Vote Stealing and Mass Protests in an Authoritarian Regime: Evidence from the Belarus Election of 2020*

Viktar Fedaseyeu
China Europe International Business School (CEIBS)

John G. Matsusaka
University of Southern California

Lei (Adam) Yu
Hong Kong University of Science and Technology (HKUST)

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Economic theories of protest typically assume that protestors receive non-pecuniary emotional or expressive benefits from protesting. This paper provides evidence of the existence and source of such benefits in the context of the mass anti-government protests in Belarus following the 2020 presidential election, which many neutral observers judged to have been fraudulent. Using a novel software platform that allows detection of vote stealing at the precinct level, and mobile phone geolocation data that allows identification of protestors as well as their voting precinct, we show that persons in precincts where votes were verifiably stolen by the government were more than twice as likely to join a mass protest as persons in precincts where votes were not stolen. We conclude that emotional benefits stemming from a sense of personal aggrievement and injustice from having one's personal vote stolen were important motivations for protestors, and not just dissatisfaction with the election outcome itself. We also use our verified measure of electoral fraud to construct lower bound estimates of the amount of vote stealing that occurred.

JEL classification codes: D72, D74, K16. Keywords: protests, collective action, electoral fraud, emotional benefits, expressive benefits, government legitimacy

* Fedaseyeu is at the China Europe International Business School (CEIBS), 699 Hongfeng Road, Pudong, Shanghai 201206, China, Email: viktar.fedaseyeu@ceibs.edu; Matsusaka is at the University of Southern California, Los Angeles CA, USA, Email: matsusak@usc.edu; Yu is at the Hong Kong University of Science and Technology, Hong Kong, China, Email: lyuav@connect.ust.hk. We thank Zhang Mingjun for research assistance.

I. Introduction

Protests against authoritarian regimes are notoriously challenging for economic theory because the individual cost of protesting—personal injury, incarceration, loss of employment, and so forth—can be substantial, whereas the individual impact on regime change is essentially zero since no protester can expect to be pivotal (Tullock 1971). A way around this problem theoretically has been to posit the existence of "expressive" or "emotional" benefits from protest participation, meaning that some citizens receive a direct utility payoff from protesting independent of whether the protest succeeds in changing the regime (Passarelli and Tabellini, 2017; Shadmehr and Bernhardt 2017; Barbera and Jackson 2020; Shadmehr 2021). While the existence of expressive benefits seems necessary to account for the fact that protests occur, there is little empirical evidence estimating the size and sources of these benefits. The purpose of our paper is to provide direct evidence of the importance of expressive benefits, and to link those benefits to a specific source: an individual's perception of having his or her personal vote stolen.

We focus on the mass protests that erupted in the authoritarian nation of Belarus after its 2020 presidential election, an election that many believe was stolen by the incumbent. Protesters took to the streets in the evening of Election Day, August 9, shortly after government television reported that the incumbent had won re-election with over 80 percent of the votes. The following weeks saw mass protests across the country; on August 16 an estimated 200,000 to 500,000 people took to the streets in the capital, Minsk, and over one million protested nationwide, in a country with a population of 9.5 million.

We conjecture that having one's personal vote stolen creates an emotional response that fuels a direct expressive payoff from protesting, as in the theory of Passarelli and Tabellini (2017). In our setting, even though all citizens experienced the same aggregate election outcome, there were marked (and detectable) differences between electoral precincts in the extent of vote stealing. Our premise is that the magnitude of expressive benefits can be detected by comparing the likelihood of protesting in precincts with and without detectable electoral fraud.

The primary innovation of our study is its use of new technologies to collect and link individual-level data on whether a person's vote was stolen and whether the person joined a protest, neither of which are normally observable. We are able to construct verifiable precinct-level measures of electoral fraud using data from Golos ("voice" in English), an independent vote-counting software platform created by a group of Belarusian software engineers prior to the election. Golos allowed citizens to report their votes and post images of their ballots to an online platform using their mobile phones. The platform's reach was substantial: 39 percent of voters in the city of Minsk (the focus of our study) and 18 percent of voters nationwide were registered with Golos. We compare Golos votes with officially reported results to detect electoral fraud: fraud occurred if the opposition candidate received fewer votes in the official results than reported on Golos, and the difference between government-reported and Golos-recorded votes provides a

lower bound on the number of stolen votes. We observe substantial variation across precincts in the amount of vote stealing. To determine whether a person protested and link protest participation to fraud in the person's precinct, we use anonymized mobile phone geolocation data to identify device holders who participated in anti-government protests, and—by identifying the location of each phone during nighttime prior to the election—each individual's precinct of residence.

Our main finding is that individuals from precincts with the median amount of vote stealing were more than twice as likely to join a protest than people living in a precinct without verifiable fraud, suggesting a substantial expressive benefit associated with having one's personal vote stolen. We also find that voters were spurred to protest by both of two types of fraud—(i) their vote was explicitly not recorded in the official totals and (ii) their precinct electoral commission did not reveal the votes it reported to the Central Election Commission.

Our research design is not experimental, but we are able to rule out key potential confounds. One possibility is that precincts differ in social or economic characteristics that themselves influence the willingness to protest. To evaluate whether this explanation drives our results, we construct a sample in which each precinct with no fraud is matched to an adjoining precinct with fraud. Because Minsk is densely populated, its electoral precincts are quite compact, and it is plausible to assume that adjoining precincts have similar socioeconomic conditions. Our results continue to hold in the sample with adjoining precincts. Another possibility is that the government stole more votes in precincts that housed more would-be protesters, that is, precincts that were already more hostile to the regime. To explore this, we estimate whether precincts with high levels of vote stealing had more residents that attended pre-election opposition rallies; we do not find such a relation. We also estimate regressions that control for the number of opposition votes in each precinct, and continue to find that the amount of vote stealing predicts participation in protests. We also explore variation in the method of measuring our key variables.

There is a substantial literature on protests and collective action in authoritarian regimes, much of which revolves around the challenges of overcoming free-rider problems and coordinating participation. Several studies have provided evidence on the importance of cost factors in determining individual participation in protests (DiPasquale and Glaeser 1998; Cantoni et al. 2019; Enikolopov et al. 2020; González 2020). Qin et al. (2021) observe that the most retweeted protest-related posts in China expressed anger and sympathy for protesters, which provides some evidence for the role of anger, but that study does not link anger with actual participation in a protest. Cantoni et al. (2022) describe the personal characteristics of student protesters in Hong Kong, finding that protesters had higher risk tolerance and social preferences than non-protesters, and there is a large literature in psychology describing the personal traits of protestors. We add to this body of work by tracing expressive benefits to a specific source and providing some of the most direct empirical estimates of the impact of expressive benefits on protest participation. A limitation of our study is that its research design is not experimental, but as noted, we

believe our estimates are nevertheless plausibly causal. Moreover, nonexperimental data may be necessary to investigate some of these issues because of the difficulty of designing ethical field experiments involving protestors, given the real costs faced by protestors in nondemocratic regimes.

