Humanities & Social Sciences Communications

ARTICLE

https://doi.org/10.1057/s41599-024-03111-4 OPEN

Keep the (social) distance! Turnout and risk perception during health crisis

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This article investigates the relationship between risk perception and electoral participation of citizens. To assess this, we use the case study of the novel coronavirus and its relationship with voter turnout during the 2020 Romanian elections. We assess the relationship between COVID-19 and citizens' intention to cast a vote by employing an individual model. Additionally, using the share rate of the infected population with COVID-19, we examine the association between the intensity of the outbreak across counties and electoral participation. Either though our research is cross-sectional and focuses on covariation rather than causal relationships, provides insightful results. The individual model shows that the higher the risk perception of infection is, the lower the intention to cast a vote. The aggregated exploratory model employed shows that an increase in the percentage of the shared infected population decreases the chance of electoral participation.

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Introduction

Electoral participation decreased since the late 1980s (Franklin, 2001; Heath, 2007; Kostelka, 2017; Kostelka et al., 2023; Wattenberg and Brians, 2002) across both newly democracies (Comşa, 2017) and established democracies (Blais, 2006, 2009; Blais and Rubenson, 2013). Various explanations, ranging from political disillusionment to the impact of crises (e.g., natural disasters, terrorism, health crisis, economic crisis, etc.) have been offered to explain this decline in the turnout rates (Bellows and Miguel, 2009; Gardeazabal, 2010; Loewenstein et al., 2001). The most recent major health crisis, COVID-19, has placed a profound strain on electoral democracy worldwide, reopening the debate about the turnout decline's determinants (Fernandez-Navia et al., 2021; Santana et al., 2020). The rapid spread of COVID-19 posed not only unprecedented challenges to government representatives around the world, but also affected citizens' health security, increased anxiety levels, and altered risk perceptions (Dryhurst et al., 2020). Therefore, understanding how risk perception affects the political behaviour of individuals during a crisis helps to better design adequate responses in the event of a similar crisis occurring in the future.

In this context, the article contributes to the ongoing research effort investigating COVID-19's impact on turnout and the erosion of democratic electoral institutions. Our article investigates the prospective rationale through which risk perception influences citizens' electoral participation. We aim at adding new empirical insights to the literature on COVID-19's impact on elections by evaluating the citizens' perception of the spread of COVID-19 cases around election day and how this perception affects their decision to cast a vote. The main theoretical contribution we want to make through this article is to evaluate whether the decision to vote or not to vote depends on the citizen's risk perception, translating thus into a risk-as-feelings behaviour. Usually, when exposed to threats, individuals respond to heuristics (Slovic et al., 2004). We assume that emotions based on fear motivate us to distance ourselves from dangerous situations, convincing us that exposure increases the risk (Weber, 2016). In the current literature, the perception of risks related to economic crises received large attention (Weiss, 2024), but there is limited analysis of health-related risk perception's effect on citizens' electoral participation as a factor contributing to turnout decline in new-wave democracies (Picchio and Santolini, 2022; Voda and Vodová, 2023). To approach this, the article makes use of a cross-sectional analysis and a case study focusing on the parliamentary elections held in Romania in December 2020, in the middle of the second wave of the coronavirus pandemic. Investigating the case of Romania is illustrative for two reasons. Firstly, because despite the number of COVID-19 cases at its peak around election day, decision-makers preferred not to change the voting procedures to adjust to the crisis but opted to postpone the local elections from March 2020 to September 2020, de facto prolonging the mandate of democratically elected local officials with five months. Secondly, postponing elections potentially offered major political parties a boost in parliamentary elections organised two months later, as the contagion effects of local elections are supported by empirical evidence (Coman, 2018; Dipoppa and Grossman, 2020; Tavits, 2010). However, this, in turn, increased the risk perceived for the parliamentary elections two months later (Gherghina et al., 2023). Therefore, we analyse the relationship between electoral participation and perception of risk infection. We achieve this by performing a two-dimensional analysis: one at the individual level, with a unit of analysis of the voters, and a second one, at the aggregate level, with the unit of analysis of the county-elections. We attempt to answer two main questions:

(RQ1) To what extent does the perceived risk of infection with the new coronavirus determine citizens to not cast a vote?

(RQ2) How has the COVID-19 crisis affected turnout in a new democracy?

We intend to emphasise that health system infrastructure and the number of COVID-19 cases determined citizens to withdraw from their right to vote. Offering an answer to these questions, we contribute to the literature about turnout decline and risk perception in several ways. First, our results confirm recent findings in the turnout decline literature in the context of the COVID-19 pandemic, but in a previously untested environment: new democracies. Therefore, this article fills the gap in this strand of literature by analysing a national election organised during the second wave of COVID-19 in a new democracy that experienced tough containment policies and restrictions on social mobility and public meetings. Second, our individual and aggregate analyses reveal that while education and GDP growth are normally important determinants of turnout rate, during a crisis the focus of voter's behaviour shifts from rational to more irrational behaviour. Similar patterns are observed at the individual level. Our findings are in line with the literature on risk perception in the sense that the higher the perceived risk the higher the chance for the individuals to withdraw from the act of voting. Third, we conclude that gender influences the intention to vote (females being less probable to vote than males), while age does not influence the intention to vote, during crises with perceived high risk. On one hand, this reveals that elderly people tend not to perceive higher risks when socialising at voting stations, in spite of empirical findings of higher elderly infection rates (Bertoli et al., 2020; Santana et al., 2020). On the other hand, this goes in line with risk perception literature stating that women are more risk-averse than men (Dryhurst et al., 2020; Wheaton et al., 2020).

The remainder of this article is structured as follows. Section 'Literature review' presents the recent findings of the research on turnout and crisis with a focus on COVID-19 and risk perception. Section 'Institutional setting' discusses the institutional setting, while section 'Data and empirical strategy' presents the data employed in the analysis and the empirical strategy. In section 'Results and discussion' we present the results and discuss the results. Section 'Conclusions' concludes.

Literature review

The act of voting raises a series of benefits or costs for the voter depending on the personal interest in politics, a sense of duty, or a preference about the outcome of an election (Blais, 2009; Blais and Achen, 2019). Even if elections represent an opportunity for citizens to hold incumbents accountable, a crisis could decrease the perceived benefits of voting and suppress voter turnout (Hall et al., 2021; McCartney, 2022). Theories based on rational choice, originating with Downs (1957) depict the decision to vote as a rational evaluation of the costs and benefits associated with voting compared to not voting. Generally, voting is perceived as an action with low costs and benefits. It is a decision influenced by minor shifts in the perceived costs and benefits, suggesting that even slight changes can impact an individual's choice to participate in elections (Aldrich, 1993; Constantino et al., 2021). However, a crisis might change the cost-benefit balance.

As uncovered by studies conducted during the first wave of the coronavirus pandemic, participating in the voting process, an activity where social distance is hard to keep, seems to increase the chances of infection and mortality from COVID-19, especially for elderly people (Bertoli et al., 2020; Santana et al., 2020). More silently, crises increase the material, health, or social cost of voting because their impacts affect socioeconomic and

demographic risk factors. Studies assessed that voter turnout dropped sharply in counties and regions with higher positive cases and deaths (Fernandez-Navia et al., 2021; Santana et al., 2020). As a result, voters were faced with the choice of either not voting or voting while risking infection. This health trade-off in connection with the well-established trade-off between the costs and benefits of voting (Aldrich, 1993; Cole et al., 2012; Downs, 1957) forms a complex trade-off triangle. In the trade-off triangle, the decision to vote depends not only on how citizens perceive the disease severity and the infection threat, but also on the desire to punish or reward the incumbents, and personal vulnerability (e.g., due to factors such as age and residency).

Therefore, the literature on voter turnout considers both the rational models followed by a voter as well as the effects of psychological factors such as risk aversion and individual vulnerability on the decision to vote. Evidence from the psychology of decision-making reveals that individuals facing epistemic uncertainty rely on risk perception rather than objective probabilities of the cost-benefit calculations sustained by rational choice theories (Aldrich, 1993; Downs, 1957; Slovic et al., 1981). Even more important is that individuals respond to threats using heuristics even when the magnitude of the threat is known (Slovic et al., 2004). Recent developments have led researchers to increasingly acknowledge the role that affective states play in human decision-making (Loewenstein et al., 2001; Västfjäll et al., 2016). In this context, risk has been suggested to be perceived and acted upon in two ways: (1) risk-as-analysis, in which risk judgments are driven by logical reasoning and deliberation, and (2) risk-as-feelings, in which judgments of risk are the result of momentary and intuitive reactions to dangers and threats (Loewenstein et al., 2001; Slovic and Peters, 2006). Beyond these general ways of perceiving risk, experiential and social-cultural factors, as well as media and communication factors play an important role in the way individuals perceive risk: either as-analysis or as-feelings (Dryhurst et al., 2020). Following this conjecture, we assume that risk perception played a fundamental role in determining citizens' decisions to vote in the election held during the COVID-19 crisis. For instance, the mass media channels that daily communicate the death number as COVID-19 related, contribute to the formation of individuals' risk perception. Research on risk as-feelings argues that affective responses are especially important for hazards with financial or health impacts (Loewenstein et al., 2001). From a similar perspective, the behaviour of individuals during a crisis adjusts in the same direction as their feeling of protection: if individuals feel protected their perceived level of risk decreases, otherwise, it increases. In the COVID-19 crisis, this risk compensation attitude was highly visible because the feeling of protection among individuals increased and the perceived risk decreased only after vaccine dissemination (Iyengar et al., 2021).

