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What fuels conservative voting? Revisiting Costa Rica's 2018 elections

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 $\begin{array}{c} {\rm Marco\ Hidalgo\ Ram{{\rm i}rez^1}}\\ {\rm February\ 2024} \end{array}$

Despite being known as the most stable and oldest democracy in Latin America, Costa Rica had an unprecedented electoral episode in early 2018. In the light of same-sex marriage legal approval, an evangelical conservative party openly against it suddenly took off in popularity during the campaign. For months the country experienced a tense polarizing atmosphere. In this research, I implement an Instrumental Variable econometric approach using district-level data since 1973 to rigorously test whether lower education and poverty fueled conservative support. My findings suggest that historical economic insecurity did cause conservative support against human rights.

<u>Keywords:</u> Inequality, Election and Voting Behavior, Human Rights Law, Political Economy. <u>JEL codes:</u> D63, D72, K38, P00.

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A- Introduction

Economic anxiety can fuel discriminatory attitudes toward the otherness and the unknown. In primitive societies, when a tribe's territory produces the bare minimum food to avoid starvation and another tribe moves in, then the former can develop discriminatory feelings against the latter. When material insecurity arrives, survival can dominate the entire life strategy of a group. Contrarily, when survival can be taken for granted, societies tend to be more open to new ideas and more tolerant of outsiders (Inglehart, 2020).

Globalization coupled with an unprecedentedly high level of economic security experienced after World War II, especially in developed Western democracies, cemented an intergenerational shift toward Postmaterialist values. A "Silent Revolution" flourished from the privileged strata of the post-war cohorts. These generations gradually introduced progressive social change and humanistic values that translated into the demand for recognition from previously invisible groups to mainstream society. The revolution brought the expression of diverse sexuality, LGBT+ rights, same-sex marriage, reproductive rights, and more gender identities; open-mindedness towards migrants, refugees, foreigners, and multicultural diversity; and international humanitarian aid managed by agencies like the United Nations (Fukuyama, 2018; Inglehart, 2020; Norris & Inglehart, 2019).

While modern capitalism has unblocked those amazing opportunities in the field of human rights, it has also triggered a winner-takes-all economic system that led to a steeply rising inequality. Although the developed world has achieved economic growth, its gains went to the top 10 percent, whereas lesseducated sectors experienced a declining real income and a diminished wealth share (Inglehart, 2020).

For these left-behind groups, exposure to disruptive constant change brings confusion over their identity. The modern world might leave formerly dominant groups displaced and disconnected from fellow humans. This activates a nostalgic feeling for a mythical golden past they think they have lost, one where their community and structured traditional life did fit in. The non-economic issues post-materialists brought made them feel endangered, as the national interests seemed to be drawing away from attending to their economic necessities. This context offers fertile ground for populist politicians to mobilize followers around a resentment narrative that they have been humiliated and promise to fight against the expansion of liberal values (Fukuyama, 2018; Guriev & Papaioannou, 2022; Inglehart, 2020).

In the Americas, the above theoretical approaches seem to accurately depict recent well-known political victories, such as Trump in the U.S. in 2016 and Bolsonaro in Brazil two years later. A less famous case happened in Costa Rica in 2018. Judging by the country's stagnated poverty and its rising inequality and unemployment, early forecasts diagnosed that the electorate would decide based on the candidates' proficiency to confront those issues. Nevertheless, one month before the elections, a resolution released by the Inter-American Court in light of approving same-sex marriage, changed the course of events. An emergent evangelical party (PRN) suddenly took off in popularity, which polarized Costa Rica between its conservative supporters and the rest of the country (Pignataro & Treminio, 2019).



Figure 1: District-level spatial distribution of conservative voting in 2018, and socioeconomic factors in 2011.

Self-elaborated using electoral data from Tribunal Supremo de Elecciones and demographic information from the Costa Rican 2011 census.

This political episode might be rooted in the history of two Costa Ricas that have grown apart. One is prosperous, educated, and modern, mainly in urban areas of the center of the country. The other one, located on the coasts and along the borders, is low-educated and poor (Barrera et al., 2021).

