Original Article

Overestimation of the Level of Democracy Among Citizens in Nondemocracies

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Abstract
Overestimation of the level of democracy is prevalent among citizens in nondemocracies. Despite such prevalence, no research to date has systematically documented this phenomenon and examined its determinants. Yet given the renewed interest in the role of legitimacy in authoritarian survival, studying whether and why this phenomenon arises is important to our understanding of authoritarian resilience. I argue that, even in the absence of democratic institutions in nondemocracies, autocrats exercise media control in order to boost their democratic legitimacy. This façade of democracy, in turn, benefits their survival. Combining media freedom data with individual survey response data that include over 30,000 observations from 22 nondemocracies, I find that overestimation of the level of democracy is greater in countries with stronger media control. But highly educated citizens overestimate less. These findings shed light on media control as a strategy for authoritarian survival, and have important implications for modernization theory.

Keywords
non-democratic regimes, comparative public opinion, media control, democratic legitimacy, authoritarian resilience

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"Authoritarian equilibrium rests mainly on lies, fear, or economic prosperity."

— Adam Przeworski (1991, p. 58)

Introduction

In recent years, many citizens in democracies have expressed substantial dissatisfaction with the functioning of democracy in their country, as signaled by the rising trend of antiestablishment political movements in established democracies.[1] This contrasts with the curious observation that many citizens in nondemocracies[2] have displayed considerable satisfaction with the authoritarian governance in their country, as indicated by their widespread acknowledgment of autocratic leaders (Frye et al., 2017, Guriev & Treisman, 2020b).

This suggests a possible misalignment between the perceived level of democracy and the measured level of democracy. That is, people may *underestimate* the level of democracy in democracies, but *overestimate* it in nondemocracies.[3] Data from the World Values Survey (WVS) reveal this interesting pattern (Figure 1). While underestimation of the level of democracy is prevalent in established democracies such as the U.S. and Japan, overestimation is evident in nondemocracies such as China and Singapore.[4] Similar phenomena can also be observed in other countries. However, this is unlikely due to how individuals in democracies and nondemocracies *define* democracy differently, since their conceptions of democracy are, in fact, fairly similar (Figures S1–S3). This leads to an unsolved puzzle: Why do citizens in nondemocracies overestimate the level of democracy in their country?

While underestimation of the level of democracy in democracies is closely linked to the abundant literature on democratic deficit,[5] surprisingly no research to date has focused on the overestimation side. Yet, studying overestimation is also important: If we study democratic deficit due to its implications for democratic survival, then we should also study why citizens overestimate regime democraticness given its potential implications for authoritarian resilience.

In nondemocracies, citizens' overestimation of the level of democracy contributes to authoritarian resilience through regime legitimation. This is premised on congruence theory in the democratization literature: Autocracies gain legitimacy when their citizens perceive them to be democratic; such legitimacy, in turn, empowers autocrats to *not* "supply" democracy as citizens believe that their "demand" for democracy is already satisfied (Inglehart & Welzel, 2005; Qi & Shin, 2011; Rose et al., 1998). Consequently, autocrats are incentivized to create a façade of democracy to stabilize their regime (Gerschewski, 2013; 2018; Tannenberg et al., 2021). But how is a nondemocracy able to make this façade of democracy so credible that its
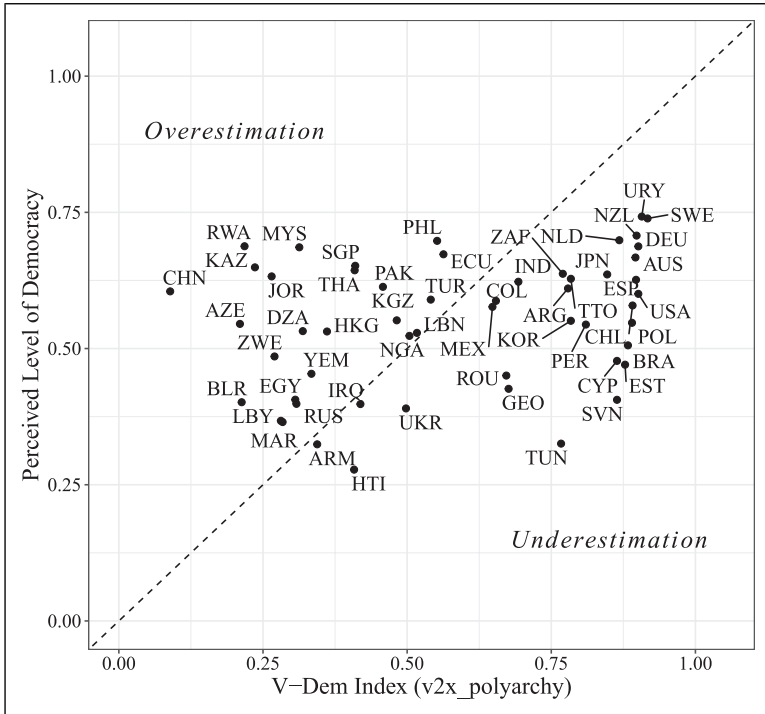
Figure 1. Perceived and Measured Levels of Democracy—All Sampled Countries in the World Values Survey (Wave 6: 2010–16).

Note: Variables are rescaled to range from 0 to 1. Data on perceived levels of democracy are obtained from the WVS (Wave 6: 2010–16). They are country-average data after dropping nonrespondents, based on the variable *V141* in the WVS. Data on measured levels of democracy are obtained from V-Dem's Electoral Democracy Index (corresponding years). Details on these variables, as well as a discussion of their comparability, are provided in Section 4.

citizens are willing to believe that their country is already democratic when it is not?

I argue that media control is an important strategy.[6] By controlling the media, autocrats can selectively disseminate information that could mislead citizens into believing that the regime is already democratic. This could include, for example, the occasional instances where popular policy demands are aptly responded to by the government (Truex, 2017), as well as the "rule of law" development within the state (Stockmann & Gallagher, 2011; Whiting, 2017). Crucially, media censorship can cover up common autocratic practices of the government, including violent repression and electoral fraud. Unable to obtain information about such regime-revealing practices, ordinary citizens in nondemocracies may in turn overestimate the democraticness of their country.

Thus, media control provides a powerful tool for autocrats to create a democratic façade.

But not all citizens are gullible: Those who are highly educated are not easily manipulated. They tend to be more resistant to political messages disseminated by the media (Geddes & Zaller, 1989; Kennedy, 2009; Moehler & Singh, 2011; Zaller, 1992) and more resilient to media censorship than the general populace (Roberts, 2018, 2020). Therefore, I additionally argue that highly educated citizens overestimate the democraticness of their country to a lesser degree.

Combining media freedom data with individual survey response data that include over 30,000 observations from 22 nondemocracies, I find suggestive evidence for my arguments. The cross-national analysis reveals that overestimation of the level of democracy is greater in autocracies with stronger media control. Highly educated citizens, however, overestimate less than their less educated peers do. Although causal relationships are harder to prove, the results withstand a battery of theoretically and empirically motivated robustness checks.

To my knowledge, this paper is the first to systematically document the prevalence of overestimation of the level of democracy and examine its determinants. In doing so, I make three distinct contributions. First, I enrich the emerging literature on informational autocracies (Guriev & Treisman, 2019). Nowadays, autocrats rely much less on violent repression and official ideologies than their predecessors did; instead, they demonstrate strong eagerness to manipulate information by controlling the media (Gunitsky, 2015; Guriev & Treisman, 2019). This empirical observation calls for scholarly attention: Why is information manipulation so attractive to autocrats? How does it benefit their survival? This study offers a new perspective by suggesting that media control can increase citizens' tendency to overrate the democraticness of their country. This helps autocrats build democratic legitimacy that relieves their pressure to democratize.

Second, I contribute to the revitalized literature that brings back legitimacy to discussions of authoritarian resilience. Scholars have invested considerable but rewarding effort in the study of strategic cooptation and repression in autocracies, yet less is known about how legitimation may contribute to authoritarian survival. The question of legitimacy, therefore, becomes "a known unknown for autocracies" (Gerschewski, 2018, p. 661). Here, I relate two strands of literature—legitimacy and authoritarian resilience—by suggesting that part of the reason autocracies survive is that their citizens are misled into believing that they are *already* living in a democracy; hence their low demand for democracy. Thus, democratic legitimacy is important not only for democratic survival (Lipset, 1959; Chu et al., 2008) but also for authoritarian survival.

Third, I expand the literature on media control. Scholars of authoritarian politics often argue that the media play an important role in autocracies. However, this body of work—predominantly and understandably—focuses on China (e.g., Chen & Yang, 2019; Huang & Yeh, 2019; King et al., 2013; 2017; Lorentzen, 2014; Roberts, 2018; Stockmann and Gallagher, 2011; Wang & Huang, 2021) and Russia (e.g., Enikolopov et al., 2011; Reuter & Szakonyi, 2015; Rozenas & Stukal, 2019).[7] This calls into question the relevance of their findings to other autocracies. I fill this gap by studying media control cross-nationally, with a dataset that includes not only China and Russia but also 20 other nondemocracies from all parts of the world. My extended analysis shows that the media finding still holds even after dropping China and Russia from the sample.