In the context of risk perception, this article connects to the research assessing the impact of threats (e.g., terrorism, natural disasters, epidemics) on elections (Bellows and Miguel, 2009; Gallego, 2018; Gardeazabal, 2010; Gasper and Reeves, 2011; Heersink et al., 2017; Joe, 2023). The literature on crisis's effects on turnout arrived at divergent conclusions. Gardeazabal (2010) found out that terrorist activities present in Spain increased the turnout and influenced the vote shares. Similarly, Bellows and Miguel (2009) assessed that people highly exposed to the civil war in Sierra Leone (1991–2009) cast a vote in a higher number than people less exposed to the war. Oppositely, Gasper and Reeves (2011) concluded that when there is major weather damage, voters usually punish incumbents. Likewise, Heersink et al. (2017) assessed that the vote share for the incumbent was negatively affected due to the Great Mississippi Flood in 1927. Regarding electoral participation, Gallego (2018) assessed that guerrilla warfare reduces turnout in Columbia. In line with this research focus, Beall et al. (2016) revealed that disease outbreaks may influence voter behaviour in two ways: (1) to increase voter support for politically conservative candidates and (2) to increase confirmation of popular opinion. Others, such as Abad and Maurer (2020) emphasised that Spanish flu made citizens vote for an anti-incumbent government in the 1918's the Congressional and 1920's US presidential elections. Regarding turnout, other studies, such as the one conducted by Campante et al. (2020) found that the Ebola outbreak resulted in a lower Democratic vote share and lower turnout rate than in the previous congressional elections. A common point of these studies is the unpredictability of voting behaviour when citizens are faced with a trade-off triangle, not only with the usual cost-benefits trade-off of voting.

Recent evidence suggests that the above-mentioned dynamics have also taken place during the COVID-19 pandemic (Cipullo and Le Moglie, 2022; Flanders et al., 2020; Haute et al., 2021; Leromain and Vannoorenberghe, 2022; Neihouser et al., 2022; Vázquez-Carrero et al., 2020). Therefore, this article aligns with the previous and new and limited literature investigating the impact of the crisis on voting behaviour (Cipullo and Le Moglie, 2022; Ivănescu, 2022; Leromain and Vannoorenberghe, 2022; Neihouser et al., 2022; Noury et al., 2021; Picchio and Santolini, 2022). In addition, this article tries to fill a blind spot in the literature, which does not account for the electoral behaviour effects of worldwide-scale events COVID-19 with homogeneous developments in terms of ruptures on economic and political behaviour and anti-crisis policies. The coronavirus pandemic can be regarded from a methodological perspective as precisely offering this comparative and rather homogeneous framework. We will use this comparative framework from the new-wave democracies in which governments and societies have little memory of such large-scale events and less practiced and trained institutional tools to cope with the effects.

So far, the literature has assessed that the COVID-19 pandemic affected citizens' satisfaction with democracy, government trust, and voter support for the incumbents. Several studies have found that lockdown measures increased the chance of the incumbent party being re-elected, particularly in democracies from the West, with a bleeding signalling effect on other countries in the region (Bol et al., 2021; Vries et al., 2021). When controlling for the strictness of lockdown policies a study by Giommoni and Loumeau (2020) revealed that in French municipal elections, the voter turnout and support for the incumbents were higher in localities with stricter lockdown policies. This was in contrast with other studies, such as the one of Byers and Shay (2022) which proves that knowing someone who has been diagnosed with COVID-19 reduces the impact of ideology on a citizen's assessment of political leadership. Other recent empirical studies also assessed the COVID-19 effect on electoral participation emphasising that the rate of citizens exercising their right to vote decreased. High COVID-19-related mortality seems to decrease the turnout both in national and regional elections, as Santana et al. (2020) assessed in their study. This information per se is not necessarily a direct cause for turnout decline but it increases the perception of the risk of infection, therefore increasing the cost of casting the vote.

Other empirical evidence proved that in municipal communities with high spreading rates among the elderly, the pandemic had negative effects on turnout, ranging from 0.5 percentage points (Picchio and Santolini, 2022) to as high as 5.1 percent (Fernandez-Navia et al., 2021).

In line with some mentioned studies, we assume that citizens were discouraged from voting due to the increased health risk associated with the novel coronavirus, which led to a significant

increase in abstentions (Fernandez-Navia et al., 2021). We argue that individuals' reactions were based on risk as feelings behaviour: individuals who perceived greater risks of COVID-19 were more likely to engage in protective behaviours (De Bruin and Bennett, 2020). Moreover, we emphasise that even if the citizens could have perceived the COVID-19 crisis as an incentive to hold officials accountable for harm, as COVID-19 incidence and deaths increase individuals manifested a decrease in the intention to vote due to increased risk. We test our assumption based on an individual model (Model 1) and an aggregated model (Model 2).

In the first part of this article (Model 1), we assume that risk perceptions of the individuals affect their intention to participate in elections. If the risk of infection is perceived as being higher, the probability of casting a vote decreases. Therefore, in the second part of our analysis, we test the following hypotheses:

H1. The increase in the perceived risk of infection decreases the intention of citizens to vote.

In the second model, we theorise that turnout rate declines in locations where COVID-19 outbreaks have been more severe because individuals perceive a bigger threat to their health. Based on this assumption, we conjecture that:

H2. Voters' electoral participation decreases if the percentage of the infected population increases.

The data supports a high correlation between the outcome of individual and aggregated level participation; therefore, we use aggregate data as a reliable proxy for inferring the impact of personal voting behaviors, in a similar perspective and in line with the methodological strategy from the literature inferring the individual level vote-party switch from aggregated electoral volatility (Bartolini and Mair, 2007; Bértoa et al., 2017). Therefore, by testing the above conjectures in a new democracy, we contribute to the recent literature in several ways. First, the findings are consistent with recent research assessing a negative association between the COVID-19 pandemic and turnout: the increased number of COVID-19 cases decreased turnout rates. Second, we test our assumption based on an aggregate and individual model. On an individual level (Model 1), we assume a negative association between the perception of the risk of infection from participating in elections and the intention to vote. On an aggregate level (Model 2) we assume a negative association between turnout rate and the percentage of the population infected: turnout rate decreases as the share of the population infected increases.

Third, to the best of our knowledge, our article is one of the first to assess the connection between COVID-19 and turnout decline in a post-communist country. Although other elections were held during the pandemic crisis in countries such as Croatia, Slovakia, and Lithuania, this article is one of the first to analyse the relationship between COVID-19 and voters' turnout in the Eastern regions of Europe. In contrast, the literature on Western European countries, where nations like France, Germany, and Italy have also experienced varying degrees of electoral participation, emphasises the need for a comprehensive analysis that encompasses the diverse electoral responses to the pandemic across the continent (see Fig. 1).

Assessing the effect of COVID-19 on the electoral process in a post-communist country is an interesting case to study for several reasons. First, the electoral processes of post-communist countries compared to those in Eastern European countries are characterised by more divergent historical, political, and societal contexts which might affect the citizens' political behaviour. Therefore, in post-communist countries, the challenges of conducting elections during the pandemic were compounded by pre-existing vulnerabilities in democratic institutions, varying levels

