicians is extremely low, probably due to the high level of corruption and the postcommunism effect. "The habits learned during the communist period, based on the belief that the state worked against the individual rather than for it, prevent Croatians from trusting their political system" (Bastida, 2023, p. 66). It has been argued that voter turnout in Croatia is low because individuals feel helpless (Šiber, 2004), and there is a lack of civic activism to keep the government accountable (Hajra & Arifi, 2020).

It is argued by the basic rational choice model of voting (Riker & Ordeshook, 1968) that voters account for the expected benefits and costs of voting. Thus, it is anticipated that voters' turnout is higher in more *competitive political systems* (e.g., higher number of opponents, lower winning margin) because voters have more options and a higher likelihood of influencing the electoral outcome (Blais, 2006). In addition, Stockemer (2017, p. 705) explains that "the greater the (number of) parties in the political arena, the more complicated the political process is for voters to understand", so the number of parties could also negatively impact voter turnout. A positive relationship between political parties and voter turnout is proven in the French legislative elections of 1997 and 2002 by Indridason (2008) and in the French legislative and cantonal elections between 1978 and 2012 by Bol and Ivandic (2022). On the other hand, Stockemer (2017)'s meta-analysis shows that the number of parties in most cases is not related to electoral turnout. Based on the abovementioned literature, we posit that:

H_3: There is an impact of political variables on LGs' electoral turnout.

2.4 Socioeconomic variables

Numerous studies present evidence that an *individual's income* has a positive impact on voter turnout, especially in Western countries (Matsubayashi & Sakaiya, 2021; Schafer et al., 2022). The most important argument holds that it is necessary to have a sufficient level of income to vote (Brady et al., 1995) and that poorer people tend to worry more about their private problems than about voting (Schafer et al., 2022).

Despite mixed empirical results on the effect of *unemployment* on turnout, Martins and Veiga (2013) observe a nonlinear (U-shaped) effect of unemployment on turnout in a sample of Portuguese municipalities for 1979-2005. They argue that in bad and good times, turnout is higher (mobilization effect dominates), but when the economy is neither too good nor too bad, turnout is lower (withdrawal effect dominates).

Empirical studies mostly confirm that *age* has a positive impact on voter turnout (Chareka et al., 2006; Martins & Veiga, 2013). It is argued by lifecycle theory that maturing individuals are more likely to vote and are more interested in politics/economics because they have children, property, and debts and they pay taxes (Hadjar & Beck, 2010).

A larger population is often associated with a lower turnout (Geys, 2006; Martins & Veiga, 2013; Stockemer, 2017) because the probability that an individual may affect the election result is smaller when the population is larger. According to Geys (2006, p. 642), voters vote "to change the outcome of the election and only incur the costs of voting if these do not outweigh the expected benefits of that action."

More educated individuals tend to vote more (Tenn, 2007; Hadjar & Beck, 2010) because of their easier access to and understanding of political issues (Verba & Nie, 1972) as well as their stronger sense of responsibility to vote (Hadjar & Beck, 2010).

Although *internet voting* can be reasonably expected to positively impact voter turnout because of its many helpful features (such as saving time and money for voters and facilitating participation for people having disabilities or living remotely), it has failed to increase voter turnout in numerous countries (Germann & Serdült, 2017; Ehin et al., 2022). Some of the reasons are political will, technological failures or concerns about privacy (Krips & Willemson, 2019). Based on the abovementioned research, our hypothesis is as follows:

H_4: Socioeconomic variables have an impact on LGs' electoral turnout.

3 Empirical methodology

Croatia's subnational structure comprises 555 local self-government units, 428 municipalities and 127 cities, and 20 counties at the regional level. The City of Zagreb has a special dual city–county status, bringing the overall total to 576 units. Since counties have exhibited (near-) full budget transparency, with all counties publishing all five key budget documents, leaving virtually no cross-sectional variation at the regional level, counties are excluded from our analytical sample. Therefore, the sample covers the 556 Croatian LGs for 2014-2021. Table 1 explains the variables used in the empirical analysis.