<u>Figure 1</u> graphically symbolizes my hypothesis. The geographic heterogeneity of PRN voting support in 2018 –in panel a- is related to lower levels of education –see panel b- and economic anxiety, measured by unemployment and overcrowding –in panels c and d, respectively-. Consistent with Barrera et al. (2021), <u>Figure 1</u> also portrays the divergence between the center –zoomed in on the right- and the periphery².

Previous research developed by Pignataro and Treminio (2019), Rodríguez et al. (2019), Barrera et al. (2021), and Pignataro (2021) have approached my hypothesis to a correlative extent using individuallevel datasets. My contribution to this literature consists of elevating their findings to causal ones. To do so, I exploit archival registries of electoral outcomes at the district level merged with microdata extracted from the Costa Rican censuses collected in 1973, 1984, 2000, and 2011. To rule out endogeneity, I implement the econometric instrumental variable method.

My findings suggest that district-level economic insecurity, mediated by history and low educative achievements, explains 2018's support favoring radical right populists in Costa Rica. I then test the validity of my results by running a robustness check that computes an analogous instrumental method with alternative data, this delivers confirmatory evidence supporting my hypothesis.

Overall, these findings are indicative that narrowing socioeconomic gaps has the potential to prevent a reverse Silent Revolution. Enhanced economic conditions and education endow the electorate with sufficient criticism to prevent the country from democratically choosing leaders who could deteriorate societal well-being and endorse conservative values against human rights, especially those of historically neglected groups. Yet, it won't be enough when those conditions are enjoyed by a privileged minority.

The remainder of this inquiry is organized as follows. Section B- surveys some political economic literature on populism and locates 2018's Costa Rica within that context. In Section C-, I elaborate on the methodology. The results are presented in Section D-. I then implement a robustness check, in Section E-. Finally, some conclusive insights are found in Section F-.

B- Related literature

1. The basics of populism and the Costa Rican context

From Hugo Chávez to Donald Trump, the term "populist" is arbitrarily used to describe diverse contexts. In a meta-analysis, Guriev and Papaioannou (2022) proposed that populists lack a clear common ideology. While left-wing populists tend to support income redistribution policies and are either laic or nonreligious, right-wing ones are against redistribution and prioritize Christianity at the top of their agendas.

 $^{^{2}}$ Complementarily, the <u>online-appendix I</u> presents further evidence of the positive (negative) relationship between PRN support and economic anxiety (scholarity).

Guriev and Papaioannou (2022) elaborate that populism then relies on two symptoms: anti-elitism and anti-pluralism. Anti-elitism emerges as sentiments against historically privileged groups who have set the status quo. Populists blame them for the societal state of inequality. This behavior goes hand in hand with populists being against scientific criteria, for instance, anti-vaccination movements and the denial of global warming. Populists consider that science is part of the elites' privilege and has not been able to cope with social suffering.

Anti-pluralism refers to the placement of homogeneity over diversity. At the micro-level, this leaves no room for pluralism and the protection of minorities. At the macro-level, their vision is that politics can be reduced to a centralized figure representing the whole. This materializes as a simplification of government structures that concentrates the power of parliaments, independent agencies like central banks, supreme courts, and media (Guriev & Papaioannou, 2022).

In addition to pure populism, Mudde (2007, 2010) proposes that two additional nuances define the "populist radical right": nativism and authoritarianism. Nativism is the ideology that nations should be inhabited by members of a native group, whilst non-native people and ideas are a fundamental hazard to the homogeneity of the state.

With respect to authoritarianism, Eichengreen (2018) and Norris and Inglehart (2019) explain that it emerges in two ways. First, as the threatening rhetorical language used against the established elites and authorities. Second, as the strict endorsement of conventional moral norms, intolerance of diversity, and the aim to override the rights of minorities or outsiders.

During the electoral campaign prior to the first round³ of the 2018 elections in Costa Rica, two emerging parties empirically presented those three elements. Partido Integración Nacional (PIN) was initially at the top of the survey-based voting intention rankings. This party had a disruptive xenophobe speech, they openly identified as enemies of migration. Besides, they aimed to foster severe punitive policies to cope with crime. However, they centered their campaign around corruption by attacking the elite, other candidates, and the media; and by defending a narrative that segregated the electorate from the villainized politicians (Pignataro & Treminio, 2019).