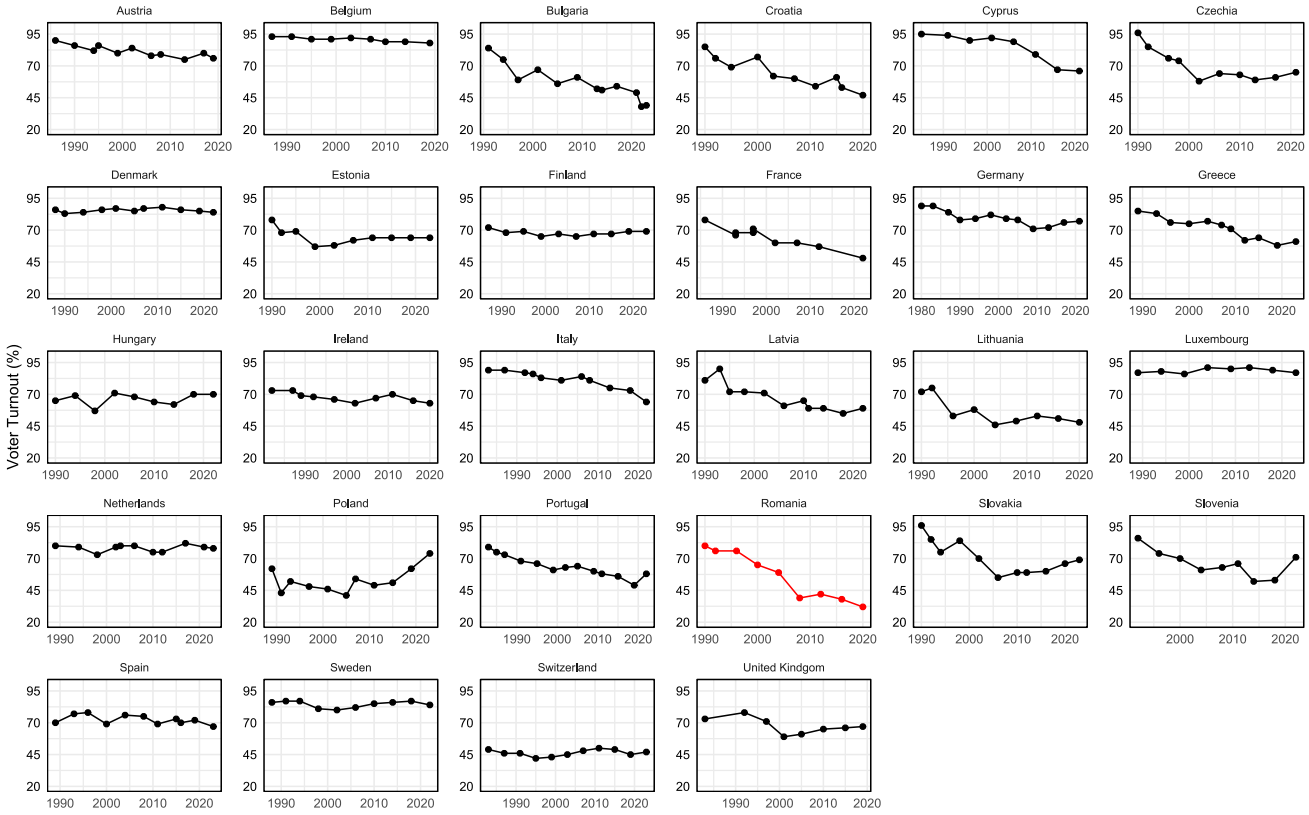

Fig. 1 Turnout rate evolution between 1990–2020 for the European Union countries. Data source: Voting turnout by IDEA International (Voter Turnout Database | International IDEA, last accessed on 16 February, 2024). All the computations are the work of the authors.

of public trust in government, and often more contentious political environments (Merkel and Lührmann, 2021), while in Western countries the level of public trust is higher and the democratic process is more consolidated, enabling them to navigate the pandemic's challenges with less controversy (Angelou et al., 2023; Boin et al., 2021). However, the literature highlights the ongoing struggle of both Western and Eastern countries to balance public health priorities with the imperative of democratic participation (Burkle, 2020; Hosseini, 2023). Thirdly, significant variations exist between Western and Eastern countries in the strategies implemented to ensure the effective organisation of the electoral process (Boin et al., 2021; Burkle, 2020). However, the context of these measures varied significantly due to differences in political culture, trust in institutions, and the public's willingness to engage in the electoral process during a health crisis. Some countries such as Italy, Germany, and France adopted extensive safety measures, mail-in voting options, and digital campaigning to mitigate the pandemic's impact on electoral processes (Kettemann and Lachmayer, 2021).

Furthermore, Western countries, by focusing on digital engagement and the robustness of existing democratic institutions helped them to maintain relatively higher levels of voter turnout and participation, despite the pandemic. On the other hand, many post-communist states faced criticism for their handling of pandemic-related electoral processes. Concerns were raised about the fairness and transparency of the elections, with some governments accused of using the pandemic as a pretext to consolidate power and suppress dissent (Kettemann and Lachmayer, 2021). In the case of Romania, the 2020 round of elections was held under strict health and safety protocols (Džakula et al., 2022; Gherghina et al., 2023). The government and electoral authorities implemented measures to ensure voter safety, such as mandatory mask-wearing, physical distancing at polling stations, and extended voting hours to reduce crowding. Additionally, provisions were made for those in quarantine or isolation due to COVID-19, allowing them to vote at special polling stations or through mobile ballot boxes brought to their homes. Despite these measures, Romania's elections saw a historically low voter turnout, partially attributed to the pandemic and public concerns about safety. This low turnout raised questions about the elections' representativeness and the effectiveness of the measures taken to encourage voter participation under such extraordinary circumstances.

Overall, this article attempts to contribute to the literature on the spread of COVID-19 and electoral participation decline, particularly in Romania where the research on covariation between COVID-19 and elections remains largely untested.

Institutional setting

We evaluate the effect of the COVID-19 health crisis on voter turnout in Romania during the parliamentary elections that took place in December 2020. Romania is a major new democracy with administrative units at the county level (42 counties). The large number of counties and sub-national variation in economic development, healthcare, culture, and public policy makes Romania an important case to study turnout in the context of a crisis like COVID-19.

The reasons to use Romania as a case study of post-communist countries are three-fold. First, these new-wave democracies are distinct in their recent adoption of democratic norms and structures, making their societies both vulnerable and malleable during crises. The pandemic has tested all democracies, but its strain on new democratic systems, where political institutions and civic engagement are still under construction, provides key insights into their robustness and adaptability. Second, voter turnout is indicative of the public's trust and engagement, which are vital signs of a democracy's health. New-wave democracies operate under different political conditions than consolidated democracies, with variations in government trust and information dissemination. These factors can dramatically influence how citizens respond to pandemic-era electoral challenges, like new voting protocols or different voting methods. In places with lower institutional trust, like Romania, these measures may fail to sustain turnout. Third, moreover, the covariation between COVID-19 and voting in emergent democracies sheds light on unique political behaviours and mobilisation strategies, reflecting the volatility and dynamism of their political landscapes.

This scenario allows us to study how young democratic systems navigate crises, with their ability to innovate possibly offsetting their lack of entrenched electoral processes. From a theoretical perspective, the resilience of democratic practices during crises such as a pandemic relies on institutional robustness and public confidence. Young democracies, with their unripe mechanisms and often limited state capacity, may face greater risks of decreased voter turnout. Yet, their flexibility could lead to the rapid adoption of novel, resilient electoral strategies. Romanian case study can provide insightful experiences of citizens' electoral reactions to major crises, with lessons that are relevant for similar new-wave democracies.

Evolution of turnout rate in Romania. The turnout rate in Romania decreased constantly over the years (Comșa, 2015; Kostadinova, 2003). Figure 2 presents the turnout rate at the national level for the last seven parliamentary elections (1996–2020) while Fig. 3 describes the vote share of the two most important parties in Romania between 2008–2020.

We observe that since 1996 the turnout rate constantly decreased, with a minor rebound increase in 2012. From 2012 to 2020 we observe a constant decrease in turnout, the highest decrease being registered in 2020 when the turnout rate was 7 percentage points lower than in 2016. Moreover, the lowest turnout rate registered in Romanian parliamentary elections held since 1989 was in 2020 (32%). A comparable turnout rate (39%) was registered in the 2008 parliamentary elections, riddled by high party fragmentation and voters' distrust of political contenders.

Similar trends can also be observed for presidential and local elections (see Fig. 4). A significant decrease in turnout from 1996 to 2000, a fluctuating increase and decrease in the subsequent years, explained by the economic crisis (Comșa et al., 2009), with a notable peak around 2014, and a sharp decline by 2019. Initially, both the presidential and parliamentary elections in 1996 experienced relatively robust turnout rates, with the former slightly outpacing the latter. Over the years a downward trajectory is observed in both, yet this decline manifests differently. The presidential turnout is characterised by variability and a notable spike in 2014, possibly reflecting the impact of a government decision (led by one of the presidential candidates) to ineffectively organise the voting process for diaspora voters (Gherghina, 2015). In stark contrast, the parliamentary turnout depicts a more uniform and steady erosion of voter participation, culminating in its lowest point in 2020. This contrast might suggest that while presidential elections can be swayed by short-term factors, parliamentary elections perhaps reflect a more sustained sentiment of political disenchantment among Romanian voters. Similarly, local elections reflect this downward trend as well, with Fig. 4 illustrating a significant decline in turnout from 1996 to 2020, punctuated by a slight uptick in 2012, and a significant decline decrease in 2020.