In addition to establishing a channel through which expressive benefits from protesting are created, our findings suggest, more generally, that citizens have preferences over processes and not just over outcomes. Citizens care not only about the election outcome, but also about the process by which the outcome is achieved. While this might seem unremarkable at first glance, it does run against a baseline assumption of economic theory, that individuals are utilitarians with preferences over outcomes—and therefore (implicitly) do not care how those outcomes are achieved. However, survey evidence suggests that people have significant preferences over how political outcomes are achieved, both in the abstract (Hibbing and Theiss-Morse 2001) and for specific issues (Johnson et al. 2019). Indeed, one view of the populist movements that have flourished globally in the 21st century is that they are fueled in part by concerns that political processes have been captured by elites and are no longer responsive to the people in some broader sense (Matsusaka 2020).

In the case we study, the higher proclivity of people in stolen-vote precincts to protest suggests a strong dislike of electoral fraud above and beyond the distaste that voters may have had for the election outcome. This is not to say that fraud was the only driver of anti-government protests. Indeed, it is hard to imagine supporters of the election victor protesting because their candidate engaged in vote-rigging. What the evidence suggests is that supporters of the losing candidate, while dissatisfied with the outcome of the election, were less likely to publicly challenge the outcome if they believed the process was fair, at least with respect to their own personal vote. Our results, therefore, underscore more generally that government legitimacy can be enhanced by investing resources into ensuring free and fair elections.

II. Background on the 2020 Belarusian Election

Belarus is a landlocked Eastern European nation with a population of approximately 9.5 million, a little less than Hungary and a little more than the U.S. state of New Jersey. It is bordered by Latvia, Lithuania, Poland, Russia, and Ukraine, and has close economic, political, and cultural ties with Russia. Its official languages are Belarusian and Russian, with Russian most common in everyday use.

Belarus became an independent nation after the dissolution of the Soviet Union in 1991. The country was initially a parliamentary republic, ruled by a government headed by Vyacheslav Kebich. In 1994 Belarus was reorganized as a presidential republic and its first presidential election was held in the same year. The Presidency was won by Alexander Lukashenko, in what was considered a fair election by most observers. Lukashenko has ruled the country ever since and his government has become increasingly authoritarian.

Belarus has enjoyed a relatively high standard of living compared to other post-Soviet states. According to the World Bank, in 2020 the country's GDP per capita based on purchasing power parity was $20,317, compared with $13,103 for Ukraine and $30,012 for Russia. Poorer than Russia in terms of per-capita GDP, Belarus has far less income inequality and its poverty rate, at 0.5 percent, is lower than that in any of the EU's post-communist countries (Sierakowski 2020). The country's economic equality is partly due to the fact—unusual among post-Soviet states—that it did not undergo deindustrialization after the collapse of the Soviet Union. The cornerstone of Lukashenko's economic policy was to maintain the Soviet-era national champion enterprises, and state-owned enterprises employ nearly 40 percent of the labor force (Ryzak 2021). At the same time, Belarus has a highly competitive information technology sector, which in 2019 accounted for 6.2 percent of the country's GDP, a higher share than any of the neighboring countries.

Lukashenko has consistently claimed credit for Belarus' relative affluence compared to other post-Soviet countries. Perhaps due to popular perception of economic stability, there has been little sign of economic discontent among the population. But the regime has also discouraged the emergence of political competition by harassing, arresting, and imprisoning opposition figures, and marginalizing or shutting down political parties and civil organization critical of the government. The government tightly controls the media, limiting access to independent sources of information and hindering the organization of political opposition.

The government has routinely manipulated elections to ensure Lukashenko's continued rule. After the 1994 election, every subsequent election was marred by electoral fraud and political oppression. The 2020 presidential election was no exception, with Lukashenko being declared the winner with an implausible 80 percent share of the vote. It might seem puzzling that an autocrat would hold an election, especially one in which opposition parties are allowed to field candidates, when the incumbent has no intention of losing and stepping down. However, it is not unusual for autocrats to hold competitive elections of this sort: Rød (2019) reports 826 competitive elections in 98 authoritarian regimes from 1950-2010. Research suggests that autocrats hold elections in order to gauge the opposition's strength, identify opposition strongholds, and persuade citizens that the support for the government is wider support than it actually is.

In contrast to prior elections, the 2020 presidential campaign was characterized by a high level of civic engagement, which could be traced to the COVID-19 pandemic and Lukashenko's response to it. Even though the World Health Organization declared COVID-19 a global health emergency in March 2020, Belarus' government downplayed the seriousness of the virus. On March 16, 2020, Lukashenko dismissed the threat of COVID-19 and encouraged working in agricultural fields and driving tractors as a way of overcoming the pandemic (AFP 2020): "You just have to work, especially now, in a village [...] there, the tractor will heal everyone. The fields heal everyone." Belarus was one of only a handful of countries that did not implement any COVID-related lockdowns; it maintained only mild restrictions on people's

movement throughout the pandemic. The lack of government response to the pandemic, despite a significant death toll, bred a sense of discontent and created a wide-spread perception that Lukashenko was losing touch with reality. Popular discontent gave rise to a range of grass-root initiatives that increased political engagement. Long queues formed to support the registration of opposition candidates.

The independent vote-monitoring platform named Golos was set up in June 2020. Belarus has a large number of skilled software engineers and a general population that is accustomed to using technology in everyday life. By the time of the election in August 2020, the Golos platform had 1,261,127 registered users, who eventually submitted 1,049,344 unique confirmed votes (Golos 2020). Golos captured 18 percent of the voters who, according to the government's data, took part in the election country-wide. For the city of Minsk (Belarus' capital city and the focus of our empirical analysis), the platform recorded 332,535 votes, representing 39 percent of those who took part in the election.[1] The existence of Golos created an unprecedented opportunity for citizens to monitor the electoral process and detect fraud.

In the election, opponents of the regime converged on the candidacy of Sviatlana Tsikhanouskaya, who chose to run after her husband, who had planned to stand for election, was arrested and prohibited from running. When the official results were announced, with an implausibly high 80 percent vote share for Lukashenko, many citizens and external observers condemned the election as fraudulent. There followed the largest mass protests since the country's independence. On August 16, 2020, between 200,000 and 500,000 people took part in peaceful protests in Minsk alone, with over a million people protesting all over the country.[2]

The protests were peaceful and self-organized. Lukashenko had arrested most of his key opponents prior to the election, and Sviatlana Tsikhanouskaya was forced into exile shortly after the vote. Lack of easily identifiable protest organizers made it difficult for the government to arrest key figures and enabled the protest movement to expand rapidly to include almost every stratum of Belarus society, from factory workers to doctors to information technology specialists. The latter in particular were a substantial force, helping disseminate information on protest locations and finding workarounds against the government efforts to suppress information (Ryzak 2021).

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[1] The total number of eligible voters in Belarus at the time of the 2020 presidential election was 6,904,649 people, of which 5,818,955 people actually voted, according to the official tally; in the city of Minks, there were 1,264,491 eligible voters, of which 850,545 people actually voted, according to the official tally. Source: *The Central Election Commission of the Republic of Belarus*, Final Results of the 2020 Presidential Election; available at https://www.rec.gov.by/files/2020/gol_itog.pdf, retrieved on December 12, 2023.