Partido Restauración Nacional (PRN) had some parallels with PIN. PRN also compromised to implement more restrictive migratory controls and harsher security policies. Nonetheless, both parties followed a divergent trajectory. PRN took advantage of one major coincidental inflection point. A month before the first electoral round, the Inter-American Court of Human Rights (IACHR), in reaction to an advisory opinion requested by Costa Rica's government, declared that the state members should protect all the rights of same-sex families and support the individuals' name changing based on self-perceived gender identity (Corte Interamericana de Derechos Humanos., 2017; Pignataro & Treminio, 2019).

³ In Costa Rica, the minimum share of valid votes to win the election in the "first round" is 40%. If not a single party meets that threshold majority, the two parties with higher support move forward to the "second round", which takes place two months later. In this binary second round, there is no such minimum boundary, meaning that the party with more voting support is democratically elected as the winner.

PRN's leader rapidly manifested that he was against IACHR's resolution. Not only he would not obey it, but he would withdraw Costa Rica from the Court. He motivated his supporters to consider the election as a referendum on traditional marriage. Moreover, in PRN's government plan, they state that those "nazi-fascist" ideologies were endorsed by the corrupt elites, which threatened the values of -allegedly-90% of Costa Rica, namely Evangelicals, Christians, and Catholics. Contrarily, Partido Acción Ciudadana (PAC) was one of the few parties in favor of the resolution (Partido Restauración Nacional, 2017; Pignataro & Treminio, 2019).

This polarization generated an unprecedented electoral juncture. Both parties moved forward to the second voting round. In both stages of the elections, the political debate was not necessarily focused on "valence issues" like the stagnated poverty rate and the increasing inequality and unemployment. It rather gravitated around "position issues" that were reduced to the so-called "gender ideology", for instance: same-sex marriage, abortion, sex education in schools, and the religious secularity of the country (Pignataro & Treminio, 2019). <u>Table 1</u> summarizes the evolution of the elections.

<u>Table 1</u> : Ideological and voting summary of 2018 Costa Rica's elections								
Christopia		Party						
Criteria	PIN	PRN	PAC					
Radical populist right feature								
Nativiam	-Anti-immigration	-Anti-immigration						
Nativism		-Homogeneous country						
	-Harsh security policies	-Harsh security policies						
Authonitonianiam		-Withdrawing Costa						
Authoritarianism		Rica from the IACHR						
		-The liberal elite						
		threatens the religion of						
Populism		90% of Costa Rica						
	-Elite is corrupt							
Electoral outcome ($\%$ of valid	votes)							
First round (February)	10% (lost)	25%	22%					
Second round (April)		39% (lost)	61% (won)					
Self-elaborated, based on Pignata	Self-elaborated, based on Pignataro and Treminio (2019) and TSE data.							

In the end, PRN lost against PAC in the second round. Qualitatively, three general cleavages have been related to this phenomenon. First, one journalistic research that revealed PRN's attacks against "la Virgen de los Ángeles" –the most important figure in Costa Rica's catholic imaginary- became mainstream, which made indecisive Catholics lean toward PAC in the second round. Second, PAC's candidate strategically behaved by allying with key defeated parties from the first round and questioning PRN for mixing politics and religion during televised debates. Third, the polarized and tense atmosphere perceived between voting rounds motivated the electorate's participation, which reduced abstentionism. While being beneficial for PRN, its popularity growth was not enough to offset that of PAC (Alfaro-Redondo, 2021).

2. Consequences

Quantitatively, Funke et al. (2020) studied the economic performance of 60 countries managed by 51 populist presidents between 1900 and 2020. They found that these countries did not diminish their income inequality. Instead, the authors show that their per capita income was, on average, 10% lower than their counterfactual. The weakening of institutions mediates these outcomes: to remain longer in power, populists tend to deteriorate democratic institutions such as press freedom, fair and free electoral systems, and judiciary constraints.

More recently, two democratic episodes of the 21st century have been exploited by the political economy literature: United Kindom's Brexit and Donald Trump's election, both in 2016. Brexit fits under the populist analysis as it endorsed the anti-pluralist values proposed by Guriev and Papaioannou (2022). So far, although it came officially into force in early 2020, since 2016 Brexit has caused an annual one percentual point (pp hereafter) loss of its GDP (Born et al., 2019b), a reduction of 10% of its inland investment that generates productivity losses between 2% and 5% on national firms (Bloom et al., 2019), and higher inflation due to import costs, it accounted up to 2.9% by 2019 (Breinlich et al., 2019).