The remainder of this paper is structured as follows. Section 2 reviews the relevant literature and argues that autocrats are incentivized to use media control to create a façade of democracy. Section 3 introduces the theoretical framework and hypotheses. Section 4 defines the variables and describes their sources, followed by the results (Section 5) and robustness checks (Section 6). Section 7 concludes.

Perceived Democraticness, Legitimacy, and Authoritarian Survival

Misalignment between perceived and measured levels of democracy

Perceived levels of democracy often fall short of public expectations in democracies. Democratic deficits are found not only in the European Union (EU) (Majone, 1998) but also in other parts of the world (Norris, 2011). Many EU citizens perceive themselves to be underrepresented under the EU governance and are therefore skeptical about the democratic representation of the EU (Rohrschneider, 2002). More generally, Dalton (2004) documents the erosion of political support in advanced industrial democracies, where public trust in politicians and governments were declining substantially. Norris (2011) further suggests that this phenomenon is not only visible in established democracies but also in younger democracies, especially in post-communist states such as Bulgaria and Serbia. Recent data from the 2020 Democracy Perception Index reveal that two-fifths of people living in democracies believe their country to be *un*democratic (Dalia, 2020).

If misalignment between the perceived and measured levels of democracy implies that people can underestimate the level of democracy in democracies, then it is also plausible that people can overestimate it in nondemocracies. Although the existing literature does not pay close attention to the overestimation side, this phenomenon is indeed prevalent in nondemocracies (Figure 1). For instance, the WVS data suggest that the average perceived

levels of democracy in China and Singapore were 6.44 (in 2013) and 6.87 (in 2012) on a ten-point scale, which were comparable to the average perceived levels of democracy in the U.S. (6.40 in 2011) and Japan (6.72 in 2010). This phenomenon is even more noticeable in Kazakhstan and Slovenia. In 2011, Kazakhstan was rated by V-Dem's Electoral Democracy Index with a score of 0.24 on a unit interval, while Slovenia was given a score as high as 0.86. Yet, the average perceived level of democracy in Kazakhstan (6.84) was about 2.2 points *higher* than that in Slovenia (4.65) on a ten-point scale. The mis-alignment between the perceived and measured levels of democracy is even more pronounced when we focus squarely on nondemocracies (see Figure 2, which shows a *negative* relationship within a sample of nondemocracies). In short, there are huge discrepancies between the perceived and measured levels
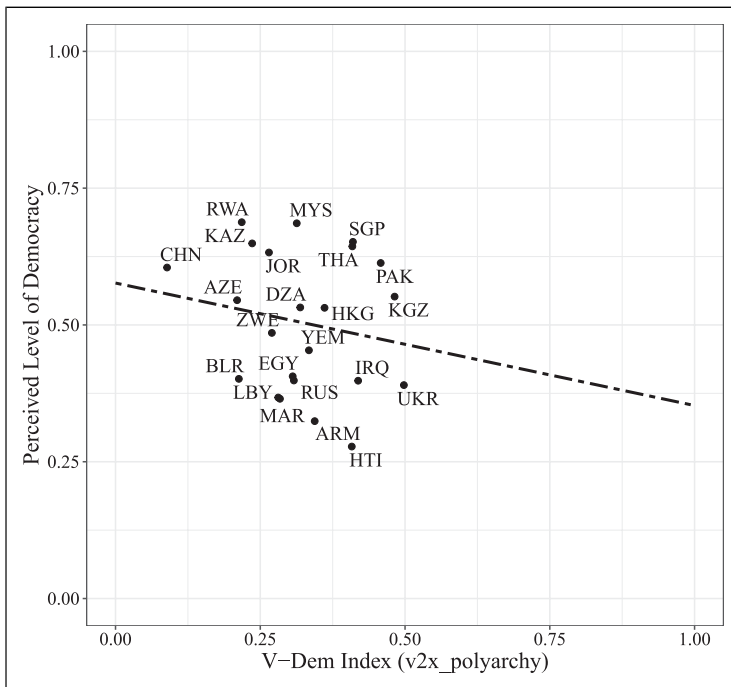

Figure 2. Perceived and Measured Levels of Democracy—Sampled Nondemocracies in the WVS.
Note: Variables are rescaled to range from 0 to 1. Data on perceived levels of democracy are obtained from the WVS (Wave 6: 2010–16). They are country-average data after dropping nonrespondents, based on the variable *V141* in the WVS. Data on measured levels of democracy are obtained from V-Dem's Electoral Democracy Index (corresponding years). Details on these variables, as well as a discussion of their comparability, are provided in Section 4. Nondemocracies are identified using V-Dem's Regimes of the World (v2x_regime).

of democracy across different types of regimes *and* different regimes of the same type.

Past research suggests that perceived levels of democracy can be affected by multiple factors. A cross-national survey conducted by the Pew Research Center suggests that they are positively correlated with perceived economic performance (Wike et al., 2017). While the national economic performance may be important in terms of influencing perceived democraticness in less affluent countries, political factors—in the form of governance effectiveness—appear to be more relevant in more affluent countries (Rohrschneider & Loveless, 2010). Perceived democraticness also depends on people's conceptions of democracy: Individuals have various interpretations of the meaning of democracy, and these varying interpretations, in turn, shape their perceptions of how democratically governed their country is (Miller et al., 1997). This may partially explain why they have contrasting views on the level of democracy in their own country even under the same governance. Mattes and Bratton (2007) also find that people appear to form such conceptions by learning about what democracy is and does. They argue that people learn about "the content of democracy through cognitive awareness of public affairs" and "the consequences of democracy through direct experience of the performance of governments and (to a lesser extent) the economy" (p. 192). This suggests the manipulability of people's perceptions on the democraticness of their country.

Legitimacy and authoritarian survival

But why do autocrats want to mislead their citizens into thinking that their regime is democratic when it is, in fact, undemocratic? The reason probably lies in the importance of legitimacy in their survival. On one hand, popular support for the regime is conducive to regime survival as it reduces mass threats; on the other, legitimation complements cooptation and repression by reducing the persuasion costs for coopting elites and by reducing potential opposition (Gerschewski, 2013). Indeed, recent work has shown that regime legitimation strategies are frequently adopted by autocrats, who emulate democratic procedures to generate legitimacy of their rule (Tannenberg et al., 2021; Von Soest & Grauvogel, 2017).

Autocrats also use the language of democracy to legitimate their rule. Analyzing the political speeches of world leaders, Maerz (2019) finds that leaders from nondemocracies are as likely as leaders from democracies to speak of democratic procedures in public discourses. For example, Islam Karimov, the former president of Uzbekistan, "constantly stresses in his speeches the regime's apparent aim of building a democratic state, intensifying the democratic transformation and 'consolidating democratic values in the minds of the people'" (p. 13). Similarly, his successor, Shavkat

Mirziyoyev, claimed that he strove to build "a free, democratic, humane state," and that his electoral victory was a result of "the elections [which] were conducted in the atmosphere of sound competition and struggle among political parties" (p. 14). Most recently, Sadyr Japarov, the newly elected president of Kyrgyzstan, described himself as a "democratic person" upon his electoral victory (The Economist, 2021). What these examples show is that autocrats often value and pursue democratic legitimacy.

Congruence theory further elucidates why legitimacy relieves democratization pressure. The theory is a simple demand–supply framework, which holds that democratization takes place when public demand for democracy in a state outstrips its institutional supply of democracy (Dalton & Shin, 2006; Inglehart & Welzel, 2005; Mattes & Bratton, 2007; Qi & Shin, 2011; Rose et al., 1998). If congruence between public demand and institutional supply is attained, then regime change is highly unlikely. Yet on the supply side, autocracies—by definition—lack democratic institutions. The differentiation then lies on the *demand* side: Only autocracies with sufficiently high public demand for democracy will face democratization pressure. When autocrats are able to mislead their citizens into thinking that their regime is *already* democratic, democratic legitimacy is achieved even in the absence of democratic institutions. Under such circumstances, even if citizens support democracy in principle,[8] their demand—understood as the discrepancy between support for democracy-in-*principle* and dissatisfaction with democracy-in-*practice* (Qi & Shin, 2011)—is still low because they have strong "practical support for democracy-in-practice" (p. 247). Congruence theory, therefore, illustrates why some autocrats are less pressured into democratization and how legitimacy can be conducive to authoritarian survival.

This theory is especially relevant in electoral autocracies. In these regimes, citizens' cost of driving democratization is relatively low: They can simply vote out the autocrats in favor of pro-democracy candidates in general elections. Nonetheless, congruence theory may be less applicable to autocracies without electoral institutions. In these regimes, citizens' demand for democracy is not easily translated into democratization efforts, since social movements are often costly to citizens and ineffective due to collective action problems. Thus, instead of suggesting that all types of autocrats are incentivized to mislead their citizens into thinking that their regime is democratic, I posit that such incentives are particularly pronounced among autocrats in electoral autocracies.