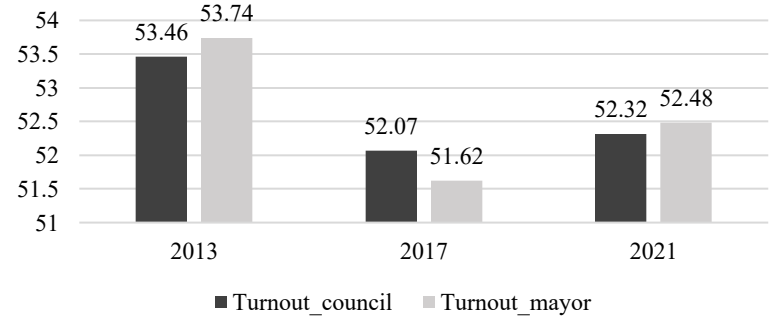
The main model adopts a panel data regression (equation 1).

$$y_{it} = \gamma + y_{i(t-1)} + \sum \beta_j x_{jit} + \varepsilon_{it} \quad (1)$$

where y_{it} is the electoral turnout (*Turnout_council_2*, *Turnout_council_3*, *Turnout_mayor_2*, *Turnout_mayor_3*), γ is the intercept, $y_{i(t-1)}$ is the previous elections' turnout, β_j is the vector of parameters to be estimated, x_{jit} is the vector of explanatory variables, and ε_{it} is the error term.

Regarding the dependent variable in our models, Figure 1 shows the average electoral turnout in LGs' electoral years (2013, 2017, 2021) for both mayor and council elections. First, it should be noted that voting is not compulsory in Croatia and that there is a proportional representation electoral system. Second, Figure 1 clearly shows that voter turnout is low in local elections (on average, slightly above 50%). Finally, comparing 2021 elections with 2013 elections, it is noticeable that voter turnout (for both council and mayor elections) has decreased over the years, with statistical significance.

Figure 1. LGs' electoral turnout in Croatia (2013, 2017, 2021)



Variable	**Groups**		**t-student**
	2013 elections	*2021 elections*	

	mean	obs.	mean	obs.	
Turnout_council	53.4627	556	52.3178	556	**1.9673
Turnout_mayor	53.7430	556	52.4800	556	**2.0346

Table 1. Descriptive statistics

	Variable	Description	Obs.	Mean	Std. Dev.	Min.	Max.
Dep. variables	*Turnout_council_2*	Voter turnout in Croatian council elections (% electorate). Pre-electoral years influence the turnout of upcoming election. The election year influences that year's turnout. [a]	4,448	52.19	9.75	20.94	80.87
	Turnout_council_3	Voter turnout in Croatian council elections (% electorate). Pre-electoral years influence the turnout of upcoming election. The election year, as elections take place in May, is assumed not to influence that year's turnout. [a]	4,448	51.90	9.95	20.94	80.87
	Turnout_mayor_2	Voter turnout in Croatian mayoral elections (% electorate). Pre-electoral years influence the turnout of upcoming election. The election year influences that year's turnout. [a]	4,448	52.05	10.39	21.19	80.87
	Turnout_mayor_3	Voter turnout in Croatian mayoral elections (% electorate). Pre-electoral years influence the turnout of upcoming election. The election year, as elections take place in May, is assumed not to influence that year's turnout. [a]	4,448	51.84	10.57	21.19	82.34
Transparency	*OLBI_voluntary_disclosure*	OLBI_voluntary_disclosure (0-2) number of online published voluntary budget documents (budget proposal and citizen budget). For example, if the local government publishes one of these two documents, the variable takes value 1. [b]	3,892	0.97	0.86	0	2
	OLBI	Online availability of five key budget documents on the official LGs' websites, measured annually. The variable ranges from 0 (no key budget document available online) to 5 (all documents available online). [b]	3,892	3.27	1.64	0	5
Municipal management	*Direct_debt_pc_uncons_exec*	LG debt per capita. [c, d]	3,892	523.73	1,042.91	0	11,623.11
	Budg_balance_uncons_exec	[Budget balance (total revenues - total expenditures)/total revenues] * 100. [c, d]	3,892	-0.57	19.59	-186.49	66.315
	Benefits_pc_cons_exec	Benefits for citizens and households per capita. [c, d]	3,890	196.74	148.19	0	1,411.751
	Tot_exp_pc_uncons_exec	Total expenditures per capita (Croatian kunas). [c, d]	3,892	4,436.59	2,881.33	643.37	29,789.01
	Fisc_cap_pc_uncons_exec	Fiscal capacity per capita. Ability of LG units to raise revenues. Calculated as operating (current) revenues minus all grants [c, d]	3,892	3,107.88	2,145.78	302.47	17,090.2
	munic_perform	Total expenditures/LG employees. [c]	3,781	1,287,525	819,116.30	58,335.74	1.17E+07