In the Americas, Born et al. (2019a) state that Trump's USA reported no perceptible macroeconomic losses in production and employment because the costs of the trade war against China were offset by the benefits achieved with the large tax cuts. However, in response to the tariffs imposed during Trump's government, China, India, Canada, and the European Union (EU onwards) punished back the US by imposing tariffs which have pass-through to customers in the form of inflation; this caused short-run costs of 50 billion dollars (Fajgelbaum et al., 2020; Guriev & Papaioannou, 2022).

Interestingly, beyond economic consequences, Trump's rhetoric could have fostered the normalization of previously unacceptable behaviors, leading to hate crimes against minorities. In fact, Müller and Schwarz (2020) causally found that Trump's Islam-wise tweets predict xenophobic tweets posted by his followers; and Twitter usage, on its own, predicted a large variation of anti-mulism hate crimes. In addition, Bursztyn et al. (2020) ran an online experiment around the 2016 election where they offered cash to participants if they authorized the authors to donate to anti-immigrant organizations. They found that, during the campaign, there was a social stigma or blame related to that support, but it completely faded away after Trump's victory, meaning that those extreme xenophobic behaviors are less criticized when they become the mainstream norm.

3. Causes

Whereas the last segment discusses the ex-post aspects of populism, this one moves on step backward and focuses on the ex-ante criteria. Simplistically speaking, populists only need a threshold majority of the votes to get into power, but what fuels the electorate's decision is multicausal. In this segment, I split the potential determinants into four families that could be intertwined, but I treat them as independent.

i. Globalization shocks

Even when trade openness and migration progress have shown to come along with aggregate positive returns in the long run, it is no secret that they generate winners and losers at the individual level in the

short run as they modify labor relationships, employment, and wages. Populist politics tend to endorse values against the influx of imports and foreigners. The evidence from advanced economies suggests that globalization-led shocks provide dissatisfaction to highly exposed sectors that, in turn, end up supporting populist parties and, particularly, moving right or more economically conservative (Guriev & Papaioannou, 2022).

ii. The response to crises

Economic crises represent a fertile ground for populist parties. It becomes easier to blame traditional parties during those junctures for not preventing the catastrophe. Besides, the recovery processes are often accompanied by austerity measures and adjustment programs that international organizations typically mediate. This is not well-received by populists who do not want to depend on global elites (Dornbusch & Edwards, 1991).

Funke et al. (2016) studied the 827 electoral processes of 20 countries during 1870-2014. They found that significant increases in far-right voting tend to follow financial crises. Bromhead et al. (2013) consistently got similar conclusions when restricting the analysis around the Great Depression, whereas Algan et al. (2017) found that unemployment causally predicts populist voting in 21st-century Europe.

iii. Cultural factors

Overall, contemporary economic junctures could fuel long-run pre-existing cultural divides and magnify identity-wise polarizations.

Gidron and Hall (2017) refer to the interaction between culture and the economy as either additive or multiplicative. In the additive form of the relationship or "culture plus economics", the low pace of cultural change enables gradual increases of conservative values, distrust, nationalist sentiments, and empowering populism, overshadowing economic factors. In the multiplicative form or "culture times economics", economic and cultural factors are cyclically codetermined: in times of cultural backlash, economic arguments become an instrument used by populist parties, and, if elected, they worsen the polarization, making the cycle re-start.

Empirical studies have analyzed both mechanisms. In support of the additive mechanism, Margalit (2019a, 2019b) found that cultural factors explain around 42 pps of the increase of votes in favor of Brexit -in the UK- and Trump -in the US-. In contrast, economic factors account only for 10 pp. On the other hand, supporting the multiplicative mechanism, Colantone and Stanig (2018), Autor et al. (2020), and Che et al. (2016) show consistent evidence for the US and Europe that, due to the "China Shock", the votes in favor anti-immigration and non-liberal values particularly grew in sectors that were highly exposed and had white majorities; making remarkable that economic shocks prompt identity conflicts which trigger populism.

iv. Exposure to new technologies

Historically, populists have taken advantage of their available technologies to spill over their beliefs. While in the USA the railway and telegraphs were used as instruments for political campaigns during the early 20th century, the Nazi party did clever use of radio later on (Adena et al., 2015; Eichengreen, 2018; Guriev & Papaioannou, 2022).