Media control as a strategy in autocracies

Autocrats may be incentivized to create a façade of democracy, but *how* do they mislead their citizens? One way to do so, I argue, is through media control. The argument is premised on the strand of research that uses media

control to explain the high level of public support or regime legitimacy in autocracies, particularly in China. Li (2004), for example, argues that the lack of free media in China enhances people's trust in the Chinese Communist Party (CCP). Kennedy (2009) also suggests that the Chinese government's strict control over the media plays a vital role in maintaining a high level of popular support in China. Studying how the Chinese government uses different means of media control to promote its "rule of law" reforms, Stockmann and Gallagher (2011) argue that the Chinese media strongly shape public opinion on the CCP's legitimacy, thereby contributing to its regime stability. In particular, they suggest that the private Chinese media, which "fully conforms to state censorship demands" (p. 459), played an important role in making citizens believe that the "rule of law" reforms were well implemented in China (see also Whiting, 2017). Overall, these studies show that China effectively uses media control to consolidate regime support, even in the absence of democratic institutions *and* the presence of citizens' support for democracy-in-principle.[9]

In their recent contribution, Guriev and Treisman (2019) introduced a new concept: *informational autocracy*. They argue that, instead of relying on ideologies and repression to survive, these regimes survive by manipulating information. Informational autocrats lead citizens to believe that their regimes are legitimate, and have a high tendency to conceal rather than publicize cases of state brutality. They have become increasingly common in recent years (Guriev & Treisman, 2019). In another important contribution, Guriev and Treisman (2020b) find that autocracies with greater media censorship enjoy stronger popular support than those with less censorship. Formalizing with a game-theoretic model, they further show that information manipulation prevails over overt repression when the informed elite is sufficiently large, thereby underscoring autocrats' incentives to censor and coopt media for their survival (Guriev & Treisman, 2020a).[10] Given the suggested importance of media control for authoritarian survival (see also Gunitsky, 2015), perhaps it is unsurprising that media freedom is higher in democracies than in autocracies (Stier, 2015).

Theoretical Framework and Hypotheses

I propose two hypotheses to explain why citizens in nondemocracies overestimate the level of democracy in their country. They concern *media control* and *education*.

As argued in the preceding section, media control helps autocrats mislead their citizens into believing that their country is democratic. On one hand, suppression of media freedom makes the public poorly informed of the undemocratic practices engaged in by the autocrat (Xu et al., forthcoming). With such public ignorance resulting from a lack of information, citizens may

then overrate the democraticness of their country. On the other hand, if the media were free, citizens would likely learn from the independent media about, for example, the procedural irregularities of their country's elections, thereby realizing that their country is not truly democratic with free and fair elections (Kerr & Lührmann, 2017). This was the case for the democratization experiences of Georgia, Serbia, and Ukraine, where the independent media played a key role in shaping public opinion and strengthening the opposition force by disseminating information that revealed the undemocratic practices of the regime (McFaul, 2005, pp. 11–13).

The revelation of—and citizens' realization of—electoral manipulation can have profound implications for authoritarian survival. For instance, Lesta (2019) finds from electoral autocracies in Africa that citizens living in opposition strongholds are much less likely to perceive their country to be democratic and legitimate. She attributes this finding to the dissemination of "information about the authoritarian nature of the government" by opposition parties (p. 1).[11] In addition, Reuter and Szakonyi (2021) find experimental evidence from Russia that many citizens, who genuinely believe that elections in Russia are free and fair, would withdraw their support for the ruling party if they were informed that its candidates committed electoral fraud. These studies show a clear incentive for autocrats to exercise media control: By restricting citizens' access to regime-revealing information, they fortify the democratic façade and thus consolidate their regime.

Zaller's (1992) exposure–acceptance model furthers our understanding of how media control helps autocrats create a democratic façade. Stockmann and Gallagher (2011) succinctly state the model: "a person's likelihood to be persuaded by a piece of information depends on two factors: first, his or her likelihood to be exposed and comprehend the message (reception) and, second, his or her likelihood to accept the message (acceptance)" (p. 451). In nondemocracies where the government exerts tighter control over the media for political messaging, citizens are more exposed to (dis)information that is intended to make them believe that their country is already democratic or prevent them from believing that their country is undemocratic. For instance, the Chinese government fabricates hundreds of millions of social media posts a year to distract public attention from skeptics of the CCP (King et al., 2017).[12] Such media control enables the autocrat to choose what kind of information to be—and not to be—exposed to citizens. This effectively manipulates the *reception* side and, consequently, prohibits citizens from having sufficient information to detect the undemocratic nature of the regime. Thus, citizens living in nondemocracies with highly state-controlled media should overestimate the level of democracy in their country more than those living in nondemocracies with freer media:

H1 (media control): A higher level of media control in nondemocracies *increases* the extent to which citizens overestimate the level of democracy in their country.

Yet, the exposure–acceptance model suggests that *acceptance* of the message also matters. It is unreasonable to assume that all citizens in nondemocracies are susceptible to political messaging. Naturally, we would expect that highly educated citizens are less gullible, since they tend to be more well-informed about the current political conditions in their country (Grönlund & Milner, 2006). They also tend to have a higher demand for political information and a greater capacity to overcome media censorship (Chen & Yang, 2019; Roberts, 2018, 2020). Indeed, past research has suggested that education "increase[s] the quality of civic knowledge" (Dee, 2004, p. 1697) and that "higher education imparts the knowledge, skills, and political familiarity that help in navigating the political world" (Hillygus, 2005, p. 27). Such knowledge and skills also allow the highly educated to "follow international events more closely and place their own situation within the context of world events" (Sanborn & Thyne, 2014, p. 781). Consequently, they tend to be more critical of state-controlled media (Moehler & Singh, 2011), especially in the shadow of globalization that facilitates international flow of information (Sanborn & Thyne, 2014).

Relatedly, scholars have applied the exposure–acceptance model to explain why highly educated citizens tend to be least supportive of their government in nondemocracies. The key is their resistance to political messages: They are highly exposed to political messages disseminated by the state-controlled media as they are politically aware, yet they do not easily accept such messages—unlike their less educated counterparts. Such dynamics between media control and higher education have been found not only in contemporary China (Kennedy, 2009) but also in authoritarian Brazil (Geddes & Zaller, 1989). These findings further suggest that highly educated citizens are more able to reject state propaganda.

Indeed, many democratic movements have been organized by college-educated students. One example is the 1989 Tiananmen Square protests in China, where the severe political corruption and public aspirations for Western democracy (among other factors) triggered a sizable group of Chinese students to call for democracy in China (Wong, 1990; Zhu & Rosen, 1993). Another example is the Carnation Revolution in Lisbon, which was catalyzed by college students and led to Portugal's democratization in 1974 (Accornero, 2016). A more recent example is the Arab Spring of 2011, where the expansion of education played an important role (Campante & Chor, 2012). Explaining the rigid opposition to the Soviet regime among highly educated citizens, Roeder (1989) demonstrates that the most educated were also the most resistant to state propaganda: They expressed the highest disagreement with "official interpretations of events reported in the paper" and were most critical of "the informational content of official publications" (p. 871).

Higher education additionally promotes political participation and expands social networks, which are also conducive to individual access to genuine information about the regime. Dahlum and Wig (2021) demonstrate that university-related protests "are more likely to emerge in dictatorships and that protests in university locations are more likely to concern *democracy* and human rights" (p. 3, emphasis added). In another contribution, they show that "education increases the frequency of mass protest, by alleviating collective-action problems and motivating mass opposition, particularly in autocracies" (Dahlum & Wig, 2019, p. 3). By actively participating in politics, highly educated citizens can expand their social networks and acquire new information through exchanging discourses with new social contacts (De Micheli, 2021). In turn, they may update their preexisting beliefs accordingly (Mische, 2008; Munson, 2010). Thus, the highly educated—who are also more active and networked in politics (see also Campbell, 2013; McClurg, 2003)—should have better access to genuine information from their peers about the electoral process in their country.

In short, I argue that education produces the fundamental knowledge and social networks that make highly educated citizens less susceptible to media control. This leads to the following hypothesis:

H2 (education): Highly educated citizens in nondemocracies overestimate the level of democracy in their country to a *lesser* degree.

Given H1 and H2, one may raise the following concern: What if the public—including less educated citizens—*observed* that the government exercised media control?[13] Wouldn't such observations make them view their government as *less* democratic? This concern is valid, which is why autocrats do not exercise media control overtly nowadays (Roberts, 2018). Guriev and Treisman (2019) argue that informational autocrats who exercise media control conceal censorship from the public by adopting less obvious techniques. Here are some examples:

- In Singapore, Lee Kuan Yew used to coopt corporate boards of key media outlets, which engaged in censorship for him.
- In Hungary, Viktor Orbán imposed an advertisement revenue tax in order to make critical media outlets less resourced and more vulnerable to takeovers by government allies.
- In Russia, Vladimir Putin uses surrogates and economic pressure to control the media.
- In Peru, Alberto Fujimori bribed most private media.