[2] Source: *«Еврорадио»: Митинг в центре Минска собрал около 400 тысяч человек*, Хартия'97 (16 августа 2020), August 16, 2020; available at https://charter97.org/ru/news/2020/8/16/389823/#google_vignette; retrieved on September 1, 2020. See also Nechepurenko and Higgins (2020).

The government reacted with repression, mass incarceration, and suspected extra-judicial killings. According to the Viasna Human Rights Centre, a Belarusian human rights organization founded by the 2022 Nobel Peace Prize winner Ales Bialiatski, over 35,000 people were arrested for their involvement in the protests. While most Western countries decried the election results and the government's reaction to the protests, Russia offered unwavering support to Lukashenko, and he was able to cling to power. The protests gradually subsided, ending in January 2021.

III. Theoretical Motivation

From a rational choice perspective, individuals choose to protest if the expected costs are smaller than the expected benefits. The expected costs include personal risk (death, injury, incarceration, withdrawal of government benefits, etc.) and informational and logistical costs (learning the location of the protest, the date, how to prepare, etc.). The individual cost associated with personal risk is likely to decline as the number of participants grows, because the chance of being sanctioned is smaller if a person is one in a large crowd. The expected benefits include instrumental benefits (the incremental change in the probability that the protest succeeds weighted by the benefit from the goal), associational benefits (networking with and the company of other protestors, selective rewards provided by the organizers), and expressive benefits. The instrumental benefit is likely to decline as the number of participants increases for the usual free rider reasons. A growing body of economics research explores the network effects of how changes in the number of participants affect individual incentives, and the effect of technology on the information and logistical costs of protesting (Cantoni et al. 2023).

Our focus is on expressive benefits, which consist of utility from the act of protesting such as a feeling of satisfaction from making an effort as well as emotional payoffs stemming from anger and frustration. Expressive benefits are routinely posited in theoretical work on protests, but there is relatively little empirical research in economics quantifying these costs. There is some research, mostly in psychology and sociology, showing that certain types of people (personality, risk preference, politically interested, etc.) are more likely to participate in protests.

Recent research has made progress in incorporating emotional payoffs into a rational choice framework (Battigalli and Dufwenberg 2022). A key insight is that emotional payoffs depend on expectations about fair outcomes. People feel, say, anger when an outcome falls short of what they consider a fair outcome, and this anger fuels an expressive payoff from participating. Along these lines, Passarelli and Tabellini (2017) argue that individuals feel a sense of aggrievement if a government policy outcome is worse than the fair outcome they expect. Moreover, Passarelli and Tabellini (2017) go one step further and conjecture that while individuals have partially altruistic preferences, they care more about injustice to their reference group (or themselves) than injustice to society as a whole. Expressed in terms of our context,

individuals may feel aggrieved if a national election is stolen, but even more aggrieved if votes of their local community (or in the limit, their personal vote) are stolen. The prediction is that persons who experience vote stealing in their local community feel more anger and will be more likely to join a protest. We are not aware of empirical evidence that tests for emotional motives in protests. For ethical reasons, it may be difficult to conduct field experiments that manipulate emotional states in a real protest environment, especially in nondemocratic regimes where experimental subjects are exposed to significant personal risk.

The basic question we seek to answer is whether a person whose vote was stolen was more likely to join a protest. The variables needed to test this hypothesis are normally unobservable. The explanatory variable—vote stealing—is not publicly available. The outcome variable—whether a person protested or not—is also not generally available. A key contribution in this paper is to use recent technological developments to construct both variables.

IV. Data

A. Election Results Reported by the Government

In Belarus, votes are counted at the precinct level, and then forwarded to the Central Election Commission, which reports aggregated national totals. By law, precinct results must be made available to the voters; typically each precinct's electoral commission posts the final tally (the "electoral protocol") on the premises of the polling station, outside the room where vote-counting took place. The Central Election Commission does not report data disaggregated to the precinct level. Fraud can take place during the initial counting in the precincts and during the aggregation phase at the Central Election Commission; we focus on the precinct-level fraud.

Because the Central Election Commission does not report precinct-level votes, during the 2020 election volunteers took pictures of electoral protocols posted outside polling stations in the precincts. We obtained these data from grass-root civic initiatives "Zubr" and "Honest People," which made the photos publicly available.[3] Many precinct electoral commissions did not post their protocols, even though required to do so by law. The data collected by volunteers covers 46 percent of the 687 electoral precincts in Minsk, and 23 percent of all precincts in Belarus.

B. Election Results Reported by the Independent Platform Golos

The Golos platform was created in June 2020 by a group of software engineers in order to provide an independent record of votes. The platform allowed voters to submit their ballot information to the platform, where it would be recorded and made public. Because of concern about repression, Golos was

[3] The data are available at https://partizan-results.com/.

designed so that users remained anonymous. To ensure that users were actually citizens, they were required to verify their mobile phone number; this suffices because a passport identification number is required to obtain a cell phone in Belarus. In addition to self-reporting their vote, users had the option to upload photos of their marked paper ballots (all voting in Belarus uses paper ballots). User-submitted photos were processed by the Golos platform to remove duplicate ballots and ensure that the votes declared by the users matched the votes marked on their paper ballots. About 52 percent of users chose to upload photos of their ballot. In the analysis, we usually use the self-reported votes, regardless of whether a photo of the ballot was also submitted.

We obtained Golos data directly from a representative of the platform. In total, 1,261,127 registered users submitted 1,049,344 unique votes. Using the government's reported number of total votes, the ballots submitted through Golos represented 39 percent of the electorate in Minsk, and 18 percent of the national electorate. Golos users, as would be expected, were not supporters of the incumbent president, casting 96 percent of their votes for the main opposition candidate.

C. Evidence of Vote Stealing

We detect precinct-level vote stealing by comparing Golos data with images of the official precinct-level returns. Specifically, we conclude that election fraud occurred if the opposition candidate received more votes according to Golos than in the official returns. If $\#VOTES_i^{\text{Golos}}$ is the number of votes received by the opposition candidate according to Golos in precinct i, and $\#VOTES_i^{\text{Official}}$ is the official number of votes received by the opposition candidate according to the precinct's election commission, then our estimate of the number of stolen votes in that precinct is:

$$\#STOLEN_i = \max\left\{0, \#VOTES_i^{\text{Golos}} - \#VOTES_i^{\text{Official}}\right\}. \quad (1)$$

Note that $\#STOLEN$ is a lower-bound estimate of the number of votes actually stolen because not all opposition voters used the Golos platform. We truncate $\#STOLEN$ from below at zero under the assumption that the government did not fraudulently *add* extra votes for the opposition. The key variable in our analysis is the fraction of verified votes that were stolen:

$$STOLEN_i^* = \frac{\#STOLEN_i}{\#VOTES_i^{\text{Golos}}}. \quad (2)$$

When official votes are not available because the precinct did not post the electoral protocol, there are two ways to proceed, both of which we explore. The most conservative is to drop those observations; alternatively, we assume that the official number of reported votes for the opposition in that precinct was

zero. We underscore that our measures are conservative—the actual amount of election fraud surely exceeded the amount we record. Nevertheless, our estimates provide verified precinct-by-precinct indicators of fraud, information that is exceedingly difficult for researchers to come by.