[a] State Electoral Commission. [b] Computed by the Institute of Public Finance, Croatia. [c] Ministry of Finance.
[d] "Uncons." means that LGs' budget users are not included, "Cons." means LGs' budget users are included.

Table 1. cont'd Descriptive statistics

	Variable	Description	Obs.	Mean	Std. Dev.	Min.	Max.
Politics	*Female_mayor*	Dummy for female elected mayor (0 male, 1 female). [a]	4,448	0.09	0.28	0	1
	Recand_mayor	The elected mayor was running for re-election (1= yes, 0= no). [a]	4,448	0.69	0.46	0	1
	Recand_party	The elected party was running for re-election (1= yes, 0= no). [a]	4,448	0.41	0.49	0	1
	Competition_no_opponents	Number of opponents to the current mayor in the election. [a]	4,448	2.25	1.51	0	10
	political_polariz_win_margin	Political polarization (winning margin) measured as % difference in votes between 1st and 2nd political options (empty cells indicate that there was only one candidate for mayor, with no opponents). [a]	4,123	25.97	17.21	0.06	86.74
	partisan_right	Political alignment of party that won the election "right". [a]	4,448	0.49	0.50	0	1
	partisan_left	Political alignment of party that won the election "left". [a]	4,448	0.25	0.43	0	1
	partisan_centre	Political alignment of party that won the election "centre". [a]	4,448	0.10	0.30	0	1
	align_1st_nat_coal_party	Takes value 1 when mayor's party or first party (if there is a local coalition) coincides with national ruling party, if no coalition, or first party of the national coalition. Otherwise, zero. [a]	4,448	0.41	0.49	0	1
Socioeconomics	*Unemp_rate*	Unemployment rate (% of labour force). [e]	3,892	13.44	9.33	0.41	57.92
	Unemp_rate_sq	Unemployment rate (% of labour force) squared, to check for a nonlinear relationship with electoral turnout. [e]	3,892	267.60	375.31	0.17	3,354.63
	Income_tot_pc	Per capita income of the LG's citizens (Croatian kunas) [e]	3,892	27,56	7,19	8,685.67	53,102.38
	Income_tot_pc_sq	Per capita income of the LG's citizens (Croatian kunas) squared, to check for a nonlinear relationship with electoral turnout. [e]	3,892	81 E+07	41 E+07	7.54E+07	3E+11
	Est_Pop	Estimated population of the LG. [f]	3,892	7,411.73	36,09	129	809,235
	Dep_ratio	Dependency ratio: % of population 65+/population between 15 and 65. [e]	3,892	30.60	11.58	14.3759	178.05
	Av_grade_8th_grade	Educational level, from 1 to 5 (grades range from 1 fail to 5 outstanding). [g]	3,968	4.03	0.24	2.33	5
	Internet_access	Internet access among households in each LG (in %). [h]	3,892	43.78	16.66	0	168.66

[a] State Electoral Commission. [d] Ministry of Finance. [e] Ministry of Regional Development and EU Funds. [f] Croatian Bureau of Statistics. [g] Ministry of Science and Education. [h] Croatian Regulatory Authority for Network Industries.
In partisan dummy variables (*partisan_right*, *partisan_left*, *partisan_centre*), the categories omitted to prevent collinearity are the LG winning parties not allocated to these traditional categories, therefore categorized as nonpartisan. Correlations between variables are available upon request to the authors.