This characteristic also has remained over time. Zhuravskaya et al. (2020), on the political effects of social media in the internet era, theoretically argue that these new means are attractive for populists because they have no entry barriers, which diminishes the dependency on campaign funding from the elites and eases proximity with the electorate. This creates a sense of community where confirmatory biases are reinforced between the followers.

Guriev et al. (2021) empirically tested the effect of mobile broadband internet penetration at the intranational level in Europe. They found that the 3G expansion led to higher vote shares for populist parties. Complementarily, Allcott et al. (2020) ran a randomized controlled online experiment among US citizens around the 2018 midterm campaign. They found that deactivating Facebook accounts had a threefold significant effect: diminished political polarization, decreased political awareness, and increased subjective well-being. In sum, evidence supports the idea that new means ease the expansion of populism.

C- Methodological approach

Following the theoretical proposals of Fukuyama (2018), Norris and Inglehart (2019), and Inglehart, (2020), the cultural backlash against Post-materialist values, like the growing tolerance to outgroups and individual autonomy, could be materialized as support to populist parties. Their voting behavior is associated with left-behind groups who suffer from economic insecurity and/or with less educated sectors that hold traditional values and retro norms. These people can be seduced by political leaders with tempting resentful speeches that reinforce the narrative that they have been betrayed and disrespected, and promise to restitute their dignity.

The Costa Rican 2018 presidential elections provide a suitable pseudo-experimental framework to test the reverse silent revolution hypothesis. In this special episode in recent Latin American history, the political cleavages gravitated around polarizing topics related to human rights, which broadened the social distances between conservative and liberal sectors, both literally and figuratively.

1. Empirical model

To empirically test whether underlying societal characteristics and inequalities explain political cleavages, I propose the following district-level baseline regression, which takes into consideration the availability of existing data:

1)
$$PV_{d,2018} = \beta_0 + (\beta_1 Unemployment_{d,t} + \beta_3 Overcrowd_{d,t}) + (\beta_4 Education_{d,t} + \beta_5 Conservatism_{d,T}) + \delta Controls + \varepsilon_d$$

where $1973 < t, T \le 2018$

In the expression above, the outcome variable, PV_d , accounts for the percentage of valid votes obtained in district "d" in favor of a populist party during the 2018 elections, either PIN or PLN. The explanatory variables of interest are placed on the right-hand side. They are all computed from official censal and electorate registries from earlier years t and T, respectively. These are grouped into three families.

First, variations of political decisions could have an origin in economic phenomena; in the equation, these are approximated by the unemployment rate, as a measure of short-run junctural economic stress. I complementarily use the percentage of individuals living in overcrowded⁴ houses, which depicts longer-run intergenerational poverty.

Second, as culture matters, these characteristics are empirically captured by the local levels of education and conservatism. Education is retrieved at the upper tail as the percentage of people above 18 who have a high school diploma, and, for more meticulous assessments, as the percentage of people over 25 with a university undergraduate degree. Conservatism is partially predicted by the archival voting support to confessional parties in the near past, namely PRN -which already had competed in 2014-, "Partido Renovación Costarricence" (PRC), and "Partido Alianza Nacional Cristiana" (PANC).

Thirdly, a vector of control variables widely used by the political economy literature, such as migration rates, demographic characteristics, dependency rates, etc., are also included. I also implement regional fixed effects. Furthermore, abstentionism and voting records for mainstream and former winning parties of the 21st century are included. More explicitly, "Partido Liberación Nacional" (PLN), "Partido Unidad Social Cristiana" (PUSC), and "Partido Acción Ciudadana" (PAC).

One formal aspect of equation (1) is the latent hazard of endogeneity arises if it is simply estimated by Ordinary Least Squares (OLS). If any unobserved factor (ε_d) codetermines both the populist vote share and an explanatory variable X, then its computed coefficient would be biased and my conclusions would be invalid (Wooldridge, 2010). In my case, among other sources, endogeneity could originate as a result of not being able to fully address conservatism and/or omitting some degree of social anxiety, which was unfeasible to obtain.