Although our primary focus is on protests, not election fraud itself, since we have unique data on vote stealing and quantitative evidence on fraud is rare (Enikolopov et al. 2012; Cantú 2019), here we briefly describe what these data tell us about the 2020 election. According to the Central Election Commission's official results, incumbent President Alexander Lukashenko received 80 percent of the votes while his main opponent, Sviatlana Tsikhanouskaya, obtained 10 percent. To put these numbers in perspective, in the city of Minsk, Golos recorded 320,935 votes for Tsikhanouskaya, whereas the Commission reported that she received only 126,861 votes in the city. Even if we assume, unrealistically, that all of Tsikhanouskaya's voters registered on the Golos platform, then at least 194,074 of Tsikhanouskaya's votes were stolen in Minsk, which amounted to 61 percent of the votes she received there according to Golos. The comparison becomes even more stark if we take into account that not all precinct electoral commissions made their counts available.

Continuing to focus on Minsk, at the level of individual precincts, we find verifiable fraud in 80 percent of the 363 precincts where official election returns were reported. If we also classify as fraudulent those precincts where elections results were not posted, contrary to law, the prevalence of precincts with fraud rises to 89 percent. For precincts where fraud occurred (and for which official election returns were reported), the percentage of votes that were stolen, using our conservative measure, ranged from a low of 3 percent to a high of 92 percent, with an average (and median) across precincts of 57 percent. It is interesting that the amount of vote stealing varied considerably across the precincts: the authorities did not use a mechanical process of stealing a fixed percentage of votes at every location, but apparently stole votes on an ad hoc basis location-by-location. Our findings generally agree with those reached by Golos (2020) in its final report, concluding that the election was "not legitimate; falsifications have been discovered at every third polling place," except that we find a much higher incidence of overall fraud, probably because we focus exclusively on Minsk.

The discrepancies between the official election results and those recorded by Golos became a topic of heated discussion in Belarus in the days after the election. Independent news outlets reported multiple instances of voting irregularities and produced audio and video evidence of vote-rigging in some electoral precincts.[4]

[4] See, for example, "Как в Витебске чиновник заставлял комиссию переделывать протоколы на участке для голосования" Хартия 97, August 11, 2020; available at https://charter97.org/ru/news/2020/8/11/389139/; retrieved on May 10, 2024.

D. Voting Precincts and Protestors

The Golos data enabled individual citizens to detect instances when their own personal vote was likely to have been stolen. This, we conjecture, created a sense of injustice which fueled a personal expressive benefit that increased the propensity to take to the street in protest. To estimate the connection between citizens' personal experience with fraud and their decision to protest, we need to know the precinct where they voted and whether they attended a protest or not. We capture this information from mobile phone data. As described next, we use the location of a phone during nonworking hours to determine the residence of the owner—and thus the owner's voting precinct—and we use the presence of the phone in and around a protest site on the day of a protest to identify protestors.

We obtained mobile device data from LifeSight, a third-party firm that, among other things, collects location data from mobile devices ("phones" for short). LifeSight collects its data through partner apps that request data access upon installation. All data are fully anonymized; however, each device has a unique device ID that does not change over time, allowing us to track the movement of a phone. We treat each phone as one person, although it is possible that different people shared the same phone. As users engage with LifeSight's partner apps, LifeSight collects their latitude, longitude, the operating system of their mobile device (86 percent were iPhones), along with timestamps and other geographic characteristics (such as the country where the device was located). Our LifeSight data cover all devices that were in Belarus at least once between April 2020 and September 2020.[5] Locations were not tracked continuously but sampled multiple times per day.

We assume that a person resided in the electoral precinct in which the person's device was located most often between 9:00 pm and 6:00 am, that is, during nonworking hours. Devices that never appeared within any of the buildings assigned to electoral precincts were excluded. For the remaining devices, we counted all instances when these devices were located within any of the buildings assigned to an electoral precinct, and determined the most common precinct for each device between 9:00 pm and 6:00 am in the four months preceding the election.

Defining the boundaries of electoral precincts required some work because the country's election authorities do not produce maps of electoral precincts. Instead, local election commissions issue announcements that list the buildings (streets and numbers) belonging to each precinct (we provide an example in the appendix). We collected all such announcements for Minsk from the websites of local election commissions, and manually parsed the announcements to extract the list of 28,150 individual buildings that were mentioned. We then collected the latitude and longitude of each building from Google

[5] We chose this time period because the largest protests took place between August and September (i.e., immediately following the election).

Maps API. We obtained the shape of each building in order to identify its precise geographic boundaries, which was necessary to locate mobile devices within each building.[6]

The largest anti-government protests took place in Minsk during the weekends (primarily on Sundays) between August 2020 and September 2020. Our analysis includes seven distinct protests, one each on August 16, August 23, August 30, September 6, September 13, September 20, and September 27. For each protest, we identified its location based on public sources as well as information from the Belarus Ministry of Internal Affairs, which is tasked with maintaining public order and reporting on protest activity.

Some protests took place at an identifiable gathering point, while others were marches along major roads and avenues. For protests with central gathering points, we labeled a person as having participated if the person's mobile device appeared within a 1,000-meter radius of the central gathering point at the time of the protest. For street marches, we labeled a person as having participated if the person's mobile device appeared within a 100-meter distance of either side of the street along which the march took place. For robustness, we also report results for a narrower radius of 500 meters around the central gathering point, and a 50-meter distance on either side of the street where a march took place.

To give a sense of the coverage of our data, our final sample includes 45,837 distinct individuals. Of these, 1.0 percent attended at least one of the seven protests (63 persons attended multiple protests). This number is well below the estimated number of protestors, which media accounts place in the vicinity of 10 to 20 percent. There are several reasons our data may not record a person as protesting who did in fact protest: the person didn't take the mobile device to the protest; the person didn't use one of LifeSight's partner apps during the time of the protest; LifeSight didn't take a snapshot of the user's location during the hours of the protest. The government also used jamming technology to prevent people from accessing the internet during a protest, which could have blocked LifeSight tracking. For all these reasons, we are likely to significantly undercount the number of actual protestors. If we restrict the sample to persons for whom we have at least 500 snapshots of their geolocations during the sample period—where we can be more confident about tracking their movements—the protest participation rate was 3.2 percent, more than three times the rate in the full sample. While our data omit some protestors, the estimates reveal that enough are captured to allow reasonably precise estimates, and to the extent that we misclassify some protestors as nonprotestors, our coefficients will be attenuated. We also show that our findings become more pronounced when we restrict the analysis to the sample with abundant tracking information.