Since elections take place in May (19.05.2013, 21.05.2017, 16.05.2021), it is reasonable to expect that the electoral year has a small influence on voter turnout, as only one-fourth of the year has passed when voters cast their ballots. Accordingly, there are two specifications for each of the dependent variables: two for council elections (*Turnout_council_2*, *Turnout_council_3*) and another two for mayor elections (*Turnout_mayor_2*, *Turnout_mayor_3*). The "*_2*" and "*_3*" stand for the influence of the election year on voters. As table 1 explains, "*_2*" indicates that both pre-electoral and election years influence the turnout of upcoming elections. However, "*_3*" specifies that pre-electoral years influence the turnout of upcoming elections, but the election year is assumed not to influence that year's turnout. We will compare these two specifications to account for the influence of the date of LGs' elections on electoral turnout.

The Open Local Budget Transparency (OLBT) index, which ranges from 0 to 5, is based on the online publication of five key documents: the mid-year report, the year-end report, the budget proposal, the enacted budget, and the citizens' budget. Of these, the mid-year report, year-end report, and enacted budget are mandatory for publication under the Budget Act and the Act on the Right of Access to Information. The Ministry of Finance recommends the additional publication of the budget proposal and the citizens' budget on official websites. The OLBT index's construction is fully described by Ott et al. (2018).

There is a variable, measured by Vukovic (2017), which accounts for LGs' corruption. This variable only shows corruption for some LGs, and it would reduce the N of the regressions. For this reason, we have run separate OLS regressions with this corruption variable, as lack of data makes panel data not feasible (these regressions are available upon request to the authors).

4 Discussion

Tables 2 and 3 show the empirical analyses, together with expected signs.

The previous electoral turnout (*lag_Turnout_council_2*, *lag_Turnout_council_3*, *lag_Turnout_mayor_2*, *lag_Turnout_mayor_3*) has a negative influence on the following elections turnout. This is a reflection of the declining municipal electoral turnout (Lysek, 2024). On the other hand, budget transparency (*OLBI*, *OLBI_voluntary_disclosure*) does not affect electoral turnout. This result disagrees with most of the literature and theory, which posits that higher budget transparency encourages citizens to engage in politics and thus to vote more. However, our result is consistent with those of Serrano-Cinca et al. (2009), del Sol (2013) and Smith and Cheng (2006). As context matters, one of the likely explanations for this is the lack of interest of Croatian people in politics and economy (Bastida, 2023) but also, more specifically, in budgets. Ott and Bronic (2015, p. 4–5) found that citizens are unlikely to even inform themselves about budgets because, as some of them argued, "nothing can be found out, and even less can you influence anything in a country in which you can just take part in the elections, and then you don't vote for what you think is good, but only for what is less bad". Ott et al. (2019) also indicate that Croatian voters stubbornly vote for right-wing politicians, even though the latter often show low transparency. Similarly, Šiber (2004) argues that the feeling of helplessness has a major impact on the low voter turnout in Croatia. This is also in line with what Brender (2003) argues that mostly local elections are decided based on national party preferences and, in many cases, voters do not possess the needed information to evaluate LGs' performance. While budget transparency may enhance accountability in principle, its effect on turnout at the local level is likely moderated by citizens' recognition of the limited control that LGs have over their fiscal environment.