Given such discreet means of media control, it is often difficult for citizens in nondemocracies to detect censorship. In the rare case that citizens are able

to observe media censorship, they are usually the highly educated ones (Guriev & Treisman, 2019). These individuals, in turn, become less supportive of the incumbent regime as they dislike being deceived (Guriev & Treisman, 2020b). This therefore renders further support to H2, while leaving H1 generally untarnished.

A bigger threat to H1 and H2 is political orientation.[14] Robertson (2017) shows that, due to motivated reasoning, "citizens' underlying political orientations affect both the kind of information they gather and how they process that information" (p. 589). Shirikov (2021) further argues that confirmation bias, in addition to motivated reasoning, can make existing supporters of the political leader more susceptible to media manipulation. Reuter and Szakonyi (2021) also demonstrate that partisanship plays an important role in shaping individual perceptions about the electoral process in their country: Self-identified supporters of the ruling party tend to believe that their country has fairer elections and is more democratic. Therefore, citizens' access to regime-revealing information—be it facilitated by freer media or better education—does not unconditionally change their perceptions of the democraticness of their country. Their political predispositions may limit their ability to correct misconceptions about the state of their government. This additional nuance poses a threat to H1 and H2, leaving them an empirical question that remains to be tested.

Data and Methods

To test the hypotheses, I construct a unique dataset that includes the following variables:

- Dependent variable: an ordinal variable indicating the degree to which an individual in a nondemocracy overestimates the level of democracy in their own country.
- Key independent variables: media freedom of various nondemocracies; and individual education levels.
- Control variables: an array of individual characteristics, including sex, age, marital status, employment status, income, and social class; and economic performance, rule of law, and government effectiveness of various nondemocracies.

To construct the dependent variable, *Overestimation*, I first obtain individual perceived levels of democracy from the WVS (Wave 6: 2010–16),[15] followed by obtaining the measured levels of democracy of different regimes from V-Dem over the period 2010–16 (see next subsection for more details). To construct the variable *Media Freedom*, I obtain data from Freedom House's (2017) Freedom of the Press, and separately from Solis and Waggoner's (2021)

Media System Freedom, over the period 2010–16. I construct the variable *University Degree* and control variables on individual characteristics by obtaining the demographic data from the WVS.[16]

In constructing the dataset, I first exclude individuals who did not provide their responses or provided a response of "Don't know" regarding the perceived level of democracy in the WVS. I subsequently exclude individuals whose countries are classified as democracies by V-Dem's Regimes of the World (*v2x_regime*).[17] Additionally, I exclude individuals from Hong Kong and Palestine due to their data unavailability in Freedom of the Press. This leaves us with a total of 31,742 individual observations from 22 nondemocracies. The 22 nondemocracies are Algeria, Armenia, Azerbaijan, Belarus, China, Egypt, Haiti, Iraq, Jordan, Kazakhstan, Libya, Malaysia, Morocco, Nigeria, Pakistan, Russia, Rwanda, Singapore, Thailand, Ukraine, Yemen, and Zimbabwe.[18] With the exception of China, these are all electoral autocracies. This is particularly useful for my theory testing, since I posit that the theory is especially relevant to electoral autocracies.

Dependent variable

The dependent variable, *Overestimation*, is an ordinal variable indicating the degree to which an individual overestimates the level of democracy in their country. Data on perceived levels of democracy are retrieved from the variable *V141* in the WVS, which asks: "How democratically is this country being governed today?" The options range from 1 ("Not at all democratic") to 10 ("Completely democratic") and include "Don't know." On the other hand, data on measured levels of democracy are retrieved from V-Dem's Electoral Democracy Index (*v2x_polyarchy*) (Coppedge et al., 2021; Teorell et al., 2019). V-Dem rates the democraticness of each regime by year on a scale of 0 (least democratic) to 1 (most democratic), based on the extent to which the ideal of electoral democracy in its fullest sense is achieved. It is largely a procedural measure of democracy that captures five components, namely "Elected Officials, Clean Elections, Associational Autonomy, Inclusive Citizenship, and Freedom of Expression and Alternative Sources of Information" (Teorell et al., 2019, p. 71).

To achieve numerical comparability between perceived and measured levels of democracy, I rescale *v2x_polyarchy* so that it also ranges from 1 to 10, followed by rounding it off to the nearest integer. The dependent variable, *Overestimation*, is then constructed by subtracting the rescaled *v2x_polyarchy* of a country from an individual's perceived level of democracy in that country. For example, a Russian respondent who rated the democraticness of their country at 6 would overestimate the level of democracy by 2 points (i.e., *Overestimation* = 2), since the rescaled *v2x_polyarchy* for Russia was 4 in the corresponding year. If a Singaporean respondent rated the democraticness of

their country at 2, they would underestimate the level of democracy by 3 points (i.e., *Overestimation* = −3), since the rescaled *v2x_polyarchy* for Singapore was 5 in the corresponding year. In the dataset, respondents overestimated the level of democracy in their country by 1.55 points on average (Table 1). Figure 3 shows the distribution of *Overestimation*.

Some potential measurement problems must be noted, however. The first problem concerns the meaningfulness of directly comparing the WVS item with V-Dem's index: Citizens may differ from expert coders in their conceptions of democracy. In the appendix, I show that most citizens in non-democracies actually view free elections and civil rights protection as essential characteristics of democracy (Figure S1), which is compatible with the conceptions of democracy by V-Dem. In Section 6, I also conduct several important robustness checks to address the concern more directly.

Another problem is differential scaling. While V-Dem's coders could follow a coding scheme and would give the most undemocratic regimes very

Table 1. Summary Statistics of Variables.

| Variables	Number of Observations	Mean	Standard Deviation	Minimum	Maximum
Individual-Level Variables					
Overestimation	31,742	1.55	2.86	−4.00	8.00
University degree	31,678	0.18	0.38	0.00	1.00
Female	31,713	0.53	0.50	0.00	1.00
Age	31,704	39.82	15.47	18.00	102.00
$Age^2/100$	31,704	18.25	14.02	3.24	104.04
Married	31,710	0.59	0.49	0.00	1.00
Unemployed	31,649	0.09	0.29	0.00	1.00
Income	30,948	3.80	2.05	0.00	9.00
Subjective social class	30,939	1.64	1.01	0.00	4.00
Country-Level Variables					
Freedom of the press	22	29.27	9.78	7.00	48.00
Media system freedom	22	40.38	15.36	12.53	65.61
Log GDP per capita	22	9.12	0.97	7.33	11.24
Growth rate of GDP per capita	22	2.19	6.91	−24.10	14.10
Rule of law	22	38.05	15.26	17.40	84.60
Government effectiveness	22	40.23	18.16	8.40	93.40
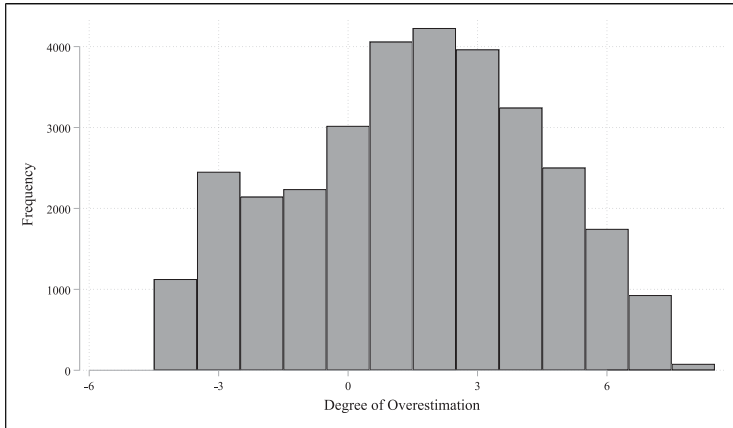
Figure 3. Distribution of the Dependent Variable.

low scores, citizens may be more reserved in giving extremely low scores to their country in survey responses—even if they believe their country to be highly undemocratic. Such a tendency among citizens may even be amplified due to preference falsification (but see Shen & Truex, 2021). A remaining problem pertains to V-Dem's index per se: Media freedom is part of V-Dem's Electoral Democracy Index, while this study regards media freedom as an explanatory variable. Each of these concerns constitutes important limitations, and is separately addressed—and mitigated—by the additional tests in Section 6.