This decline in turnout rates for presidential, local, and parliamentary elections over the years strengthens the assumption

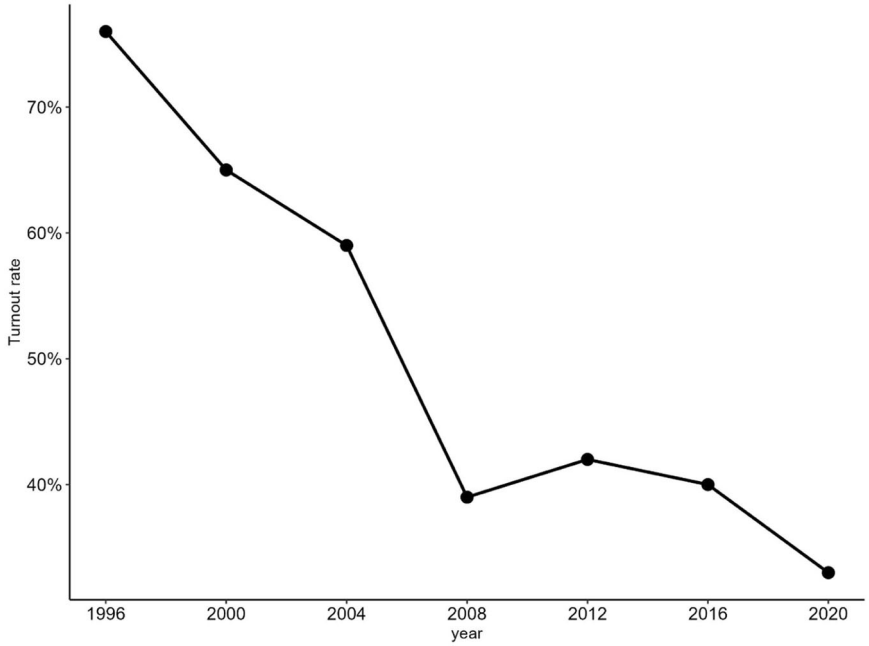

Fig. 2 Turnout rate parliamentary elections between 1996–2020[1]. Data source: Voting turnout by Code for Romania (https://rezultatevot.ro/elections/112/results, last accessed on 10 June, 2022). All the computations are the work of the authors.

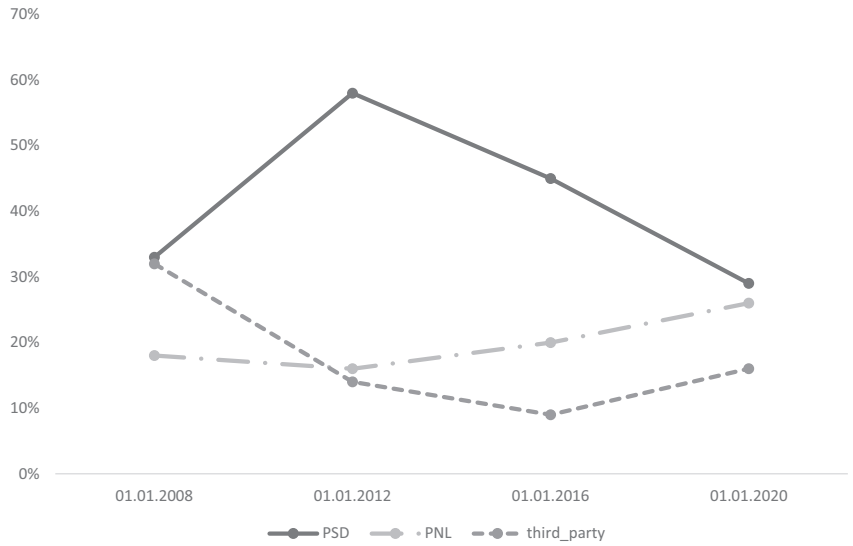

Fig. 3 Vote share between 2008–2020. Data source: Voting turnout by Code for Romania (https://rezultatevot.ro/elections/112/results, last accessed on 10 June, 2022). All the computations are the work of the authors.

that the lower rates of participation in new democracies display tendencies similar to those in their established democratic counterparts (Kostelka, 2017). In this context of turnout decline pattern around new democracies, we consider it relevant to investigate how the crisis affects voters' electoral participation, especially when a crisis poses a threat to their health security as the COVID-19 pandemic did. If we compute the turnout rate difference, we observe that the year 2008 (economic crisis) registered the highest turnout rate difference in the Romanian parliamentary elections, with a significant decrease of approximately 0.34 from the previous election, marking a stark decline in voter participation. A reversal in this trend appeared in 2012, with a slight increase in turnout by about 0.08, perhaps because of the over-dominant position of the anti-austerity political alliance and antagonistic campaigning of populist and personalised new parties (King and Marian, 2014). Then again, in 2016, the turnout rate decreased by nearly 0.05, as a matter of voter decline in trust in parties and ideological shifting towards nationalism (Endre, 2018). The latest data from 2020 (COVID-19 crisis) shows another significant decrease of 0.18, marking the lowest turnout rate in the observed period. While the data clearly show a pre-pandemic trend of decreasing voter turnout in Romania, the advent of the COVID-19 pandemic appears to have exacerbated this decline, accentuating the existing downward trajectory in electoral participation rates.

Parliamentary elections in Romania. The parliamentary elections held in Romania on the 6 December 2020 took place in the context of the COVID-19 pandemic and were the fourth in the

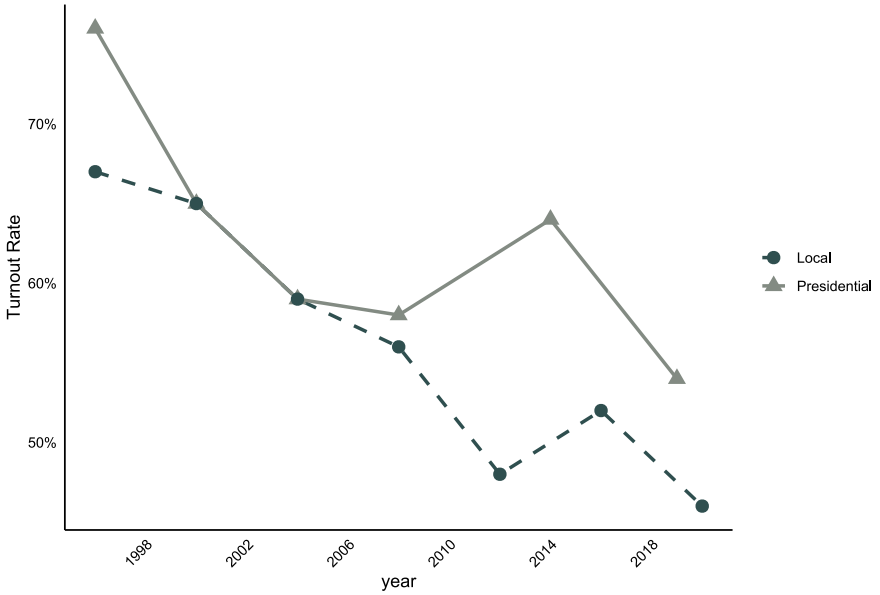

Fig. 4 Turnout rate for presidential (first round) and local elections held in Romania between 1996–2020. Data source: Voting turnout by Code for Romania (https://code4.ro, last accessed on 10 June, 2022). All the computations are the work of the authors.

country in the last two years[2]. Two months before the national elections Romanian citizens had to cast a vote for the local elections (September 2020). Therefore, frequent election campaigns coupled with restrictions due to the pandemic contributed to lower turnout rates[3]. At the time of the elections, the Social Democratic Party (PSD) held the largest share of seats in both chambers of the outgoing parliament[4].

However, it lost parliamentary support for its government in November 2019. Following the 2016 parliamentary elections, the PSD formed a left-wing government together with the Alliance of Liberals and Democrats (ALDE), while the opposition was secured by the National Liberal Party (PNL), the Save Romania Union (USR), the Democratic Union of Hungarians in Romania (UDMR), and the People's Movement Party (PMP). As always after the 1992 elections, the representatives of ethnic minority parties supported the government without being members of the governmental coalition. The PSD-led government had three different prime ministers and multiple changes in ministerial offices. Despite some members of parliament switching parties during their parliamentary mandate, PSD always held the largest number of mandates. In October 2019, a vote of non-confidence led to the formation of a new government, led by PNL. Ludovic Orban, the PNL's leader, was appointed Prime Minister and formed a minority cabinet. This lasted until 5 February 2020, when the new government lost the vote of no-confidence sponsored by the former PSD-led alliance. The Minister of Public Finance, Florin Cîțu, was nominated by Romania's President, Klaus Iohannis, to form a new cabinet.

However, within a month, things got complicated. The country's Constitutional Court rejected a Government Emergency Ordinance calling for early legislative elections, creating political worries inside parties concerning organising elections during unprecedented pandemic contexts. The same day, Cîțu resigned just before receiving the vote of confidence in parliament. On 14 March 2020, Orban returned to office with a minority government after receiving the support of a parliamentary majority. His second cabinet received broad parliamentary support, mainly due to the outbreak of Covid-19 in Romania that month.