Table 2. Determinants of turnout on **council** elections (*Turnout_council_2*, T*urnout_council_3*)

Dependent variable:		*Turnout_council_2*	*Turnout_council_2*	*Turnout_council_3*	*Turnout_council_3*
Panel data model specification		*FE*	*FE*	*FE*	*FE*
lag_Turnout_council_2 (+)		***-0.2547	***-0.2547		
lag_Turnout_council_3 (+)				***-0.2765	***-0.2776
Transparency	*OLBI* (+)	0.0306		-0.0199	
	OLBI_voluntary_disclosure (+)		0.0395		0.0700
LGs' management	*Log_Direct_debt_pc_uncons_e* (+)	-0.0622	-0.0613	-0.0050	-0.0080
	Buda_balance_uncons_exec (?)	-0.0053	-0.0053	-0.0049	-0.0049
	Benefits_pc_cons_exec (+)	***0.0036	***0.0036	***0.0033	***0.0033
	Tot_exp_pc_uncons_exec (?)	-0.0001	-0.0001	*-0.0002	*-0.0002
	Fisc_cap_pc_uncons_exec (?)	0.0000	0.0000	0.0000	0.0000
	munic_perform (?)	0.0000	0.0000	0.0000	0.0000
Politics	*Female_mayor* (+)	-0.0961	-0.0934	-0.4488	-0.4832
	Recand_mayor (?)	0.1403	0.1425	0.2405	0.2369
	Recand_party (?)	***-0.8702	***-0.8710	***-1.3046	***-1.3021
	Competition_no_opponents (+)	-0.1055	-0.1053	-0.1563	-0.1616
	political_polariz_win_margin (-)	*-0.0142	*-0.0142	**-0.0200	**-0.0199
	partisan_right (?)	-0.8127	-0.8113	**-1.3031	**-1.3115
	partisan_left (?)	-0.5591	-0.5613	-0.7502	-0.7590
	partisan_centre (?)	-0.8813	-0.8674	***-1.8251	***-1.8641
	align_1st_nat_coal_party (?)	*-0.5162	*-0.5137	**-0.5645	**-0.5696
Socioeconomics	*Unemp_rate* (-)	**0.1396	**0.1386	**0.1577	**0.1662
	Unemp_rate_sq (+)	*-0.0028	**-0.0028	**-0.0033	**-0.0034
	Income_tot_pc (+)	-0.0001	-0.0001	-0.0001	-0.0001
	Income_tot_pc_sq (-)	0.0000	0.0000	0.0000	0.0000
	Log_Est_Pop (-)	***-10.6474	***-10.6055	**-8.9763	**-9.0531
	Dep_ratio (+)	***0.0000	***0.0000	***0.0000	***0.0000
	Av_grade_8th_grade (+)	0.0426	0.0465	0.0523	0.0403
	Internet_access (?)	0.0204	0.0205	0.0182	0.0174
Hausman endogeneity test		$\chi^2(18)$= 302.50***	$\chi^2(18)$= 351.76***	$\chi^2(18)$= 1,065.53	$\chi^2(18)$= 1,128.27
R^2		0.1925	0.1923	0.1591	0.1593
N		1,704	1,704	1,704	1,704

Fixed effects or random effects models for panel data: FE= fixed effects; RE= random effects. Sig.: *10%, **5%, ***1%. Expected sign below each variable: (+), (-). All models include a non-reported intercept. Variables: *Log_Direct_debt_pc_uncons_exec* and *Log_Est_Pop* are the original variables (*Direct_debt_pc_uncons_exec*, *Est_Pop*) transformed with a natural log to account for their skew.

Table 3. Determinants of turnout on **mayor** elections (*Turnout_mayor_2*, T*urnout_mayor_3*)