[6] We obtained boundary maps of the buildings in the city of Minsk from NextGIS, a commercial data provider, as well as from a free data source available at https://mapcruzin.com/free-belarus-arcgis-maps-shapefiles.htm. For each electoral precinct, we then manually verified the location of its buildings using Google Maps and selected the shape file that most accurately represented each building as seen on Google Maps.

For one of the tests on potential confounds, we determine if individuals attended any one of three pre-election rallies for the opposition that took place on July 19, July 30, and August 16. These rallies and their locations were determined from media reports, including independent media outlets that were operating at the time. To identify participants in these rallies, we used the same methods as we used to identify post-election protestors. Based on our phone data, we determine that 0.1 percent of citizens attended at least one of the pre-election rallies, a lower participation rate than for post-election protests.

V. Empirical Results

A. Baseline Findings

Our goal is to determine if there is a link between electoral fraud in a precinct and the propensity of an individual in that precinct to join a protest. Figure 1 shows the relation nonparametrically with a binned scatterplot of the percent of opposition votes that were stolen in a precinct against the probability that a resident of the precinct participated in at least one of the protests.[7] There is a clear positive relation that becomes especially pronounced when fraud exceeds 50 percent. Notice that some citizens protested even if there was no fraud in their precinct.

For parametric evidence, we estimate linear probability regressions of the following form:

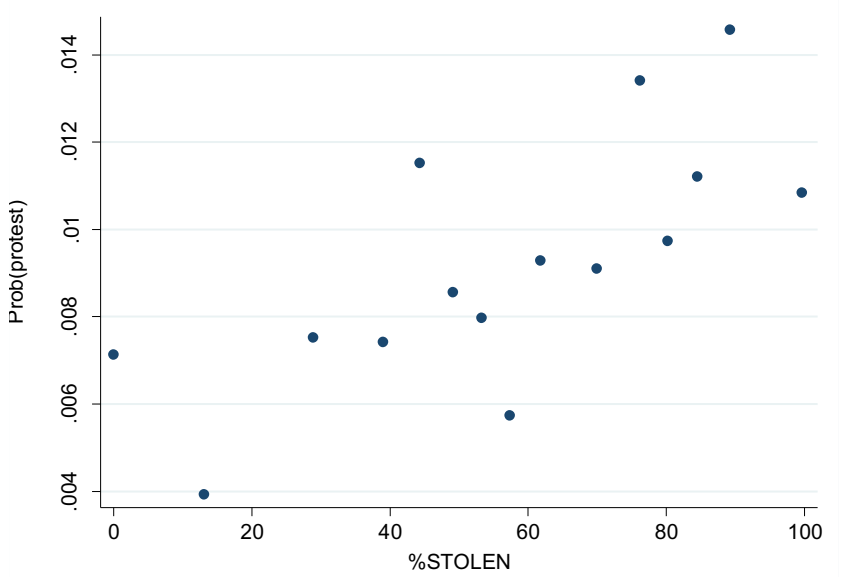
$$(3) \qquad Protest_{ij} = \alpha + \beta \cdot STOLEN_i + \gamma \cdot X_{ij} + \lambda_j + \varepsilon_{ij},$$

where *Protest* is a dummy equal to 1 if citizen i appeared at protest j; $STOLEN$ is a measure of electoral fraud in the home precinct of citizen i; X are other variables; and λ_j is a protest fixed effect.[8] One control variable is a dummy for iPhones as opposed to Android devices, which we interpret as a rough proxy of a

[7] In this figure, precincts in which official returns were not posted are counted as 100 percent stolen.

[8] Our main findings are robust to using a logit or probit specification instead of a linear probability model.

Figure 1. Binned Scatterplot of Precinct Stolen Votes Against Likelihood of Protesting



citizen's wealth. A second control variable is the distance from person i's residence to the site of protest j (mean 6.3 km). As the distance to a protest increases, all else equal, the cost of protesting rises, which should reduce the propensity to participate. We also include fixed effects for the nine Administrative Districts in the city; these provide rough controls for spatial differences in socioeconomic conditions.

Table 1 reports our main findings. To avoid multiple leading zeros, we report coefficients and standard errors scaled by 1,000. The first column shows the baseline regression, in which the key explanatory variable is the fraction of votes stolen, $STOLEN^*$, defined in equations (1) and (2). The coefficient on stolen votes is positive and statistically significant. To help interpret the magnitude of the coefficient, here and throughout we report the ratio of the protest probability of a person in a precinct with a 57 percent fraud rate (the median) compared to the unconditional protest probability of a person in a district with no fraud. The unconditional protest probability for a person in a zero-fraud precinct was 0.1 percent; residing in a precinct with median fraud increased the protest probability by $.00144 \times 57 = 0.082$ percentage points. We therefore say that a person in a median fraud precinct was 1.82 times as likely to protest as a person in a zero-fraud precinct.

The first regression in Table 1 excludes precincts in which no official votes were recorded. However, these precincts were the source of considerable citizen ire on election night.[9] The second

[9] See, for example "Фальсификации на выборах в Беларуси: члены избиркомов Минска подтвердили грубые нарушения" ДС, August 18, 2020; available at https://www.dsnews.ua/world/falsifikacii-na-vyborah-v-belarusi-chleny-izbirkomov-minska-podtverdili-grubye-narusheniya-18082020-395925; retrieved on July 5, 2024; "«Хотите бояться?». СМИ обнародовали видео из Минска, на котором комиссия решала, какой протокол вывесить по итогам выборов," NV, August 18, 2020; available at https://nv.ua/world/countries/vybory-v-belarusi-video-kak-

Table 1. Regressions of Protesting on Vote Stealing

	(1)	(2)	(3)	(4)	(5)
$STOLEN^*$	1.44***	1.18***	5.21***	3.95***	17.27***
	(0.42)	(0.26)	(1.53)	(0.92)	(5.33)
Dummy = 1 if iPhone	-1.57***	-1.71***	-9.39***	-8.46***	-45.62***
	(0.48)	(0.40)	(2.08)	(1.61)	(8.11)
Distance to protest	-0.18***	-0.20***	…	-0.75***	…
	(0.05)	(0.04)		(0.13)	
District Fixed Effects	Yes	Yes	Yes	Yes	Yes
Protest Fixed Effects	Yes	Yes	No	Yes	No
Precincts	Posted votes	All	All	All	All
R^2	.001	.002	.003	.006	.014
N	175,631	318,206	45,837	93,348	13,448
Units	Person × Protest	Person × Protest	Person	Person500 × Protest	Person500

Note. Each column is a regression in which the dependent variable is a dummy if a person participated in a protest (1)(2)(4) or a dummy if a person attended at least one of the seven protests (3)(5). The unit of observation is a person x protest (1)(2)(4) and person (3)(5). Coefficients and standard errors (in parentheses, clustered at precinct level) are scaled by 1,000 for readability. Person500 means the contain at least 500 instances of geolocations for the person. Standard errors: * = 10 percent, ** = 5 percent, *** = 1 percent.

regression includes these precincts and assigns them $STOLEN^* = 1$. The coefficient on election fraud remains negative and statistically significant, but falls in magnitude. The coefficient of 1.18 implies that a citizen in a precinct with median fraud was about 1.7 times as likely to protest as a citizen in a precinct with no fraud.