COVID-19 pandemic in Romania. The first coronavirus infection was confirmed in Romania on 26 February 2020, as Fig. 5 shows. The figure presents the evolution of COVID-19 cases at the national level. As the figure shows, while the number of new cases was in a downward trend at the time of the elections, there was still a higher number of cases per day compared to previous months. Moreover, during the election campaign, Romania was in a descending trend in the number of cases, but immediately after the election, an ascending trend was observed[5].

The Romanian government gradually imposed several restrictions: a 14-day institutionalised quarantine (21 February), a ban on public gatherings and school closures (8–13 March), and a 30-day state of emergency in which individual liberties were diminished (16 March), later prolonged until May 2020. The national lockdown was imposed in Romania on 24 March 2020 with a 30-day state of emergency extension on 14 April 2020. During the lockdown, the number of daily new infections gradually decreased, allowing the government to start a campaign of relaxing its anti-crisis measures in mid-May 2020 (see Fig. 5). The summer holiday period and the pressure to restart various economic activities such as the hospitality industry, have justified a large-scale relaxation of restrictions.

However, the number of total cases, up to four months before the national election day, increased to 513,576, while the number of new cases on the 6 December was 5,231. The number of deaths was also increasing daily, with a total of 12,320 deaths up to four months before the election day, and 134 new deaths on the election day. The high number of cases can have at least two explanations: (1) the large-scale relaxations of restrictions, and (2) the electoral campaign and the local elections held in September 2020. Therefore, the low turnout rates in national elections on the 6 December may also be caused by the fact that voters perceived a bigger risk to cast a vote after showing the ballots two months before[3].

Data and empirical strategy

Data. To test the main hypothesis of the first part of our analysis (H1), we use data collected in June 2020 from the national survey of IRES (The Romanian Institute for Evaluation and Strategy) (IRES, 2022). We extracted the following information from the

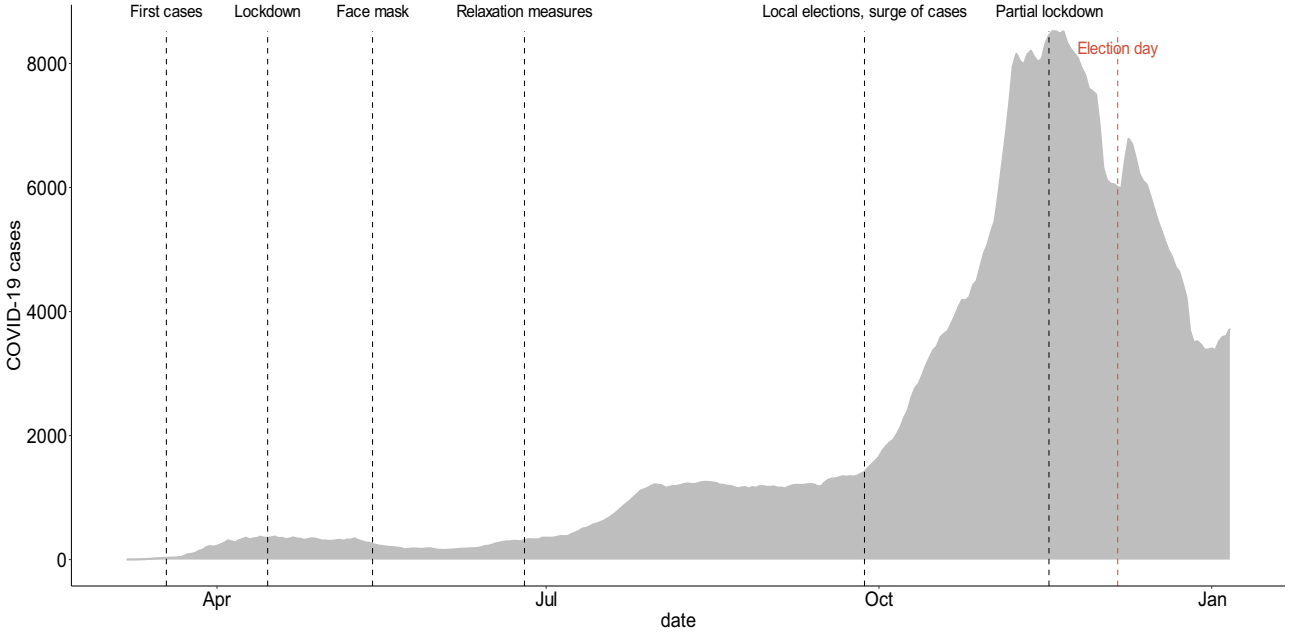

Fig. 5 Daily registered COVID-19 cases in Romania. Data source: UBB-FSEGA (2022): COVID-19 - Romanian Economic Impact Monitor, https://econ.ubbcluj.ro/coronavirus/, last accessed: 10/06/2022. All the computations are the work of the author.

main dataset: voting intention and perceived risk of infection. To control for potential omission bias we also extracted the perception of the optimal conditions for the election, the perception of postponing or not the election, age, gender, residence, and education, as well as the voting in the last election and vote option formed. We applied several computations for our variables. Age was recoded as age interval (18–35, 36–50, 51–65, more than 65), gender was recoded as 1 being female and 0 being male, and education was recoded as the level of education (elementary education, medium education, higher education). The whole list of variables and descriptive statistics can be accessed in Appendix A, Tables A1–A4. To test the hypothesis of the second part (H2), we use data from several sources. First, we collect data on electoral turnout at the county level for the 2020 parliamentary election. Second, we use data on COVID-19 intensity at the county level. Third, we include several control variables (socio-economic variables) such as the rate of the active population, the percentage of people over age 60, and education. The final dataset includes all counties in Romania (42 counties including the capital city of Bucharest).

For assessing the turnout rate, we gathered data from the Permanent Electoral Authority (PEA). PEA released data for elections in all counties. We extracted information on registered voters, votes cast from the electoral list, and valid votes then computed the dependent variable—turnout rate—as the ratio of all present voters divided by the number of registered voters in each county.

To measure the intensity of COVID-19 at the county level we gathered data from UBB-FSEGA (2022): COVID-19—Romanian Economic Impact Monitor (UBB-FSEGA is The Faculty of Economics and Business Administration of the Babes-Bolyai University from Cluj-Napoca). The source has cumulative daily data at the county level on the number of infected people with COVID-19 and population size (UBB-FSEGA, 2022). To account for intensity, we computed the main explanatory variable as the number of infected people per population size. Therefore, we can observe the percentage of the population infected with COVID-19 in each county. The cumulative cases of COVID-19 correspond to a period of four months before the national election day (from the 5 of August to the 5 of December). The rationale for using this window period lies in the fact that the survey was applied in June 2020. Using a window of four months before the election for the aggregated model (Model 2) we intend to analysis a similar level of risk perception in the aggregated and individual model (Model 1) since the number of cases per day is similar in June and August. For the control variables, we made several computations. First, we extract from the National Institute of Statistics data the percentage of the active population, GDP, level of education, and people with age over 60 for the years 2016 and 2020. Second, we compute the changes in these variables between 2016 and 2020 (former and latter parliamentary elections). For variable age, we also computed the number of people with age over 60 as a percentage of the total population in each county.

Empirical setting. In the first part, we intend to assess the effect of COVID-19 at the individual level. Employing data collected within a national survey, we extracted several variables. The dependent variable is the vote intention, while the main exploratory variables are the perceived risk of infection, the perception of optimal conditions for the election, and the perception of postponing or not the election. We also extracted several control variables. The statistical model employed to answer H2 is binary logistic regression. We compute Eq. 1:

$$\log\left(\frac{p_i}{1-p_i}\right) = \beta_0 - \beta_2 * higher\ risk\ perception - \beta_3 * postpone\ election + \beta_4 * election\ optimal\ condition + \beta_5 * age\ over\ 65 + \beta_6 * female + \beta_7 * elementary\ education \quad (1)$$

In the second part, we are interested in assessing the connection between aggregate COVID-19 and electoral participation during the 2020 Romanian parliamentary elections. The main explanatory variable measuring the intensity of the pandemic pressure is the percentage of people infected with COVID-19 out of the entire population in one county. A detailed list of the variables and their descriptive statistics can be accessed

Table 1 Logistic regression estimates for the individual model.