Dependent variable:		*Turnout_mayor_2*	*Turnout_mayor_2*	*Turnout_mayor_3*	*Turnout_mayor_3*
Panel data model specification		*FE*	*FE*	*FE*	*FE*
lag_Turnout_mayor_2 (+)		***-0.2796	***-0.2806		
lag_Turnout_mayor_3 (+)				***-0.3147	***-0.3174
	OLBI (+)	0.1003		0.0440	
Transparency	*OLBI_voluntary_disclosure* (+)		0.1919		*0.2810
Municipal	*Log_Direct_debt_pc_uncons_exec* (+)	-0.1381	-0.1368	-0.0981	-0.1027
	Budg_balance_uncons_exec (?)	-0.0023	-0.0021	-0.0024	-0.0023
	Benefits_pc_cons_exec (+)	***0.0055	***0.0055	***0.0046	***0.0046
	Tot_exp_pc_uncons_exec (?)	0.0000	0.0000	0.0000	0.0000
	Fisc_cap_pc_uncons_exec (?)	-0.0001	-0.0001	-0.0001	-0.0001
	munic_perform (?)	***0.0000	***0.0000	0.0000	0.0000
Politics	*Female_mayor* (+)	-1.2059	-1.2198	***-2.5174	***-2.5954
	Recand_mayor (?)	-0.2211	-0.2153	-0.1638	-0.1660
	Recand_party (?)	**-0.7749	**-0.7757	***-1.0553	***-1.0510
	Competition_no_opponents (+)	0.0878	0.0847	0.1073	0.0946
	political_polariz_win_margin (-)	*-0.0176	*-0.0175	***-0.0250	***-0.0249
	partisan_right (?)	-0.7111	-0.7125	**-1.2975	**-1.3165
	partisan_left (?)	-0.1293	-0.1430	-0.2836	-0.3095
	partisan_centre (?)	0.2183	0.2431	-0.8009	-0.8565
	align_1st_nat_coal_party (?)	**-0.6378	**-0.6321	**-0.6659	**-0.6709
Socioeconomics	*Unemp_rate* (-)	0.0856	0.0875	0.0552	0.0724
	Unemp_rate_sq (+)	*-0.0028	*-0.0029	-0.0025	*-0.0027
	Income_tot_pc (+)	**-0.0004	**-0.0004	**-0.0004	**-0.0005
	Income_tot_pc_sq (-)	**0.0000	**0.0000	**0.0000	**0.0000
	Log_Est_Pop (-)	-5.7924	-5.6878	-7.2953	*-7.3474
	Dep_ratio (+)	***0.0000	***0.0000	***0.0000	***0.0000
	Av_grade_8th_grade (+)	0.2123	0.2188	0.2798	0.2631
	Internet_access (?)	**0.0406	**0.0404	**0.0384	**0.0366
	R^2	0.0945	0.0905	0.1101	0.1111
	N	1,704	1,704	1,704	1,704

Fixed effects or random effects models for panel data: FE= fixed effects, RE= random effects. Sig.: *10%, **5%, ***1%. Expected sign below each variable: (+), (-). All models include a non-reported intercept. Variables: *Log_Direct_debt_pc_uncons_exec* and *Log_Est_Pop* are the original variables (*Direct_debt_pc_uncons_exec*, *Est_Pop*) transformed with a natural log to account for their skew. Hausman Test applied reported $\chi^2 < 0$, not meeting asymptotic assumptions of Hausman test. Lack of observations prevented us from testing residual significance with Oberfichtner and Tauchmann (2021) procedure. Thus, FE are applied on all regressions, assuming that there is endogeneity.

Budgetary balance (surplus/deficit) does not have an impact on voters' turnout. Accordingly, it seems that voters are not concerned by short-term budget deficits, which contradicts the predictions of Martins and Veiga (2013).

In LGs that offer higher benefits for citizens per capita (*Benefits_pc_cons_exec*), citizens vote more, a finding that agrees with Pacek and Radcliff (1995). This is a clear case of political participation in elections to secure benefits or, as Arawatari and Ono (2020) point out, a citizens' strategy of voting to secure welfare benefits. Citizens participate to vote for the party that provides the benefits they require.

When the party in office is reelected (*Recand_party*), electoral turnout is lower. This is probably due to voters' prior certainty that this circumstance will happen. If voters think that the current ruling party will surely be reelected, a single citizen's vote is useless and cannot change anything. The same finding appears on the electoral win margin (*political_polariz_win_margin*), since a greater winning margin disincentives voters from participating in the elections, as there is less room for influencing the final electoral outcome. Both results are consistent with the basic rational choice model of voting (turnout is higher in more competitive political systems) and the results obtained by Indridason (2008).