Regression (3) collapses each person into a single observation, and the dependent variable becomes a dummy equal to one if the person attended at least one of the seven protests. In fact, protestors seem to specialize – the mean number of protests attended by a protestor was 1.2 – perhaps focusing on specific regions of the city. The coefficient on vote stealing continues to be positive and statistically significant. The unconditional probability of a person in a zero-fraud precinct attending at least one protest was 0.7 percent, so the coefficient of 5.21 implies that a person in a median-fraud precinct was 5.4 times as likely to attend at least one protest as person in a zero-fraud precinct.

We identify people as protestors if their phone sent geolocation data from the protest site. We can more accurately track the movement of people who used their phones often rather than infrequently, and are more confident in the classification of users with more tracking information. Regressions (4) and (5) report estimates on a sample restricted to persons for whom we have at least 500 distinct instances of confirmed locations during our sample period. The coefficients on $STOLEN^*$ remain positive and statistically significant, and the magnitudes are more than three times larger. The coefficient of 3.95 in

reshali-kakoy-protokol-vyvesit-novosti-belarusi-50106951.html; retrieved on July 5, 2024; "«Как вы просили, так и мы вам ответили». Репортаж с избирательного участка в Минске," BelSat, August 9, 2020; available at https://d5b539c6770e46a30bce2cff66194ba8.aws-123.link/ru/news/kak-vy-prosili-tak-i-my-vam-otvetili-reportazh-s-izbiratelnogo-uchastka-v-minske; retrieved on July 5, 2024.

Table 2. Protest Regressions with Two Types of Electoral Fraud

	(1)	(2)	(3)	(4)
Dummy = 1 if $\#STOLEN > 0$	0.61**	…	2.47	…
	(0.26)		(1.59)	
$STOLEN^*$ (precincts with reported votes)	…	1.54***	…	6.91***
		(0.39)		(2.20)
Dummy = 1 if precinct without reported votes	0.92***	1.18***	3.84***	5.22***
	(0.28)	(0.26)	(1.65)	(1.53)
Dummy = 1 if iPhone	-1.73***	-1.71***	-9.43***	-9.38***
	(0.40)	(0.40)	(2.07)	(2.08)
Distance	-0.20***	-0.20***	…	…
	(0.04)	(0.04)		
District Fixed Effects	Yes	Yes	Yes	Yes
Protest Fixed Effects	Yes	Yes	No	No
R^2	.002	.002	.003	.003
N	318,206	318,206	45,837	45,837
Units	Person×Protest	Person×Protest	Person	Person

Note. Each column is a regression; the dependent variable is a dummy if a person participated in a protest (1)(2) or a dummy if a person attended at least one of the seven protests (3)(4). Coefficients and standard errors (in parentheses, clustered at precinct level) are scaled by 1,000 for readability. $\#STOLEN$ is calculated only for districts with officially reported votes. Standard errors: * = 10 percent, ** = 5 percent, *** = 1 percent.

regression (4) implies that a person in a median-fraud precinct was about 1.6 times more likely to join a given protest than a person in precinct with no fraud (unconditional probability 0.4 percent); and the coefficient of 17.27 in regression (5) implies that a person in a median-fraud precinct was about 1.3 times more likely to join at least one protest than a person in a zero-fraud precinct (unconditional protest probability 2.3 percent). In short, if we focus on persons with more reliable data, the core findings remain strong.

In all regressions, the coefficient on the iPhone dummy is negative and statistically significant, meaning that iPhone owners were less likely to protest, all else equal. If iPhone ownership is a proxy for wealth, it suggests that protesters were more likely to be middle and lower income citizens. The coefficient on the distance to the protest site is negative and statistically significant, indicating that protest decisions were responsive to travel costs in the expected way.[10]

In Table 2, we look at the distinction between fraud that occurred because Golos votes differed from the reported votes (type 1), and fraud that occurred because no official votes were posted at all (type 2). Regression (1) includes separate dummy variables for each type of fraud. The coefficients on both dummy variables are positive and statistically significant. Interestingly, the coefficient is larger for nonreported votes than explicitly stolen votes, although they cannot be statistically distinguished from each

[10] The relation is actually significantly concave, but inclusion of second order terms does not change any coefficients of interest, so we exclude them to reduce clutter.

other ($p = .154$). Regression (2) replaces the dummy variable on $\#STOLEN$ with the fraction of votes stolen; the dummy for precincts without reported votes can be interpreted as the fraction of stolen votes in those precincts under the assumption that 100 percent of the votes were stolen. Again, both coefficients are positive and statistically significant. The magnitudes are reversed but again the coefficients are not statistically different from each other.

Regressions (3) and (4) repeat the exercises after collapsing the data down to individual observations, so that the dependent variable becomes a dummy equal to one if a person attended at least one of the protests. The story is essentially the same. The coefficients on election fraud are always positive, and using the fractional variables, statistically significant. Taken together, the evidence implies that citizens were motivated to protest by both types of fraud, and the effects were of the same order of magnitude. Based on this, in the estimates that follow we tend to pool observations with both types of fraud.

B. Potential Confounds

As mentioned above, because we do not have experimental variation in the amount of vote stealing, we build support for a causal interpretation by examining the most plausible sources of spurious correlation directly and assessing to what extent they can be ruled out. The first confound we consider is economic and social conditions that vary by precinct. The concern is that protesting may be driven by economic factors, such as income and blue-versus-white collar jobs, or by social factors, such as ethnic group or religion, that are correlated with precincts.

To investigate this, we constructed a new data that includes each precinct without fraud and a matched adjoining precinct with fraud.[11] Minsk is densely populated, and its electoral precincts are geographically compact: sizes vary, but picture a median precinct as roughly 290 meters by 290 meters, containing several densely populated multistory buildings. Because each precinct has a small geographic footprint, adjoining precincts are similar in economic and social conditions. We re-estimate the basic models using the matched data and including matched-group fixed effects. By doing so, we fit the coefficients based on comparisons with adjoining precincts only, which should remove socioeconomic variation across precincts.

Table 3 reports the regressions. Because our previous results showed that citizens responded to both types of fraud, we include both precincts with documentable vote stealing and precincts in which the official returns were not reported. In regression (1), the unit of observation is a person-protest; in regression

[11] Specifically, for each precinct without detectable fraud, we identified all adjoining precincts in which there was evidence of fraud. For no-fraud precincts with more than one adjoining fraud precinct, we randomly selected one of those precincts, without replacement. An alternative procedure that selects adjoining precincts with replacement (thus duplicating some observations) produces similar results.