	Individual model Model 1 Intention to vote
Perception towards:	
Higher risk of infection	−0.38*** (0.09)
Election optimal condition	0.46** (0.20)
Postponing election	−0.84*** (0.21)
Political behaviour:	
Vote option formed	1.27*** (0.18)
Voting in the last elections	1.31*** (0.25)
Control variables	
Female	−0.26* (0.16)
Age over 65	0.08 (0.19)
Education	−0.38** (0.13)
Urban	0.24 (0.16)
Constant	0.932*** (0.215)
N	898
Log-likelihood	−494.29
AIC	1,008.59

Note: Entries are unstandardised regression coefficients with robust standard errors in parentheses. *, **, and *** denote statistical significance at the 10%, 5%, and 1% confidence. Endogeneity concerns have been considered, and steps have been taken to address potential biases, including the use of additional control variables.

in Appendix A, Table A1 and A2. The most straightforward statistical model is to use the actual turnout rate as a dependent variable and to estimate an OLS model to assess how the explanatory variables are related to turnout.

The article assumes that the turnout rate is negatively affected by the percentage of people infected. To estimate the significance and weight of this relation, we compute equation 2:

$$\text{Turnout}_i = \beta_0 - \beta_1 * \%\,people\ infected + \beta_2 * active\ population + \beta_3 * age + \beta_4 * education + \beta_5 * all\ beds + \beta_6 * ICU\ Beds + \varepsilon \quad (2)$$

Furthermore, for robustness checks, we estimate our base aggregate and individual models several times by including each time new explanatory and control variables. In addition, to verify the connection between age and turnout we estimate a model where age is an interaction term with risk of infection. Our empirical strategy proved that the results are robust across a wide range of measurement strategies and mode specifications and maintain the same pattern as in the base models. As it can be observed in Tables B1, B2, and B3, the explanatory models proved to hold robust, both when checking at the aggregate and individual levels, but also when checking the interaction between the age of the respondents and the propensity of getting infected when being in the most exposed age-group.

Results and discussion

This section presents the results obtained through the OLS model and logit regression model using individual and aggregate data. The two models offer a good overview of how COVID-19 affects voter participation. In Table 1 we present the results of the individual explanatory model (Model 1), while in Table 2 we present the findings of our aggregated model (Model 2).

In Table 1, we present the results of our individual model (Model 1). The logistic regression estimates the effect of individual risk perceptions on the intention to vote.

Table 2 OLS Results for the aggregated model.

	Aggregated model Model 2 Turnout
People infected (%)	−2.873*** (0.336)
Active population (%)	0.001 (0.00)
Age over 60	−0.013 (0.009)
Education (%)	0.003 (0.007)
Constant	0.388*** (0.050)
N	42
Adjusted *R*-squared	0.459
F statistic	18.66*** (df = 79)

Note: Entries are unstandardized regression coefficients with robust standard errors in parentheses. *, **, and *** denote statistical significance at the 10%, 5%, and 1% confidence. The dependent variable is the turnout rate in the 2020 parliamentary election for each Romanian county.

Based on the results in Table 1, we estimate and verify our hypothesis. H1 assumed that the increase in risk perception towards infection decreases the intention of citizens to vote. The regression results show a negative effect of the perception of risk of infection on the intention to vote. One increase in the percentage of perception towards risk of infection decreases by 0.7 percentage points the probability of voting.

The aggregated model (Model 2) aimed to determine if the percentage of the infected population has a negative association with the turnout rate for the 2020 election in Romania (see Table 2). The model yields relatively significant estimates, for the variable measuring the percentage of the population infected with COVID-19 at the county level. We observe statistically significant results for this explanatory variable ($p < 0.01$). In line with the expectations, a 1 percentage point increase in the percentage of the population infected with COVID-19 in one county, reduce the turnout rate by 2.87 percentage points (Fernandez-Navia et al., 2021; Picchio and Santolini, 2022).

Furthermore, the model (Model 2) reveals that the population over 60 does not have a highly significant influence on the turnout rate. However, in terms of direction, the population over 60 does show the same trend in Romania as in other European countries: the increase in the percentage of the population over 60 induces a decrease in electoral participation. This might be explained by the widespread information concerning the high potential risks of old individuals developing life-threatening complications caused by coronavirus infection. Traditionally being disciplined voters in Romanian elections, older voters were not at all more voting averse compared to younger individuals. An increase in the percentage of people over 60 and of the active population has a negative effect on the participation rate, but they are not statistically significant at $p < 0.05$. This finding was also supported by the individual-level analysis (Model 1).

Conclusions

The health crisis generated by the spread of COVID-19 around the world severely affected the participation rate in the elections held during the crisis. In Romania, the COVID-19 pandemic contributed to the continuous decrease in the turnout rate observed from 2016 to 2020. Following the literature on risk perception during the crisis and turnout decline, we argue that individuals react based on a risk as feelings behaviour that determine them to be more risk-averse and withdraw from the threat, especially when their health security is at risk.

First, we assessed at the individual level the effect of risk associated with COVID-19 infection on intention to vote. H1 is validated, indicating that the higher the perceived risk of infection and the higher the desire of postponing the election due to the risk

associated with in-person voting, the lower the probability of casting a vote. We also assessed whether COVID-19 affected turnout during the elections held in December 2020. Our models indicated that one increase in the percentage of people infected with the virus in one county decreases the chance of electoral participation by 2.87 percentage Points. Therefore, H2 is also validated.

Our findings sustain the literature's argument that women are more risk-averse than men (Borghans et al., 2009). This goes contrary to previous electoral results showing women and older individuals being more prone to vote compared to men and young individuals. In the context of high healthcare risks posed by coronavirus infections, it might be the case that women were more sensitive to the health experts' warnings, and they were more attentive to protecting the health of their family members.

Before concluding, we highlight two apparent restrictions for the first part of our study. First, potential endogeneity issues: higher infection risks may be associated with omitted variables. Second, the association between voter participation and infection risk perceptions may be bidirectional, further complicating the interpretation of our findings. To address these concerns, we have first expanded our model to include a range of control variables that the literature suggests may be correlated with both infection risk and voter participation. Second, the Likelihood Ratio Test (LRT) results indicate a significant improvement in model fit when including the variable measuring the perceived risk of infection, indicating its relevance in explaining variations in voter participation. These analyses suggest that our findings are stable across different specifications. Nonetheless, we acknowledge that our results may still be subject to endogeneity, and we interpret them with the necessary caution. Considering the inherent limits of this type of study, we cannot categorically reject the simultaneity of the relationship, however, this does not diminish the qualities, originality, and contribution of this study to the knowledge of the political implications of crises. Further research with more refined methods or data may be needed to fully address these concerns.

For the aggregated model (Model 2), at first view, it might look unclear if the pattern observed in the decrease in voter turnout is pushed by other factors as well (e.g., GDP growth, trust in national institutions, level of immigration, satisfaction with the delivery of public services, etc.). However, the results of our robust models indicate similar results, therefore, rejecting this limitation. Moreover, our results are supported by the actual local turnout rate declared by Romanian' authorities presented in Fig. 4. Therefore, we assume that COVID-19 contributes to the existing pattern of turnout decline, a pattern supported also by previous studies (Blais and Achen, 2019; Comşa, 2017; Fernandez-Navia et al., 2021; Kostelka, 2017; Picchio and Santolini, 2022). Further expanding the analysis to include multilevel data from Romania's regions, counties, and localities could bolster our findings. However, this type of analysis requires data on COVID-19 (cases, deaths, number of beds, ICU beds, etc.) at the local level, for the period before and during elections, which, unfortunately, are not disclosed by the central or local authorities.

In short, the findings align with the recent literature assessing the covariation between COVID-19 and electoral outcomes. This article supports the assumption that crises, especially ones that pose a threat to health security both at community and individual levels, discourage citizens from exercising their right to vote and undermine the electoral process.

Data availability

The datasets analysed during the current study are available upon request from IRES and UBB-FSEGA.

Received: 21 November 2023; Accepted: 25 April 2024;
Published online: 11 May 2024

Notes

1 Figure 2 shows turnout in the last seven parliamentary elections held in Romania. Usually, the election takes place every four years. We used information from the outcomes (weighted by population). The source is PEA. We include in the Supplementary Material (Figure C 1) the turnout rate and vote share evolution at the county level. The results at the county level respect the trend of national turnout rate and vote shares.

2 The four elections were: European Parliament elections (May 2019), presidential elections (November 2019), local elections (September 2020) and parliamentary elections (6 December 2020). The local elections in September 2020 led to a higher number of mayoral seats and positions in county councils for the governmental party, The National Liberal Party (PNL) (38.8% of total mandates). PSD won the most (42.8%) mayoral mandates following the elections local from September 2020.

3 The turnout rate difference between the local elections held on the 27th of September 2020, and the parliamentary elections held on the 6th of December 2020 was 0.13 percentage points.