Independent variables

The first key independent variable is media freedom. The data source, *Freedom of the Press*, rates the media freedom of each regime based on field research, reports of international NGOs, and interviews with domestic and international news media. It has been widely used by previous research on media control (e.g., Brunetti & Weder, 2003; Egorov et al., 2009; Guriev & Treisman, 2020b; Kellam & Stein, 2016). It focuses on citizens' ability to provide and access news and information through both traditional mass media and emerging informal social media in legal, political, and economic aspects (Freedom House, 2017). Legally, it examines how the laws and regulations of a state influence media content, and how they are used by the state to enable or restrict the media's operational ability. Politically, it examines how official censorship and self-censorship are practiced, as well as the editorial independence of both state-owned and privately owned media outlets. Economically, it examines how media ownership is structured within the state,

whether it is transparent and highly concentrated, whether private outlets' establishment and operation are costly (e.g., high taxation, prohibition on foreign investment), and whether the state allocates advertising or subsidies disproportionately to pro-government private outlets. Therefore, it importantly captures the *covert* strategies of media control adopted by informational autocrats as discussed by Guriev and Treisman (2019). I reverse-code this variable such that 0 indicates "least free" and 100 indicates "most free." In the dataset, *Freedom of the Press* varies from 7 to 48 with a mean of 29, indicating varied levels but a general lack of media freedom across the analyzed countries (Table 1).

In addition to *Freedom of the Press*, I use a new media freedom measure, *Media System Freedom* (Solis & Waggoner, 2021). Solis and Waggoner (2021) argue that this latent measure of media freedom is more reliable than other existing measures of media freedom. They use it to replicate Egorov et al.'s (2009) seminal study—which uses *Freedom of the Press* to obtain its influential media finding—and show that the results do not hold when *Media System Freedom* is instead used. This points to a need for using *Media System Freedom* as an alternative measure of media freedom. In my analysis, I multiply the *Media System Freedom* scores by 100 such that they range from 0 (least free) to 100 (most free). In the dataset, *Media System Freedom* varies from 13 to 66 with a mean of 40 (Table 1).

Another key independent variable is university education. Data are retrieved from the variable *V248* in the WVS, which asks the respondents their highest education level attained. Those who choose "University-level education, with degree" are treated as individuals with a university degree. A dummy variable *University Degree* is then compiled, which assigns the value of 1 to these respondents and 0 otherwise. 18 percent of respondents had a university degree at the time when the survey was conducted (Table 1).

Control variables

A number of individual characteristics—sex, age, marital status, employment status, income, and social class—are controlled for. Controlling for these variables is important because they may be related to both an individual's education level and their likelihood of overestimating the democraticness of their country. These individual control variables are constructed using the WVS.

I additionally control for country-level variables. First, I control for national economic performance by using GDP per capita and its one-year growth rate.[19] It is important to control for economic performance because it affects citizens' perception and evaluation of the regime on one hand (Guriev & Treisman, 2020b; Wike et al., 2017), and may be correlated to media freedom on the other. I additionally control for *Rule of Law* and *Government*

Effectiveness. Data are obtained from the Worldwide Governance Indicators (Kaufmann et al., 2010), with both variables originally ranging from −2.5 (worst) to 2.5 (best). To ease interpretation, I rescale them such that they range from 0 (worst) to 100 (best). Controlling for them is important: On one hand, citizens' evaluation of the regime may be inflated by its state capacity (Stockmann & Gallagher, 2011; Truex, 2017); on the other, strong states are also likely to be more capable of exercising media control.

Estimation strategy

I use multilevel modeling to test the hypotheses. Specifically, I fit a series of hierarchical linear models that treat individuals as the first level and countries as the second.[20] At the individual level, the model is specified as follows:

$$Overestimation_{ij} = \beta_{0j} + \left(\beta_{1j} + r_{1j}\right)University\ \ Degree_{ij} \\ + \beta_{2j}Individual\ \ Controls_{ij} + \varepsilon_{ij} \quad (1)$$

where i indexes an individual and j indexes a country. The residual term r_{1j} is included to allow the education effect to vary across countries,[21] and β_{0j} is the average intercept plus some country-dependent deviation:

$$\beta_{0j} = \gamma_{00} + \gamma_{01}Media\ \ Freedom_j + \gamma_{02}Country\ \ Controls_j + u_{0j} \quad (2)$$

Under this framework, the coefficients of interest are γ_{01} and β_{1j}. Specifically, a negative γ_{01} would indicate that media control is associated with a higher degree of individual overestimation of the level of democracy in their country. A negative β_{1j}, on the other hand, would indicate that university education is associated with a lesser degree of overestimation. Thus, negative γ_{01} and β_{1j} would be evidence in favor of H1 and H2.

Results

Main analysis

Table 2 summarizes the estimation results.[22] All models, which vary in the proxies for media control, show that higher levels of media freedom are negatively and statistically significantly associated with overestimation of the level of democracy. The effect is also large. Model 2 predicts that a twenty-point decline in *Freedom of the Press* (around two-standard deviations in the dataset) is associated with a two-point increase in the degree of overestimation. One way to contextualize this finding is to refer to the *Freedom of the Press* scores in 2017. According to the 2017 data, a twenty-point decline is equivalent to deterioration of the level of media freedom from that in Singapore to that in China: If the level of media freedom in Singapore

Table 2. Overestimation of the Level of Democracy, Media Control, and Education.

	Degree of Overestimation			
	Model 1	Model 2	Model 3	Model 4
Freedom of the press	−0.0783**	−0.1061***		
	(0.0320)	(0.0251)		
Media system freedom			−0.0706***	−0.0701***
			(0.0189)	(0.0120)
University degree	−0.3991***	−0.3990***	−0.3994***	−0.3994***
	(0.0585)	(0.0585)	(0.0585)	(0.0585)
Female	0.1632***	0.1632***	0.1631***	0.1631***
	(0.0546)	(0.0546)	(0.0546)	(0.0545)
Age	−0.0216***	−0.0216***	−0.0216***	−0.0216***
	(0.0044)	(0.0044)	(0.0044)	(0.0044)
Age^2/100	0.0262***	0.0262***	0.0262***	0.0262***
	(0.0052)	(0.0052)	(0.0052)	(0.0052)
Married	0.0299	0.0299	0.0299	0.0297
	(0.0594)	(0.0593)	(0.0593)	(0.0594)
Unemployed	−0.1383	−0.1378	−0.1386	−0.1383
	(0.0861)	(0.0860)	(0.0860)	(0.0859)
Income	0.1630***	0.1630***	0.1631***	0.1630***
	(0.0309)	(0.0309)	(0.0309)	(0.0309)
Subjective social class	0.0104	0.0106	0.0105	0.0105
	(0.0381)	(0.0381)	(0.0381)	(0.0380)
Log GDP per capita	0.1094	−0.6011**	−0.2446	−0.7900***
	(0.2780)	(0.2548)	(0.2889)	(0.2943)
Growth rate of GDP per capita	0.0418*	−0.0120	0.0042	−0.0459
	(0.0246)	(0.0226)	(0.0244)	(0.0285)
Rule of law		0.0229		−0.0293
		(0.0405)		(0.0386)
Government effectiveness		0.0415		0.0682**
		(0.0325)		(0.0315)
Constant	2.4983	7.3656***	6.3660**	9.7995***
	(2.8197)	(2.0897)	(3.0888)	(2.5702)
Number of observations	30,414	30,414	30,414	30,414
Number of countries	22	22	22	22
Log-likelihood	−68,636.79	−68,631.43	−68,634.69	−68,631.22
BIC	137,428.4	137,438.3	137,424.2	137,437.9

Note: Both *Freedom of the Press* and *Media System Freedom* range from 0 (least free) to 100 (most free). *Income* takes a ten-point scale ranging from 0 (lowest) to 9 (highest). *Subjective Social Class* takes a five-point scale ranging from 0 (lowest) to 4 (highest). Both *Rule of Law* and *Government Effectiveness* range from 0 (worst) to 100 (best). Robust standard errors are clustered at the country level and reported in parentheses: *$p < 0.10$,**$p < 0.05$,***$p < 0.01$ (two-tailed).

retrogressed to that in China, then based on the estimate, an average Singaporean citizen would overestimate Singapore's level of democracy by two additional points in 2017.

How much do the results change if we instead use *Media System Freedom* as a proxy for media control? Not much. Models 3 and 4 predict that a two-standard deviation decline in *Media System Freedom* is also associated with a two-point increase in the degree of overestimation. This result is reassuring and by no means trivial, especially when latest research has failed to use *Media System Freedom* to replicate seminal findings based on *Freedom of the Press* (Solis & Waggoner, 2021).

So far, the results provide empirical support for H1. What about H2? All columns in Table 2 show that university education is negatively associated with overestimation of the level of democracy. The coefficient is statistically significant at the one-percent level. On average, a university graduate overestimates the level of democracy in their country by 0.4 points less than their less educated peers do.

Given the body of literature that views education as propaganda (Cantoni et al., 2017; Testa, 2018; Voigtländer & Voth, 2015), the education effect documented here is also nontrivial. There are two possible explanations. First, previous studies focus on the indoctrination effects of education at the primary or secondary level, but not at the tertiary level. Second, even if university education serves as propaganda in nondemocracies, the state's purpose may not be in indoctrination, but in costly signaling (Huang, 2015). Thus, the education finding is not incompatible with past research, and is a novel finding on its own.

In short, the results provide empirical support for H1 and H2. The following subsection probes the mechanism.