Voters' alignment with the three political partisanship variables (*partisan_right*, *partisan_left*, *partisan_centre*) does not prompt voters to go to the polling stations. This feature probably stems from the lack of confidence in traditional political parties. As the omitted category refers to parties not classified in these traditional groups, it means that Croatians vote non traditional parties with the hope that something will change. This result is consistent with the findings of Kukec (2022) who uses Croatian municipal election data (2001–2017) to show that non-partisan lists increase turnout, especially in smaller LGs. It is also in line with the trend of a weakening of traditional parties in favor of new (often populistic) parties in European countries (Marcos-Marne et al., 2020) and theories of electoral decision-making, which posit that citizens vote for parties with which they identify (Busch, 2016).

A higher dependency ratio (*Dep_ratio*), i.e., the share of the population 65 and older over the working age population (15-65), shows a positive influence on electoral turnout. As LGs have some responsibilities in providing government support to the elderly (e.g., different welfare benefits for pensioners, such as free LG transportation and supplementary pension), this result was expected and agrees with the logic of citizens who support policies that benefit them (Chareka et al., 2006; Martins & Veiga, 2013).

LGs' corruption does not influence electoral turnout. The maximum and most significant coefficient in mayoral election turnout regressions is 0.7943 ($P>|t|= 0.795$), while in the council election turnout regressions, it is 2.7493 ($P>|t|= 0.274$). Our result is consistent with Bågenholm and Charron (2020). We expected this result given Croatians' lack of confidence in their politicians in general and lack of expectations that any politician will curb corruption.

5 Conclusions and policy implications

The empirical analysis of our sample of 556 Croatian cities and municipalities over 2014-2021 shows that local budget transparency does not influence voter turnout. In explaining this relationship, context matters. Local budget transparency in Croatia increased over the analysed period and tended to be relatively high. However, LGs' voter turnout is low because citizens do not possess enough information or skills to evaluate LG budgets, feel helpless, are not interested

in politics/economics/budgets (because the local economic situation, on average, is neither too good nor too bad), and there is a lack of civic activism to keep the government accountable. As Croatia is a postcommunist country, it is reasonable that we find no significant relationship between voter turnout and local budget transparency.

Previous electoral turnout negatively influences the following elections, which reflects the declining municipal electoral turnout in Croatia. This is a trend that exists in many other countries. Interestingly, budgetary balance (surplus/deficit) does not have an impact on voters' turnout. Accordingly, it seems that voters are not concerned by short-term budget deficits.

Voters vote more in cities/municipalities that provide higher welfare benefits per capita. Electoral engagement in this case is aimed at securing these government transfers. In line with this argument, as LGs provide support to elderly individuals, LGs with a higher share of population over 65 vote more.

When the political situation indicates that the ruling party/mayor will most likely be reelected, voters refrain from voting, as they expect that there is no room for change and their vote will become irrelevant. Regarding political partisanship, Croatians participate mostly to support new parties, not historical ones, in the hope that something will change. Amidst this hope for change, corruption does not influence electoral turnout. Croatians' lack of confidence in traditional politicians and lack of expectations that any of them will curb corruption may explain this result.

As argued by the World Bank (2016), citizens' political engagement (including voting) and budget transparency are two main forces (preconditions) determining how political markets will function. However, according to del Sol (2013), to keep politicians accountable, there is also a need for accompanying mechanisms, such as functioning sanctions, citizens' education, media circulation, independent courts, and independent accounting offices. Thus, the policy recommendation for national and local governments as well as journalists and researchers is to find a way to educate and motivate citizens to take an interest in fiscal/budget matters and to encourage them to be more politically engaged (at least to vote in elections). LGs and political parties can explicitly link their political goals to the continuation and strategic expansion of high-impact welfare benefits to mobilize voters, as our findings show this is a clear motivator for turnout. Furthermore, work on increasing the trust of Croatian citizens in politicians and political institutions would be necessary (e.g., judicially process and carry out sanctions against bad politicians and strengthen the role and capabilities of independent courts).

Regarding the limitations of the study, additional variables gauging LGs' performance and voters' demographic data would enrich this empirical article. Unfortunately, such variables were not available. Regarding future research, ad hoc surveys could allow researchers to dive into personal features influencing willingness to vote.

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