4 From 1990 to the present day, except for two mandates between 2008 and 2016, Romania used a proportional formula for the electoral system to elect the members of the parliament. An electoral threshold of 5% is required for political parties. For the parliamentary elections, a total of 43 electoral districts are established: 41 constituencies at the level of counties, a constituency in Bucharest, and a constituency for Romanian citizens residing outside the country. The number of mandates for the Senate and the Chamber of Deputies (Parliament's two houses) is determined by referring the number of inhabitants of each electoral district to the electoral quota (one deputy per 73,000 inhabitants in the Lower Chamber and one senator per 168,000 inhabitants in the Upper Chamber), to which is added a mandate of a senator, respectively of deputy, for what exceeds the half of the representation norm. However, the number of senatorial seats in a constituency must not be less than 2, while the number of deputy seats must not be less than 4. In the 2020 general elections, the Romanian Parliament consisted of 465 members – 136 senators and 329 deputies.

5 Figure B1 in Appendix B presents the evolution of stringency in Romania after the COVID-19 outbreak. The Figure B1 shows that during the first months of the pandemic, the stringency index was above 75, to decrease below 50 during the summer coinciding with the large-scale relaxation of restrictions. However, the stringency index started to increase above 50 after the local elections in September to arrive above 75 on the national election day (6 December). The Stringency Index is the composite measure of nine of the response metrics elaborated by Thomas Hale et al. within the Thomas Hale, Noam Angrist, Rafael Goldszmidt, Beatriz Kira, Anna Petherick, Toby Phillips, Samuel Webster, Emily Cameron-Blake, Laura Hallas, Saptarshi Majumdar, and Helen Tatlow. (2021). "A global panel database of pandemic policies (Oxford COVID-19 Government Response Tracker)." Nature Human Behaviour. https://doi.org/10.1038/s41562-021-01079-8.

References

Abad LA, Maurer N (2020) Do pandemics shape elections? Retrospective voting in the 1918 Spanish Flu Pandemic in the United States. https://doi.org/10.2139/ssrn.3680286

Aldrich JH (1993) Rational choice and turnout. Am J Polit Sci 37(1):246–278. https://doi.org/10.2307/2111531

Angelou A, Ladi S, Panagiotatou D, Tsagkroni V (2023) Paths to trust: explaining citizens' trust to experts and evidence-informed policymaking during the COVID-19 pandemic. Public Adm https://doi.org/10.1111/padm.12962

Bartolini S, Mair P (2007) Identity, competition and electoral availability: the stabilisation of European electorates. ECPR Press. pp. 1885–1985

Beall AT, Hofer MK, Schaller M (2016) Infections and elections: did an Ebola outbreak influence the 2014 U.S. Federal Elections (and if so, how)? Psychol Sci 27(5):595–605. https://doi.org/10.1177/0956797616628861

Bellows J, Miguel E (2009) War and local collective action in Sierra Leone. J Public Econ 93(11):1144–1157. https://doi.org/10.1016/j.jpubeco.2009.07.012

Bértoa FC, Deegan-Krause K, Haughton T (2017) The volatility of volatility: measuring change in party vote shares. Elect Stud 50:142–156. https://doi.org/10.1016/j.electstud.2017.09.007

Bertoli S, Guichard L, Marchetta F (2020) Turnout in the municipal elections of march 2020 and excess mortality during the Covid-19 epidemic in France. SSRN Scholarly Paper 3627035. https://doi.org/10.2139/ssrn.3627035

Blais A (2006) What affects voter turnout? Ann Rev Polit Sci 9:111–125. https://doi.org/10.1146/annurev.polisci.9.070204.105121. vol 9

Blais A (2009) Turnout in elections. In: Dalton RJ, Klingemann H (eds.). The Oxford handbook of political behavior. 1st edn. Oxford University Press. pp. 621–635