Probing the mechanism

I probe the mechanism for media control in two ways. First, I test if citizens who live in electoral autocracies are more likely to believe that the elections in their country are fair when their country exercises a high level of media control. This is a relevant test, since one proposed mechanism for media control is that electoral autocracies, which often engage in electoral fraud, could censor the media to mislead their citizens into believing that the regime is democratic with free and fair elections. To test this mechanism, I leverage the same wave of the WVS and compare cross-nationally how an average citizen from each electoral autocracy rates the electoral process in their country. My analysis shows that citizens living in electoral autocracies with highly state-controlled media are *less* likely to think that their country's elections are unfair and manipulated, as compared to citizens living in electoral autocracies with freer media (Figure 4; see also Figure S8). This is
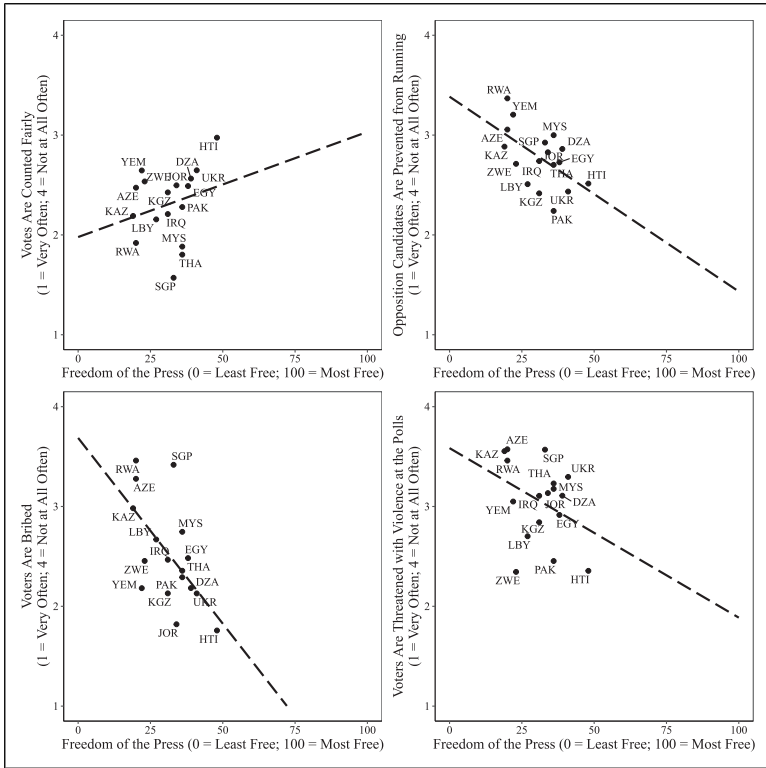
Figure 4. Media Freedom and Citizens' Views on the Electoral Process in Their Country.

Note: Data on citizens' views on the electoral process in their country are obtained from the WVS (Wave 6: 2010–16). They are country-average data after dropping nonrespondents, based on variables *V228A*, *V228B*, *V228D*, and *V228H* in the WVS. Armenian, Belarusian, Chinese, Moroccan, and Russian respondents were not asked these questions. Data on media freedom are obtained from Freedom House's *Freedom of the Press* (corresponding years).

consistent with my argument: Media control helps to create a façade of democracy by denying citizens' access to information that potentially reveals the undemocratic nature of the regime. This analysis also echoes recent work which suggests that media control is important for the survival of electoral autocracies, where many citizens may genuinely—and wrongly—believe that the manipulated elections in their country are free and fair (Reuter & Szakonyi, 2021).

To probe further, I analyze how individual Internet consumption interacts with media freedom. In countries with weaker media control, citizens would have better access to regime-revealing information through conventional

sources (i.e., newspapers, TV, and radio), so the Internet would not have much additional value in disseminating politically sensitive information to citizens. In countries with stronger media control, however, citizens' access to regime-revealing information through conventional sources would be limited, so the Internet—as an information source which is harder to monitor—would open up opportunities for citizens to acquire information that would lower their assessment of the democraticness of their country.[23] If this argument is correct, we should observe that individuals with more Internet consumption are generally *less* likely than their counterparts to overestimate the level of democracy. Additionally, this effect should vary between countries that exercise different levels of media control: It should be more pronounced in countries with less media freedom.

   I therefore leverage the individual Internet consumption data from the WVS (*V223*), with daily users of the Internet coded as 4 and never-users coded as 0 on a five-point scale. I then fit a new set of hierarchical linear models to incorporate a cross-level interaction term between Internet consumption and media freedom, while allowing the coefficient estimates of education and Internet consumption to randomly vary between countries (Heisig & Schaeffer, 2019). The results presented in Figure 5 support my conjecture. Where the media are more controlled by the state, frequent users of the
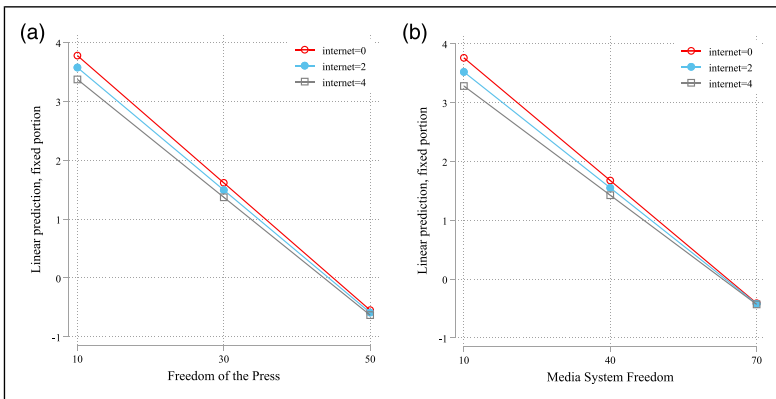

Figure 5. Interaction Effect between Media Freedom and Individual Internet Consumption. Panel A: Freedom of the Press Panel B: Media System Freedom. *Note:* Full sets of controls are included in the estimation. Fixed marginal effects are computed by assuming that all other covariates are at their mean values. The number of observations at the individual level is 29,051. Twenty-one (rather than 22) nondemocracies are sampled, as Moroccan respondents were not asked about their Internet consumption in the WVS. While the estimated interaction effect in Panel A is statistically insignificant, the effect in Panel B is statistically significant at the five percent level. See Table S1 for the full results.

Internet overestimate the level of democracy less; where the media are freer, users and non-users of the Internet overestimate with a similar degree. The interaction effect is positive and statistically significant where *Media System Freedom* is used as a proxy for media control (Table S1).[24] This further underscores the importance of media control in making people overrate the democraticness of their country.

To probe the role of Internet access further, I test if Internet filtering and social media monitoring at the country level are associated with citizens' views on the electoral process in their country. Figures S9 and S10 document strong correlations: Citizens in nondemocracies tend to overrate the electoral process in their country as Internet filtering and social media monitoring are more widespread (see also Bailard, 2012; Miner, 2015; but see Reuter and Szakonyi 2015 for a more nuanced account).

Finally, I probe the mechanism for university education. I argued that highly educated citizens overestimate the level of democracy in their country to a lesser degree, since they are more well-informed and thus more able to resist state propaganda and detect electoral fraud. If this is true, then conditional on living in the same nondemocracy, university graduates should view the electoral process in their country as less fair. To test this claim, I deploy a series of questions on electoral fairness in the WVS and regress the resulting variable—perceived electoral fairness—on university education and Internet consumption, while using country fixed effects and a rich set of individual controls to sweep out country- and individual-level confounders (see Appendix B.2). In line with my theoretical predictions, I find that the coefficient estimates for both *University Degree* and *Internet Consumption* are negative and statistically significant (see Appendix B.2). This suggests that highly educated citizens evaluate the electoral process in their country more negatively, as compared to their less educated peers in the same country. It also underscores the role of Internet access, since citizens who use the Internet more frequently are more negative toward the electoral process in their country, as compared to the less frequent users in the same country.

Robustness Checks

I conduct additional analyses to check the robustness of my findings.

Addressing measurement problems with the dependent variable

One major concern is that there is a misalignment between citizens' and expert coders' conceptions of democracy. If this is true, then the measured levels of democracy by V-Dem are conceptually incomparable with citizens' perceived levels of democracy. To address this issue, I check the results by constructing the dependent variable using democracy indices that adopt different

conceptions of democracy. For this purpose, I use Polity5's *Revised Combined Polity Score* (Center for Systemic Peace, 2020), Freedom House's (2020a, 2020b) *Freedom in the World*, and four other indices of V-Dem—*v2x_libdem*, *v2x_partipdem*, *v2x_delibdem*, and *v2x_egaldem* (Coppedge et al., 2016; Sigman & Lindberg, 2019)—to reconstruct the dependent variable. Figure 6 shows that substantive results for media control and university education do not change.