Table 3. Protest Regressions Using Matched Adjacent Precincts

	(1)	(2)
$STOLEN^*$	1.09***	5.77**
	(0.35)	(2.28)
Dummy = 1 if iPhone	-2.08**	-11.49**
	(0.90)	(4.96)
Distance	-0.73***	…
	(0.24)	
Adjacent Group Fixed Effects	Yes	Yes
Protest Fixed Effects	Yes	No
R^2	.003	.011
N	54,588	7,835
Units	Person×Protest	Person

Note. Each column is a regression; the dependent variable is a dummy if a person participated in a protest (1) or a dummy if a person attended at least one of the seven protests (2). The data include all fraud-free precincts and matched precincts in which there was fraud of either type. Coefficients and standard errors (in parentheses, clustered at precinct level) are scaled by 1,000 for readability. Standard errors: * = 10 percent, ** = 5 percent, *** = 1 percent.

(2) we collapse observations at the individual level so that the dependent variable is dummy for attending at least one protest. The coefficient on $STOLEN^*$ is positive and statistically significant in both cases, despite the reduction in observations. The magnitudes of the coefficients are similar to those reported before, modestly smaller in (1) and modestly larger in (2). We conclude that our estimates of the coefficients on electoral fraud are unlikely to be driven by variation in socioeconomic conditions across precincts.

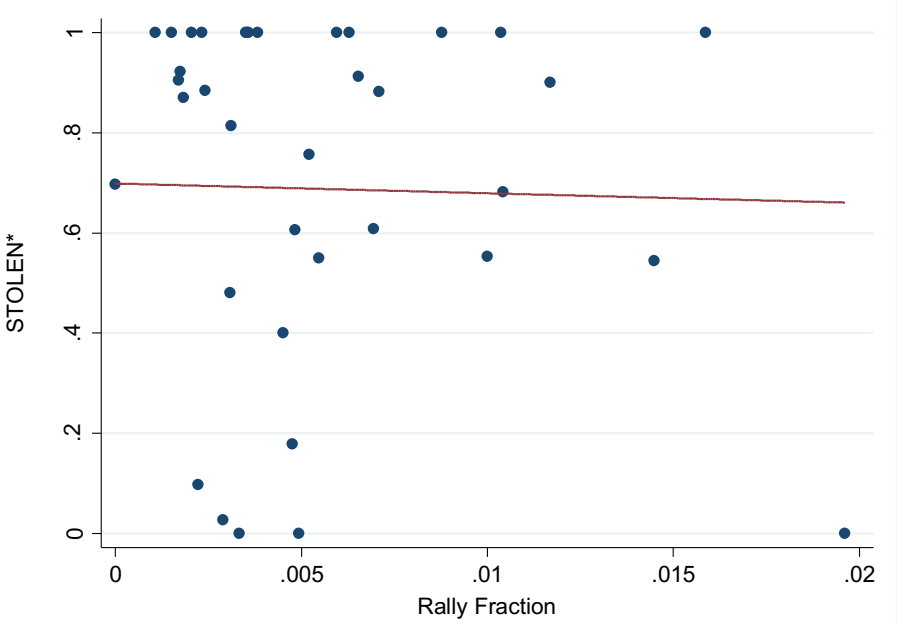
Another concern is that electoral fraud may have been more common in precincts where the incumbent President was unpopular to begin with, and thus had an underlying higher propensity to protest. Electoral authorities may have stolen more votes in precincts with more opposition supporters because that is where the votes were available to steal.

We explore this possibility in two ways. First, we examine the link between electoral fraud and participation in a *pre-election* opposition rallies. Rallies of this sort were a completely new political phenomenon for Belarus in 2020. For each precinct, we calculate the fraction of people that attended a pre-election rally, and compare it with the fraction of stolen votes. If vote stealing was targeted at precincts containing large numbers of known activists, we expect to see a positive relation. Figure 2 shows the binned scatterplot.[12] We have included precincts in which no official returns were posted as 100 percent stolen. Electoral fraud does not appear to have been related to participation in pre-election rallies. Similar null results occur if we regress a dummy for participating in a pre-election rally on a precinct's post-election fraud, something akin to a placebo test.

Second, we estimate the main regressions with a control variable representing the underlying level of opposition support. It is almost mechanical (at least in the extremes) that a precinct with more opposition votes was more vulnerable to vote stealing and more likely to supply protestors. Table 4 reports versions

[12] One precinct with an outlying value of Rally Fraction is omitted so as not to distort the figure.

Figure 2. Precinct-Level Plot of Pre-election Rally Participation Versus Stolen Votes



of the baseline regressions with controls for the underlying level of opposition support in a precinct. Our preferred measure of opposition support is the number of votes recorded for the opposition in Golos, as in columns (1) and (2). To the extent the precincts have similar numbers of voters, this variable provides a valid comparison across precincts. Regression (1) uses the individual-protest as the unit of observation while regression (2) collapses the data into one observation per person. In both cases, the number of opposition votes is a strong and reliable predictor of the probability of protesting. Nevertheless, after controlling for opposition votes, the coefficient on precinct-level vote stealing remains positive and statistically different from zero. Both coefficients fall in magnitude—substantially in (1) and modestly in (2)—once opposition votes are included, suggesting that part of the unconditional relation between fraud and protests may be mechanical.

Another way to control for opposition support is to normalize opposition votes in Golos with the total number of officially reported votes. We do not favor this measure because the number of officially reported votes was subject to significant manipulation by the government (in fact, in 3 precincts, the total number of reported votes was less than the Golos votes alone) and officially reported votes are unavailable for 45 percent of precincts, resulting in a loss of statistical precision. Nevertheless, for the reader who prefers this measure, we report the analogous regressions in columns (3) and (4).[13] One can see that this measure of opposition support is positively related to protesting, but estimated with significantly more noise. With this variable included, the coefficient on $STOLEN^*$ remains positive; it is statistically

[13] In this estimation, we exclude the three precincts in which Golos's totals exceed the total number of ballots reported in official election results.

Table 4. Protest Regressions Controlling for Opposition Votes

	(1)	(2)	(3)	(4)
$STOLEN^*$	1.02***	4.39***	0.89**	4.05
	(0.26)	(1.50)	(0.44)	(2.65)
Dummy = 1 if iPhone	-1.66***	-9.14***	-1.71***	-10.30***
	(0.40)	(2.08)	(0.49)	(2.76)
Distance to protest	-0.22***	…	-0.18***	…
	(0.04)		(0.05)	
$\#VOTES^{Golos}$ (hundreds)	0.12***	0.52***	…	…
	(0.02)	(0.13)		
$\#VOTES^{Golos}$ / #Total official votes	…	…	1.88*	6.27
			(1.11)	(6.06)
District Fixed Effects	Yes	Yes	Yes	Yes
Protest Fixed Effects	Yes	No	Yes	No
Precincts	All	All	Posted Votes	Posted Votes
R^2	.002	.004	.001	.003
N	318,206	45,837	171,137	24,575
Units	Person×Protest	Person	Person×Protest	Person

Note. Each column is a regression; the dependent variable is a dummy if a person participated in a protest (1)(3) or a dummy if a person attended at least one of the seven protests (2)(4). In (3) and (4), observations are dropped if the opposition vote variable exceeds 1. Coefficients and standard errors (in parentheses, clustered at precinct level) are scaled by 1,000 for readability. Standard errors: * = 10 percent, ** = 5 percent, *** = 1 percent.

significant in (3) but statistically insignificant in (4). The magnitude is smaller in (3) than (1), but similar in (2) and (4).