Blais A, Achen CH (2019) Civic duty and voter turnout. Polit Behav 41(2):473–497. https://doi.org/10.1007/s11109-018-9459-3
Blais A, Rubenson D (2013) The source of turnout decline: new values or new contexts? Comp Polit Stud 46(1):95–117. https://doi.org/10.1177/0010414012453032
Boin A, McConnell A, 't Hart P (2021) Governing the pandemic: the politics of navigating a mega-crisis. Springer, Nature
Bol D, Giani M, Blais A, Loewen PJ (2021) The effect of COVID-19 lockdowns on political support: Some good news for democracy? Eur J Polit Res 60(2):497–505. https://doi.org/10.1111/1475-6765.12401
Borghans L, Heckman JJ, Golsteyn BHH, Meijers H (2009) Gender differences in risk aversion and ambiguity aversion. J Eur Econ Assoc 7(2–3):649–658. https://doi.org/10.1162/JEEA.2009.7.2-3.649
Burkle FM (2020) Declining public health protections within autocratic regimes: impact on global public health security, infectious disease outbreaks, epidemics, and pandemics. Prehosp Disaster Med 35(3):237–246. https://doi.org/10.1017/S1049023X20000424
Byers JS, Shay LP (2022) We have it totally under control? Exploring the effects of ideology and knowing someone diagnosed with COVID-19 on evaluations of president trump's leadership on the pandemic. Am Polit Res 50(1):83–96. https://doi.org/10.1177/1532673X211041319
Campante F, Depetris-Chauvin E, Durante R (2020) The virus of fear: the political impact of Ebola in the U.S. National Bureau of Economic Research. https://doi.org/10.3386/w26897
Cipullo D, Le Moglie M (2022) To vote, or not to vote? Electoral campaigns and the spread of COVID-19. Eur J Polit Econ 72:102–118. https://doi.org/10.1016/j.ejpoleco.2021.102118
Cole S, Healy A, Werker E (2012) Do voters demand responsive governments? Evidence from Indian disaster relief. J Dev Econ 97(2):167–181. https://doi.org/10.1016/j.jdeveco.2011.05.005
Coman EE (2018) Local elites, electoral reform and the distribution of central government funds: evidence from Romania. Elect Stud 53:1–10. https://doi.org/10.1016/j.electstud.2018.01.008
Comșa M (2015) Turnout decline in Romanian National Elections: is it that big? Stud Univ Babes-Bolyai Sociol 6(2):59–84. https://doi.org/10.1515/subbs-2015-0010
Comșa M (2017) Explaining turnout decline in post-communist countries: the impact of migration. Stud Univ Babes-Bolyai Sociol 62(2):29–60. https://doi.org/10.1515/subbs-2017-0010
Comșa M, Gheorghiță A, Tufis CD (2012) Alegerile prezidențiale din România, 2009. Presa Universitară Clujeană
Constantino SM, Cooperman AD, Moreira TMQ (2021) Voting in a global pandemic: assessing dueling influences of Covid-19 on turnout. Soc Sci Q 102(5):2210–2235. https://doi.org/10.1111/ssqu.13038
De Bruin W, Bennett D (2020) Relationships between initial COVID-19 risk perceptions and protective health behaviors: a national survey. Am J Prevent Med 59(2):157–167. https://doi.org/10.1016/j.amepre.2020.05.001
Dipoppa G, Grossman G (2020) The effect of election proximity on government responsiveness and citizens' participation: evidence from english local elections. Comp Polit Stud 53(14):2183–2212. https://doi.org/10.1177/0010414020912290
Downs A (1957) An economic theory of political action in a democracy. J Polit Econ 65(2). https://doi.org/10.1086/257897
Dryhurst S, Schneider CR, Kerr J, Freeman ALJ, Recchia G, Van Der Bles AM, Spiegelhalter D, Van Der Linden S (2020) Risk perceptions of COVID-19 around the world. J Risk Res 23(7–8):994–1006. https://doi.org/10.1080/13669877.2020.1758193
Džakula A, Banadinović M, Lovrenčić IL, Vajagić M, Dimova A, Rohova M, Minev M, Scintee SG, Vladescu C, Farcasanu D, Robinson S, Spranger A, Sagan A, Rechel B (2022) A comparison of health system responses to COVID-19 in Bulgaria, Croatia and Romania in 2020. Health Policy 126(5):456–464. https://doi.org/10.1016/j.healthpol.2022.02.003
Endre B (2018) 2017, Europe's bumper year of elections. European University Institute. Robert Schuman Centre for Advanced Studies. 10.2870/66375
Fernandez-Navia T, Polo-Muro E, Tercero-Lucas D (2021). Too afraid to vote? The effects of COVID-19 on voting behaviour. Eur J Polit Econ 69. https://doi.org/10.1016/j.ejpoleco.2021.102012
Flanders WD, Flanders WD, Goodman M (2020) The association of voter turnout with county-level coronavirus disease 2019 occurrence early in the pandemic. Ann Epidemiol 49:42–49. https://doi.org/10.1016/j.annepidem.2020.06.011
Franklin MN (2001) How structural factors cause turnout variations at european parliament elections. Eur Union Polit 2(3):309–328. https://doi.org/10.1177/1465116501002003003
Gallego J (2018) Civil conflict and voting behavior: evidence from Colombia. Confl Manag Peace Sci 35(6):601–621. https://doi.org/10.1177/0738894218788362
Gardeazabal J (2010) Vote Shares in Spanish General Elections as a Fractional Response to the Economy and Conflict, Economics of Security Working Paper, No. 33, Deutsches Institut für Wirtschaftsforschung (DIW), Berlin
Gasper JT, Reeves A (2011) Make it rain? retrospection and the attentive electorate in the context of natural disasters: MAKE IT RAIN. Am J Polit Sci 55(2):340–355. https://doi.org/10.1111/j.1540-5907.2010.00503.x
Gherghina S (2015) The Romanian presidential election, November 2014. Elect Stud 38:109–114. https://doi.org/10.1016/j.electstud.2015.01.008
Gherghina S, Mișcoiu S, Tap P (2023) Using the pandemic as a pretext: Voter absenteeism in the 2020 elections in Romania. Communist Post-Communist Stud https://doi.org/10.1525/cpcs.2023.1823167
Giommoni T, Loumeau G (2020) Lockdown and voting behaviour: a natural experiment on postponed elections during the COVID-19 pandemic. SSRN Scholarly Paper 3659856. https://doi.org/10.2139/ssrn.3659856
Hall AB, Yoder J, Karandikar N (2021) Economic distress and voting: evidence from the subprime mortgage crisis. Polit Sci Res Methods 9(2):327–344. https://doi.org/10.1017/psrm.2021.3
Haute T, Kelbel C, Briatte F, Sandri G (2021) Down with Covid: patterns of electoral turnout in the 2020 French local elections. J Élect Public Opin Parties 31(sup1):69–81. https://doi.org/10.1080/17457289.2021.1924752
Heath O (2007) Explaining turnout decline in Britain, 1964–2005: party identification and the political context. Polit Behav 29(4):493–516. https://doi.org/10.1007/s11109-007-9039-4
Heersink B, Peterson BD, Jenkins JA (2017) Disasters and elections: estimating the net effect of damage and relief in historical perspective. Polit Anal 25(2):260–268. https://doi.org/10.1017/pan.2017.7
Hosseini SAH (2023) The well-living paradigm: reimagining quality of life in our turbulent world. Discov Glob Soc 1(1):19. https://doi.org/10.1007/s44282-023-00022-8
IRES (2022) The Romanian institute for evaluation and strategy [dataset]. https://ires.ro/
Ivănescu M (2022) Electing the Mayors in Romania's big cities in 2020: voter turnout, legislative changes, and the COVID-19 pandemic. Rev de Stiinte Politice 49:61
Iyengar K, Jain V, Botchu R, Ish P, Vaishya R (2021) Influence of the Peltzman effect on the recurrent COVID-19 waves in Europe. Postgraduate Med J 98. https://doi.org/10.1136/postgradmedj-2021-140234
Joe D-H (2023) Turnout in the time of Corona: evidence from the legislative elections in Korea. Appl Econ Lett 30(8):1124–1129. https://doi.org/10.1080/13504851.2022.2038773
Kettemann MC, Lachmayer K (eds.) (2021) Pandemocracy in Europe. Bloomsbury Academic
King RF, Marian CG (2014) Antagonism and austerity: The December 2012 Romanian parliamentary elections. Elect Stud 34:310–315. https://doi.org/10.1016/j.electstud.2013.09.012
Kostadinova T (2003) Voter turnout dynamics in post-Communist Europe. Eur J Polit Res. 42(6):741–759. https://doi.org/10.1111/1475-6765.00102
Kostelka F (2017) Does democratic consolidation lead to a decline in voter turnout? Global evidence since 1939. Am Polit Sci Rev 111(4):653–667. https://doi.org/10.1017/S0003055417000259
Kostelka F, Krejcova E, Sauger N, Wuttke A (2023) Election frequency and voter turnout. Comp Polit Stud56(14):2231–2268. https://doi.org/10.1177/00104140231169020
Leromain E, Vannoorenberghe G (2022) Voting under threat: evidence from the 2020 French local elections. Eur J Polit Econ 75:102204. https://doi.org/10.1016/j.ejpoleco.2022.102204
Loewenstein GF, Weber EU, Hsee CK, Welch N (2001) Risk as feelings. Psychol Bull 127(2):267–286. https://doi.org/10.1037/0033-2909.127.2.267
McCartney AF (2022) The president who cried voter fraud: a recurring theme of baseless allegations. University of Massachusetts Law Review. vol. 17(1)
Merkel W, Lührmann A (2021) Resilience of democracies: responses to illiberal and authoritarian challenges. Democratization 28(5):869–884. https://doi.org/10.1080/13510347.2021.1928081
Neihouser M, Sandri G, Von Nostitz F, Haute T (2022) Political information consumption and electoral turnout during COVID: the case of the 2020 municipal elections. Fr Polit 20(2):182–209. https://doi.org/10.1057/s41253-022-00173-1
Noury A, François A, Gergaud O, Garel A (2021) How does COVID-19 affect electoral participation? Evidence from the French municipal elections. PLoS ONE, 16(2). https://doi.org/10.1371/journal.pone.0247026
Picchio M, Santolini R (2022) The COVID-19 pandemic's effects on voter turnout. Eur J Polit Econ 73:102–161. https://doi.org/10.1016/j.ejpoleco.2021.102161
Santana A, Rama J, Bértoa FC (2020) The Coronavirus pandemic and voter turnout: addressing the impact of Covid-19 on electoral participation. https://doi.org/10.31235/osf.io/3d4ny
Slovic P, Finucane ML, Peters E, MacGregor DG (2004) Risk as analysis and risk as feelings: some thoughts about affect, reason, risk, and rationality. Risk Anal Off Publ Soc Risk Anal 24(2):311–322. https://doi.org/10.1111/j.0272-4332.2004.00433.x
Slovic P, Fischhoff B, Lichtenstein S (1981) Rating the risks. In: Haimes YY (ed.), Risk/benefit analysis in water resources planning and management. Springer US. pp. 193–217

Slovic P, Peters E (2006) Risk perception and affect. Curr Direct Psychol Sci 15(6):322–325. https://doi.org/10.1111/j.1467-8721.2006.00461.x
Tavits M (2010) Effect of local ties on electoral success and parliamentary behaviour: the case of Estonia. Part Polit 16(2):215–235. https://doi.org/10.1177/1354068809341053
UBB-FSEGA (2022) Romanian Economic Monitor [dataset]. https://econ.ubbcluj.ro/roem/
Västfjäll D, Slovic P, Burns WJ, Erlandsson A, Koppel L, Asutay E, Tinghög G (2016) The arithmetic of emotion: integration of incidental and integral affect in judgments and decisions. Front Psychol 7. https://doi.org/10.3389/fpsyg.2016.00325
Vázquez-Carrero M, Artés J, García CJiménez JL (2020) Empirical evidence of the effects of COVID-19 on voter turnout. Covid Econ Vetted Real-Time Paper 50:181–208. http://hdl.handle.net/10553/106031
Voda P, Vodová P (2023) The effects of COVID-19 pandemic perceptions on voter turnout in the Czech republic. Communist Post-Communist Stud. 56(4):51–80. https://doi.org/10.1525/cpcs.2023.1986333
Vries CED, Bakker BN, Hobolt SB, Arceneaux K (2021) Crisis signaling: How Italy's coronavirus lockdown affected incumbent support in other European countries. Polit Sci Res Methods 9(3):451–467. https://doi.org/10.1017/psrm.2021.6
Wattenberg MP, Brians CL (2002) Partisan turnout bias in midterm legislative elections. Legislat Stud Q 27(3):407–421. https://doi.org/10.2307/3598570
Weber EU (2016) What shapes perceptions of climate change? New research since 2010. WIREs Clim Change 7(1):125–134. https://doi.org/10.1002/wcc.377
Weiss J (2024) Disengaged or raising voices? An analysis of the relationship between individual risk perception and non-institutionalised political participation. Acta Polit 59(2):439–457. https://doi.org/10.1057/s41269-023-00301-x
Wheaton MG, Prikhidko A, Messner GR (2020) Is fear of COVID-19 contagious? The effects of emotion contagion and social media use on anxiety in response to the coronavirus pandemic. Front Psychol 11. https://doi.org/10.3389/fpsyg.2020.567379

Acknowledgements

The data offered to us by the Romanian Institute for Evaluation and Strategy (IRES) and by the UBB-FSEGA (2022): COVID-19—Romanian Economic Impact Monitor has played a fundamental role in the success of this research, providing essential insights, information, and resources that have contributed to the depth and quality of the findings. Without their support and cooperation, this research would not have been possible.

Author contributions

All authors contributed to the study's conception and design. The authors contributed equally to material preparation and data analysis. All authors read and approved the final manuscript.

Competing interests

The authors declare no competing interests.

Ethical approval

This article does not contain any studies with human participants performed by any of the authors.

Informed consent

Not applicable.

Additional information

Supplementary information The online version contains supplementary material available at https://doi.org/10.1057/s41599-024-03111-4.

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