To further address the concern over a potential misalignment between citizens' and expert coders' conceptions of democracy, I drop respondents whose conceptions of democracy are apparently incompatible with those of V-Dem's expert coders. I define these respondents as those who give *any* one of the following responses in the WVS on a scale of 1 ("Not an essential characteristic of democracy") to 10 ("An essential characteristic of democracy"):

1. Governments tax the rich and subsidize the poor: 10.
2. Religious authorities interpret the laws: 10.
3. People receive state aid for unemployment: 10.
4. The army takes over when government is incompetent: 10.
5. The state makes people's incomes equal: 10.
6. People obey their rulers: 10.
7. People choose their leaders in free elections: 5 or below, or nonresponse.
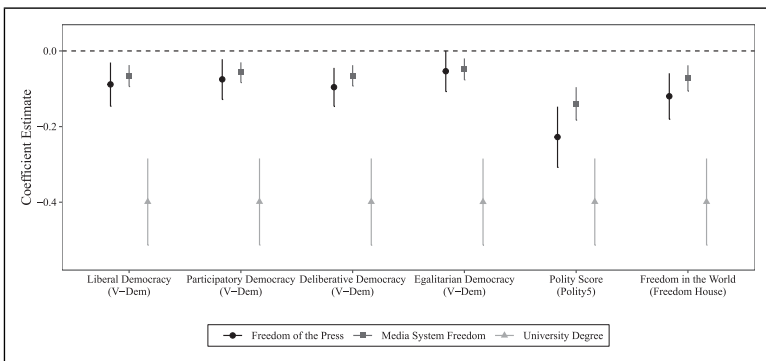

Figure 6. Robustness Check—Reconstructing the Dependent Variable Using Alternative Democracy Indices.
Note: The estimation strategy follows the model specification characterized by Equations (1) and (2). Coefficient estimates for university education are based on models that use *Freedom of the Press* as a proxy for media control. Size and precision of the estimates do not meaningfully change where models based on *Media System Freedom* are instead used. Vertical lines represent 95% confidence intervals.

After dropping these respondents, the sample size greatly decreases from 30,414 to 11,517. Yet, the new results presented in Figures S11 are strikingly similar to those presented in Table 2. I imposed further restrictions by lowering the thresholds for items (1) to (6), additionally dropping respondents who give an "8" or "9" to these items. The results remained largely unchanged (Figure S11). To deal with individuals' inherent tendency to use Likert scales very differently, I conduct additional tests by only including those who rate the conventional features of democracy as strictly higher than items (1) to (6).[25] The results, once again, remain robust (Figure S12). In sum, there is no evidence that the results reported in Table 2 can be explained by the different conceptions of democracy between citizens and expert coders.[26]

To address the issue of differential scaling ($v2x\_polyarchy$ vs. the WVS item on perceived levels of democracy), I reconstruct the dependent variable in two ways. First, I standardize $v2x\_polyarchy$ and perceived levels of democracy in the full sample, followed by subtracting the former from the latter for each individual. Second, I collapse the original dependent variable into a binary one, with 1 indicating that an individual overestimates the level of democracy in their country (and 0 otherwise). These new measures arguably demand less direct comparability between $v2x\_polyarchy$ and the WVS item on perceived democraticness. As documented in Appendix C.3, they produce substantively similar results (Tables 2 and S4).

Another important concern is that the media freedom measures could simply pick up the effect of free and fair elections on citizens' perceptions of regime democraticness. This is particularly concerning (1) when media freedom is part of V-Dem's index and (2) when nondemocracies with the most restricted media often have the most unfree and unfair elections. To mitigate this concern, I conduct three tests.[27] First, I construct another dependent variable by dropping the media freedom component from V-Dem's index and redo the main analyses based on this variable (Appendix C.3). Second, I conduct placebo tests using the two electoral components of V-Dem's index (Appendix C.4). Third, I conduct horse race tests using these two variables (Appendix C.4). While results from the first test highlight the robustness of the media finding, results from the second and third tests further underscore the uniqueness of this finding.

Excluding countries that are most likely to bias the results

It is possible that the results are biased as they are strongly driven by the results from one particular country. One such potential candidate is China, which is branded by Ringen (2016) as a "controlocracy" and the "perfect dictatorship." Moreover, China is the only nondemocracy that is not an electoral autocracy in my sample. After dropping Chinese respondents from the dataset, I conduct the same multilevel analyses, and substantive results remain unchanged
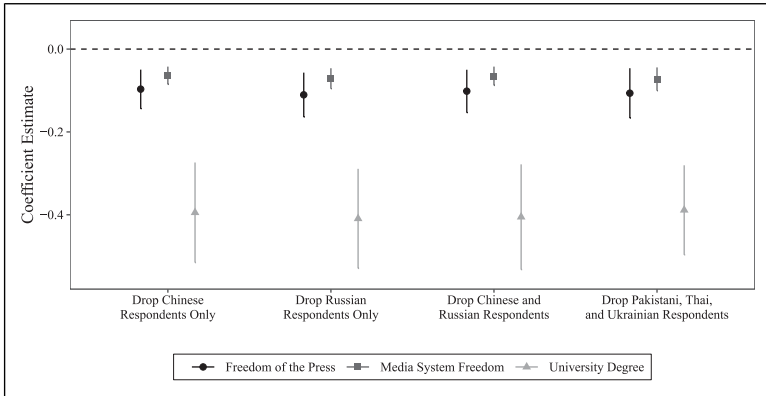
Figure 7. Robustness Check—Dropping Respondents from Different Countries.
Note: The estimation strategy follows the model specification characterized by Equations (1)
and (2). Coefficient estimates for university education are based on models that use *Freedom of the
Press* as a proxy for media control. Size and precision of the estimates do not meaningfully change
where models based on *Media System Freedom* are instead used. Vertical lines represent 95%
confidence intervals.

(Figure 7). Additionally, I exclude Russian respondents from the analyses and
obtain similar results (Figure 7). I also exclude Pakistani, Thai, and Ukrainian
respondents as these countries are democracies under Boix et al.'s (2013)
dichotomous coding of democracy. Reassuringly, both media and education
findings remain robust (Figure 7).

Addressing concerns about preference falsification

Another potential problem is preference falsification. The concern is twofold:
At the country level, citizens living in repressive regimes may conceal their
true evaluation of their country; at the individual level, high-income citizens
living in nondemocracies may be systematically more likely to conceal their
true preferences (Jiang & Yang, 2016). I conduct two tests to address the
concern at the country level. First, I exclude the most repressive regimes from
the analysis. If preference falsification in nondemocracies were a serious
problem in the WVS, we would expect it to be most prevalent in highly
repressive regimes. After dropping respondents from the most repressive
countries from my analysis,[28] I find that the substantive results remain un-
changed (Figure S17). Second, I control for human rights protection. The idea
is to treat human rights protection as a proxy for preference falsification at the
country level: Citizens living in countries with greater protection of human
rights should be less likely to feel the need to falsify their preferences in

opinion surveys. Table S5 shows that the results are robust to this additional control.

I conduct four tests to address concerns about preference falsification at the individual level. In the first two tests, I drop high-income and privileged respondents from the analysis. These tests are important because these individuals may be less likely to suffer reprisals for their opinions—or understand that survey responses will not be shared with the government—while they are likely to be more educated at the same time.[29] My third test is to drop respondents who are worried about state monitoring,[30] and the fourth is to drop respondents who had other people around who could follow the interview.[31] All tests converge to the same conclusion: The results remain robust to the exclusion of these respondents (Figure S17). I additionally examine the nonresponses for the question on perceived democraticness in the WVS, and find no evidence that media control is correlated with nonresponses (Table S6).

Conducting additional tests for the education finding

I conduct additional robustness checks for the education finding. One possible concern is that highly educated citizens may simply have more restrictive operational definitions of democracy, regardless of the regime type. That is, these citizens may *underrate* the level of democracy even in actual democracies. I rule out this alternative explanation in three ways. First, I show that highly educated citizens and their less educated peers, in fact, have similar conceptions of democracy (Figures S4–S6). Second, I find that highly educated citizens overestimate less than their less educated peers do, even after controlling for citizens' confidence in the courts, government, and civil service (Table S8). Third, I demonstrate that, in *democracies*, highly educated citizens do *not* perceive their country to be less democratic compared to their less educated peers (Table S7). These analyses further highlight the uniqueness of the education finding to nondemocracies.

Other important tests

Finally, I conduct a series of less theoretically driven—yet empirically important—robustness checks. First, I redo the main analyses by using OLS with cluster-robust standard errors based on wild bootstrap (Cameron et al., 2008) (Table S9). Second, I check if the assumed linear relationship between media control and overestimation is reasonable,[32] and find no evidence for a concaving effect of media control on overestimation (Figure S18). Sensitivity analyses additionally suggest that the results are highly robust to unobserved confounders (Figure S19–S21), which could include preference falsification.

In sum, the main results reported in this paper withstand a battery of theoretically and empirically motivated robustness checks.

Conclusion

Overestimation of the level of democracy is prevalent among citizens in nondemocracies. Despite such prevalence, no research to date has systematically documented this phenomenon and examined its determinants. Autocrats—especially those in electoral autocracies—are incentivized to create a façade of democracy because legitimacy often plays an important role in their survival. Based on this premise, I argued that media control helps to create this façade, but not all citizens are gullible: Highly educated ones are not easily manipulated. I combined media freedom data with individual survey response data to test this argument, and found suggestive evidence for it.