To rule out this possibility and deliver unbiased causal findings, I will modify equation (1) by implementing the Instrumental Variable (IV hereafter) Method. This technique eliminates the endogeneity of an explanatory variable by estimating a "first stage" where its unbiased part is predicted using one or multiple instruments. My solution consists of jointly using a set of lagged values of unemployment, overcrowding, and education to predict that of the year 2011 –my empirical t-. Therefore, in reality, the first stage is threefold and consists of the following three equations:

2) $Unemployment_{d,2011} = \alpha_0 + \alpha_1 f (Unemployment_{d,1973-2000}) + \alpha_2 f (Overcrowd_{d,1973-2000}) + \alpha_3 f (Education_{d,1973-2000}) + \delta_1 Controls + V_1$

⁴ According to TSE's definition, a house is overcrowded if there are, on average, more four or more people per bedroom; or, alternatively, if the house has no bedrooms and there are three or more inhabitants.

- 3) $Overcrowd_{d,2011} = \mu_0 + \mu_1 f (Unemployment_{d,1973-2000}) + \mu_2 f (Overcrowd_{d,1973-2000}) + \mu_3 f (Education_{d,1973-2000}) + \delta_2 Controls + V_2$
- 4) $Education_{d,2011} = \pi_0 + \pi_1 f (Unemployment_{d,1973-2000}) + \pi_2 f (Overcrowd_{d,1973-2000}) + \pi_3 f (Education_{d,1973-2000}) + \delta_3 Controls + V_3$

This solution should fulfill two requirements for valid instruments. First, the instruments must be relevant. In my case, after estimating the threefold first stage of equations (2) to (4), it is testable whether a district's historical performance on a particular dimension $(X_{1973-2000})$ is a good predictor of its latest level (X_{2011}) . Complementarily, the other dimensions (Y and Z) could also be potential predictors of X. Intuitively, one would expect, for instance, that districts that have historically achieved low levels of unemployment and overcrowding, and high education currently enjoy low rates of overcrowded houses.

As a second requirement, the instruments must be exogenous. This is implied by the fact that the characteristics of former cohorts of voters do not directly determine current electoral outcomes, except for their influence on the characteristics of current voters. As revealed by Figure 2, Figure 3, and Figure 4, values of unemployment, overcrowding, and education⁵, respectively, of the years 2000, 1984, and 1973 seem to be graphically correlated with populist support in 2018. However, all of these correlations fade away when controlling for their most recent value, 2011. This evidence supports the existence of the explained mediatory mechanism of the instruments.

One could plausibly argue that the larger the gap selection, the more exogeneity the instruments perform. In my case, this argument translates as: unemployment, overcrowding, and education from 1973 are the most likely to deliver unbiased final parameters, as they do not correlate with any uncontrolled factor (ε_d) of expression (1) due to their antiquity. Whilst valid, this argument ignores the "compression of history". This is a concern introduced by Austin (2008), which arises when comparing two moments apart in time with so much history between them. To reconcile both arguments, I assume the following functional form for the instruments:

5)
$$f(X_{d,1973-2000}) = 0.5(X_{d,2000}) + 0.3(X_{d,1984}) + 0.2(X_{d,1973})$$

where $X \in \{Unemployment, Overcrowding, Education\}$

This solution, given by equation (5), is a simple weighted arithmetic average. The weights are strategically assigned to grant more (less) importance to the most recent (oldest) element. To be precise, the weight associated to X_i is the inverse difference between 2018 and i; where $i \in \{1973, 1984, 2000\}$.

After isolating the unbiased component of the explanatory variables of interest in the first stage, these corrected values are used to recompute the baseline equation in the "second stage". As a result of this procedure, the final estimates are reliable to a causal extent and not just correlational.

 $^{^{5}}$ <u>Figure 4</u> illustrates the relationship between populist support and education. The latter is approximated as the high school achievement per district. Alternatively, th <u>online-appendix II</u> uses universitary records.

Figure 2: PRN support and historical unemployment at the district level, per region



Figure 3: PRN support and historical overcrowding at the disctric-level, per region



Figure 4: PRN support and historical education achievements at the district-level, per region



2. Data

To disentangle the characteristics of the allegedly conservative sectors that supported the populist parties, I am taking advantage of the geographical heterogeneity captured by two major information sources: censal data obtained from INEC (Instituto Nacional de Estadística y Censos), and electoral information collected by TSE (Tribunal Supremo de Elecciones).