C. Alternative Measurement of Variables and Robustness

One contribution of our study is development of methods to measure objects that normally cannot be measured: participation in anti-government protests and precinct-level vote stealing. Here we consider alternative measurements and explore robustness to measurement assumptions.

First, it is possible that the people we detected at protest sites and therefore classify as protestors were in the area for reasons other than protesting, for example, because they worked or attended school there, or had a personal reason, such as visiting relatives or attending a religious gathering. If this were the case, we would be measuring protestors incorrectly. To assess this concern, we created a variable for each protest indicating if a person was at the protest location two days *after* the protest (when there was not a protest at that location). We then estimate our baseline protest regressions using attendance at the "nonprotests" as the dependent variable. If our original findings are not capturing protestors, but rather people who had other reasons to be in the area, then we expect to see that fraud predicts attendance at the nonprotests.

Table 5 shows the regressions using person-protest as the unit observation (1) and collapsing observations at the individual level (2). In both cases, the coefficients on $STOLEN^*$ are statistically insignificant, and much smaller for nonprotests than protests. Distance continues to predict, as would be

expected, as does the iPhone dummy, less obviously. We conclude that our measure of protesting is not primarily capturing non-protest reasons for being at the protest location on the day of the protest.

Table 5. Regressions with Alternative Variable Measurements

	Dependent = visited site on nonprotest day		Only photo-verified votes		Narrower bounds around protest locations	
	(1)	(2)	(3)	(4)	(5)	(6)
$STOLEN^*$	0.20	0.52	0.99***	4.29***	0.79***	3.90***
	(0.32)	(1.77)	(0.24)	(1.38)	(0.20)	(1.25)
Dummy = 1 if iPhone	-2.95***	-15.37***	-1.71***	-9.39***	-1.15***	-6.02***
	(0.50)	(2.55)	(0.40)	(2.08)	(0.33)	(1.74)
Distance to protest	-0.28***	…	-0.20***	…	-0.14***	…
	(0.05)		(0.04)		(0.04)	
District Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes
Protest Fixed Effects	Yes	No	Yes	No	Yes	No
R^2	.003	.004	.001	.003	.001	.003
N	318,206	45,837	318,206	45,837	320,019	45,837
Units	Person × Protest	Person	Person × Protest	Person	Person × Protest	Person

Note. Each column is a regression in which the dependent variable is a dummy if a person visited a protest site (1)(3)(5) or a dummy if a person visited at least one of the seven protest sites (2)(4)(6). Coefficients and standard errors (in parentheses, clustered at precinct level) are scaled by 1,000 for readability. Standard errors: * = 10 percent, ** = 5 percent, *** = 1 percent.

Second, as mentioned earlier, citizens who submitted their votes to the Golos platform had the option to also submit a photo image of their ballot. The voting information is more reliable from those who submitted photos than those who did not. In the next exercises, we exclude Golos votes that were not verified with photos when calculating electoral fraud. In columns (3) and (4) of Table 5, we report the baseline regressions using the adjusted measures of vote stealing. The coefficients on $STOLEN^*$ are positive, statistically significant, and similar in magnitude to those in the baseline case. This suggests that the Golos votes submitted without photos were reliable for the most part.

Finally, in columns (5) and (6), we use narrower bounds to identify protest attendance: a radius of 500 meters around the central gathering point and a 50-meter distance of either side of the street along which the march took place. Our results remain robust, although somewhat smaller in magnitude than in the baseline.

VI. Concluding Remarks

Economic theories of protests typically assume that protestors receive non-pecuniary emotional benefits from protesting, but there is little empirical evidence on the nature or even existence of such benefits. Our paper provides evidence strongly suggesting the existence of emotional benefits in pro-democracy protests, and linking these benefits to a person having his or her personal vote stolen. We produce these estimates in the context of the mass protests following the 2020 Belarusian presidential

election, for which technological innovations make it possible to capture two elusive empirical objects: the amount of vote stealing at the precinct level, and the voting precinct of protestors. As usual with studies of this nature, we do not know the external validity of these estimates; it will take a cumulation of evidence over multiple countries and periods to determine how general these findings are. While there are some unique features of the episode we investigate, our study takes a first step, and we hope that its methods may be useful for researchers examining other contexts.

In addition to documenting the existence of emotional benefits, our evidence lends support to recent theoretical research on the nature of such benefits (Battigalli and Dufwenberg 2022). One idea from this literature is that anger stems not only from outcomes, but from outcomes that fall short of a person's expectations, and that harms to a person or the person's local community trigger more anger than generalized harms (Passarelli and Tabellini 2017). Consistent with this idea, we find that whatever anger a person may have felt about the fraudulent 2020 election, the emotional benefit from protesting was much higher if the person's own vote was stolen.

While our evidence is drawn from the experience of an authoritarian regime, it may hold lessons for functioning democracies. Effective governance requires that citizens submit themselves willingly to the authority of the election winner, even those that voted for the election loser. Our findings suggest that citizens' willingness to accept authority of the winner derives partly from their belief in the fairness of election and especially in the treatment of their own vote. For democratic stability, then, it may not be just the identity and policies of the election winner that matter, but also the process by which the outcome is achieved that ensures the consent of the governed.

Appendix. Announcement of Buildings in Minsk Partizansky Administrative District Precinct 1

(Original Russian)

Описание границ участков для голосования Партизанского района г. Минска по выборам Президента Республики Беларусь

УЧАСТОК ДЛЯ ГОЛОСОВАНИЯ № 1

(ул. Ф.Скорины, 8/2, учреждение образования "Белорусская государственная академия связи")
Улицы: Буйницкого; Ваньковича - дома №53,55; Горная; Глебова; Дачная; Дамейки; Жасминовая; Подлесная; Родниковая; Рущица; Ф.Скорины – дома №№ 8, 8/1, 8/2, 14а, 16а, 20; Тарашкевича (четная сторона); Шемеша; Яблоневая.
Переулки: Буйницкого, Дачный, П.Труса – дом №2.

(English Translation)

Description of electoral precinct boundaries set up in Minsk's Partizansky Administrative District during the presidential elections in the Republic of Belarus

ELECTORAL PRECINCT 1

(the precinct is located at 8/2 F. Skoriny Street, in the building that belongs to the Belarus State Academy of Communications)
The following streets have been assigned to this precinct: Buinitskogo; Van'kovicha – building numbers 53, 55; Gornaia; Glebova; Dachnaia; Dameiki; Jasminovaia; Podlesnaia; Rodnikovaia; Ruschitsa; F.Skoriny – building numbers 8, 8/1, 8/2, 14a, 16a, 20; Tarashkevicha (even-numbered buildings); Shemesha; Yablonevaia.
The following lanes have been assigned to this precinct: Buinitskogo, Dachnyi, P.Trusa – building number 2.

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