This study has implications for media control in autocracies. Previous research suggests that autocrats sometimes prefer freer media because greater media freedom may help improve the quality of government, while it also emphasizes the potential drawback associated with the collective action problems in organizing revolutions (Egorov et al., 2009; Lorentzen, 2014). Indeed, autocrats often censor the media as they fear collective action (King et al., 2013), but one added benefit from media control that the extant scholarship has neglected is its boost of democratic legitimacy. With this added benefit, autocrats are even more incentivized to suppress media freedom. This, along with the fear of collective action, may explain why we observe unprecedentedly high levels of media control in many enduring, resilient informational autocracies nowadays (Guriev & Treisman, 2019).

This study may also have implications for modernization theory (Glaeser et al., 2007; Lipset 1959). As the results show, highly educated citizens are less likely to overestimate the level of democracy in their country. To the extent that autocracies require democratic legitimacy to survive, an ever-increasing level of education in a country implies that more and more citizens would eventually realize that their country is in fact being undemocratically governed. The resulting loss of democratic legitimacy of the incumbent regime may, in turn, threaten its survival. This threat is particularly credible when the regime has electoral institutions, since under a competitive autocracy citizens have a genuine chance to oust the authoritarian rulers in elections. If this speculation is true, then we may expect more electoral autocracies, whose citizens are becoming increasingly educated, to be vulnerable to collapse in the future.[33]

This study is not without limitations. As noted, the evidence presented here is only suggestive. It cannot, and should not, be seen as proof of causal relationships.[34] This is because not only does the empirical analysis rely on

cross-national data that are often noisy and insufficiently fine-grained,[35] it also lacks a credible identification strategy: While reverse causation may be less likely, omitted variable bias—especially at the country level—may be harder to rule out. The mechanism behind the education finding is also not entirely clear, since the effect could be driven by people's self-selection into university education. The aim of this article, consequently, is more modest: That is, to systematically document the prevalence of overestimation of the level of democracy in nondemocracies, generate theoretically motivated hypotheses to account for this phenomenon, and show whether the existing data can provide prima facie evidence for these hypotheses.

Hence, this paper opens up exciting avenues for future research. First and foremost, it invites more rigorous tests of the relationships explored in this paper. For example, there are novel ways to gauge media freedom subnationally (Guriev et al., 2021), and future scholarship may leverage this type of fine-grained data to tease out the causality between media control and overestimation of the level of democracy. Future research should also follow up with the following questions: Is media control *unconditionally* useful for autocrats? Does it play a *key* role in enabling autocrats to create a façade of democracy? If not, what are the *other* important factors? Addressing these questions likely involves hard work, but it will certainly pay off by contributing to our understanding of media control, authoritarian resilience, and democratization.

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Supplemental Material

Notes

1. Examples include the Occupy Wall Street movement in the U.S. and the Yellow Vests movement in France.
2. This article uses "nondemocracy" and "autocracy" interchangeably.
3. By overestimation, I refer to the situation in which the perceived level of democracy exceeds the measured level of democracy in a given country.
4. The Electoral Democracy Index by V-Dem rated the U.S. and Japan at 0.90 and 0.85 in 2011 and 2010, respectively, while the average perceived levels of democracy in these two countries were only 0.60 and 0.64 (on a unit interval) in corresponding years. China and Singapore were rated 0.09 and 0.41, respectively, in 2013 and 2012, while the average perceived levels of democracy in these two countries were 0.60 and 0.65 in corresponding years—nearly identical to those in the U.S. and Japan.
5. The traditional usage of this term refers to the European Union's lack of legitimacy, but scholars who study the legitimacy crisis in democracies have applied this concept more broadly to reflect any situation where the perceived democratic performance falls short of public expectations (Norris, 2011, Ch. 1).
6. By media control, I refer to government control of the media in terms of its influence on media content, either by practicing media censorship (which includes both official censorship and self-censorship), misreporting news in a self-serving manner (i.e., media bias), or dominating media ownership by the state. This understanding of media control follows Gehlbach and Sonin (2014).
7. There are, however, exceptions. See, e.g., Bleck and Michelitch (2017) for media control in Mali; Gläßel and Paula (2020) in East Germany.
8. Citizens in nondemocracies indeed value democracy. When asked about the importance of democracy in the WVS, most respondents in nondemocracies said democracy is "absolutely important" to them (Figure S7).
9. In the 2013 WVS, among the 2300 Chinese respondents who were asked about how they viewed the importance of democracy on a ten-point scale (1 = Not at all important; 10 = Absolutely important), three-tenths gave a score of 10 and nearly two-fifths gave a score of 8–9. Only 42 respondents (less than 2%) gave a score of 1–4.
10. In their model, citizens do not observe the leader's type while the informed elite does. Citizens overthrow the leader if they conclude that the leader is incompetent. The dictator's decision is to "invest in making convincing state propaganda,

censoring independent media, coopting the elite, or equipping police to repress attempted uprisings" (Guriev & Treisman, 2020a, p. 1).

11. Lesta does not test the mechanism concerning information control in oppositional strongholds, however.

12. Skeptics of the CCP on the basis of its lack of democracy is definitely not rare in China. In the context of Chinese social media, these skeptics are called the "American Cent Party," who "express Western democratic values and criticize the Chinese communist regime online" (King et al., 2017, fn. 2).

13. For the backfiring dynamics of media control, see Gläßel and Katrin (2020), Guriev and Treisman (2020b), Roberts (2018), and Shadmehr and Bernhardt (2015).

14. I thank an anonymous reviewer for pointing this out.

15. I use the version released on September 12, 2018, which includes Haiti's data in 2016. Wave 7 (2017–20) of the WVS is not used because the main media freedom dataset used in this study has not been updated since 2016.

16. World Value Surveys are nationally representative surveys conducted in countries from different parts of the world by using a common questionnaire in the native language. See Lechler and Sunde (2019) for a recent publication that uses the WVS.

17. In V-Dem's coding scheme, regimes are classified as democracies only if they score above 0.5 on the Electoral Democracy Index.

18. Three other nondemocracies in the WVS sample—Kuwait, Qatar, and Uzbekistan—are excluded because respondents in these countries were not asked to evaluate the democraticness of their country.

19. Instead of the one-year growth rate, I have also used other growth rates as controls (e.g., five-year growth rate). Results remain unchanged as these alternative proxies are used.

20. Compared to an alternative approach which ignores the hierarchical structure of the dataset by pooling all data and subsequently adjusting for country clusters, the current approach tends to produce more conservative estimates of standard errors associated with the country-level variables (Gelman & Hill, 2006; Steenbergen & Jones, 2002).

21. This is a conservative practice compared to simply fitting a random intercept model (Heisig & Schaeffer, 2019).

22. Replication materials and code can be found at Yeung (2022).

23. Although online censorship is also common in nondemocracies, access to politically sensitive information via the Internet is much harder to prevent. For example, while conventional media are "tightly controlled" in Saudi Arabia, citizens' use of Twitter creates trouble to the regime given Twitter's noncompliance with the Saudi government's requests (Pan & Siegel, 2020, p. 109). Internet control in China is carefully executed, but Internet censorship circumvention is not uncommon among highly educated and tech-savvy Chinese citizens, who

use proxying and Virtual Private Networks to leap over the Great Firewall of China (Roberts, 2018).

24. To confirm that the heterogeneous effects are unique to Internet consumption, I have also estimated the cross-level interaction effects between media freedom and individual consumption of conventional information sources (newspapers, TV, and radio). The estimates are all statistically insignificant ($p > 0.20$).

25. I thank an anonymous reviewer for suggesting this test.

26. Relatedly, I also drop respondents who do not believe that democracy is important. Substantive results remain unchanged (Figure S13).

27. I thank two anonymous reviewers for raising this concern and suggesting relevant tests.

28. The countries are Iraq, Pakistan, and Yemen—identified by using the Political Terror Scale (Gibney et al., 2019).

29. I thank an anonymous reviewer for highlighting this possibility.

30. I use the variable *V186* in the WVS for this purpose.

31. I use the variable *V252* in the WVS for this purpose.

32. See Egorov et al. (2009), Huang et al. (2019), and Lorentzen (2014) on heterogeneous media effects that are sometimes found in nondemocracies.

33. Speculatively, the recent electoral defeat of the United Malays National Organisation—the dominant party in Malaysia for six decades—might be an example. The near record low of electoral support for the People's Action Party of Singapore in 2020 may hint at this possibility, too.

34. However, it is also worth noting that the robust correlation between media control and overestimation of the level of democracy, as found in this study, could be an underestimate. This is because citizens living in opposition strongholds may not be subject to state-wide media control (Lesta, 2019), while the media finding documented here is obtained after including these individuals in the sample.

35. For instance, while the media freedom data used in this study are at the country level, citizens living in different regions of the country may face different levels of media control.

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