Both sources record their information over time and space at different geographical levels. For my study, I work at the district level, which is the most disaggregated spatial unit available across different datasets. This introduces a challenge: the territorial division of Costa Rica has constantly changed, meaning that newborn districts are segregated from older ones. Table 2 dimensions this issue. While for the 2018 elections, there were 483 districts, that number was 394 in the 1973 census, which comparatively leaves 89 observational units with electoral data but without demographical covariates.

<u>Table 2</u> : Quantity of districts in each raw data source									
	Year								
Data	2018	2014	2011	2010	2006	2002	2000	1984	1973
Census			472				456	412	394
TSE	483	478		473	470	462			

To overcome this challenge, I reconstructed districts that were consistent over time. This way, I ensured that both electoral and demographic data have a full range and are comparable. To exemplify the process, I am using the case of a district named "Purral", which only appeared on the registries since the 2000 census.

To start, I consulted the archive of the IGN (Instituto Geográfico Nacional) where I found a photographed version of the legal document that states the official creation of the district in 1991, as shown in <u>Figure 5</u>. More importantly, the third article of this document lists the quarters of the newborn district, which I outlined with color coding.

The document, however, does not allow me to identify where Purral was segregated from. Thus, I consulted the IGN maps of the current territorial division of Costa Rica, attached in <u>Figure 6</u>. By looking at the county-level map of "Goicoechea" and its inner districts, I hypothesized that Purral used to be part of Ipís, Guadalupe, Mata de Plátano, or Rancho Redondo, as it is landlocked by them.

Finally, based on the 1989 IGN's official territorial division, which is the closest to 1991 - the year when Purral was created-, I matched the quarters of the newborn districts with that its the surrounding counterparts. The process is documented in <u>Figure 7</u> using the color coding of <u>Figure 5</u>.

Figure 5: Legal creation of Purral as a district in 1991

COMISION NACIONAL DE DIVISION TERRITORIAL ADMINISTRATIVA

INSTITUTO GEOGRAFICO NACIONAL Greacion

Apartado 148 - 1001 - Tel. 27-21-88 Ext. 629 Pittito 7° 0

San José, Costa Rica

2 - LA GACETA Nº 147 - Martes 6 de agosto de 1991

Nº 20587-G

EL PRESIDENTE DE LA REPUBLICA Y EL MINISTRO DE GOBERNACION Y POLICIA,

DECRETAN:

Artículo 1º-Crear el distrito sétimo Purral, del cantón de Goicoechea, de la provincia de San José.

Artículo 2°—El distrito limita al norte con el distrito de Ipís, al este con el distrito Rancho Redondo, al sur con el distrito Mata de Plátano y al oeste con los distritos Guadalupe e Ipís, la descripción de límite, según el mapa básico de Costa Rica, escala 1:50,000, hojas topográficas Abr 3345-I e Istarú 3345-IV, es la siguiente:

Artículo 3°—Esta unidad administrativa tendrá como cabecera la Villa de Purral con los siguientes barrios: Alto (parte) Lomas de Tepevac, Castores Kurú Cuadros, Pueblo Lupita Ana Frank, Don Carlos, Flor de Liz, Nogales Violetas

As a result of this inspection, I concluded that Purral undoubtedly was segregated from Guadalupe and Ipís. This means that I had to consider "Purral+Ipís+Guadalupe" as a single observational unit to be able to track a common record since 1973. A parallel process was followed for the remaining 88 districts that were created between 1973 and 2018.





b. District map: Goicoechea's inner districts



Figure 7: Extract of Costa Ricas's official territorial division of 1989



Distrito

- ^{1°} GUADALUPE, Ciudad. Barrios: Arboles, Colonia del Río, El Alto, Fátima, Independencia, Jardín, Magnolia, Maravilla, Margarita, Minerva, Miraflores, Moreno Cañas, Orquídea, Pilar Jiménez (parte), Purral (parte) Rothe, San Gerardo, Santa Cecilia, Santa Eduvigis, Santo Cristo, Yorustí.
- 2º SAN FRANCISCO, Villa. Barrios: Carlos María Ulloa, San Francisco (centro), Tournón.
- 3" CALLE BLANCOS, Villa. Barrios: Calle Blancos (centro), Ciprés, Concretera, Esquivel, Montelimar, Pilar Jiménez (parte), Pinos, Progreso, San Antonio, San Gabriel, Santo Tomás, Volio.
- 4" MATA DE PLATANO, Villa. Barrios: Brunca, Carmen, Claraval, Cuesta Grande (parte), Dalia, Estéfana (parte), Hortencias, Lourdes, Tepeyac, Térraba. Poblado: Jaboncillal.
- 5^o IPIS, Villa. Barrios: Ana Frank, Angeles, Castores Cuadros, El Alto (parte), Korobó, Kurú, La Mora, Lomas de Tepeyac, Mozotal, Praga, Purral (parte), Purral Arriba, Rodrigo Facio, Santa Clara (parte).
- 6^o RANCHO REDONDO, Villa. Poblados: Guayabillos, Isla, San Miguel, Vista de Mar.

My final data is composed of 391 comparable-over-time districts. As seen in <u>Table 3</u>, they have an average size of 131 km² that varies between 600 m² and 2,389 km². Demographically, over the course of 38 years, the country experienced population growth, which increased the population density from 1,833 inhabitants per km² in 1973, to 2,246 in 2011. During this period, the country's high school completion by age 18 grew by 26 percentual points, whereas unemployment and overcrowding diminished by 4 and 23 percentual points, respectively.

<u>Table 3</u> : Demographic cha	aracteristics over	time in Costa R	lica		
37 - 11		Censal g	year		
Variable	2011	2000	1984	1973	
Number of districts	391	391	391	391	
Area (km ²)					
Country's total	$51,\!171$	$51,\!171$	$51,\!171$	$51,\!171$	
districts' mean	131	131	131	131	
districts' (min; max)	(0.6; 2,389)	(0.6; 2,389)	(0.6; 2,389)	(0.6; 2,389)	
Population					
Country's total	$4,\!301,\!712$	$3,\!810,\!179$	$2,\!416,\!809$	$1,\!871,\!780$	
districts' mean	11,030	9,768	$6,\!196$	4,799	
districts' (min; max)	(273; 94, 415)	(295; 89, 993)	(222; 52,602)	(255; 40, 830)	
Population density (inhabitants per km ²)					
mean*	2,246	$2,\!429$	2,050	1,833	
districts' (min; max)	(3; 11,559)	(3; 12, 563)	(1; 12,022)	(1; 12,063)	
Education					
% of people over 18 with a high school diploma					
mean*	36	44	21	10	
districts' (min; max)	(3; 86)	(3; 84)	(0; 64)	(0; 52)	
% of people over 25 with an undergraduate degree					
mean*	15	14	5	4	
districts' (min; max)	(0; 62)	(0; 62)	(0; 33)	(0; 23)	
Economic factors					
% of unemployment					
mean*	3	5	7	7	
districts' (min; max)	(1; 9)	(0; 17)	(0; 25)	(0; 24)	
% of people living in overcrowded houses					
mean*	5	8	15	28	
districts' (min; max)	(0; 20)	(0; 40)	(0; 53)	(1; 74)	

The data also accounts for the democratic memoir of the 21^{st} -century presidential elections, which take place every four years. This is summarized in <u>Table 4</u>. Between 2002 and 2018, the abstentionism steadily stayed at a 33-36 rate. As of 2018, one PUSC government (2002), and two PLN (2006, 2010) and PAC (2014, 2018) won the elections. Yet, only PLN has managed to get elected in the first voting round.

Interestingly, 2018 was an inflection point for conservative or "confessional" parties. Before that, their support barely summed up 1%, but that rate escalated to 26 in that last year. Empirically, this is indicative of the sudden outbreak of a reverse silent revolution, as proposed by Inglehart (2020).

<u>Table 4</u> : Electoral characteristics over time in Costa Rica							
Variable			Election year				
variable	2018	2014	2010	2006	2002		
Number of districts	391	391	391	391	391		
Electorate							
Country's total	$3,\!290,\!465$	$3,\!065,\!667$	2,822,491	$2,\!550,\!613$	2,279,851		
districts' mean	$8,\!437$	7,861	7,237	6,540	5,846		
districts' (min; max)	(179; 68, 866)	(156; 64, 961)	(153; 61, 180)	(159; 57, 214)	(141; 51, 677)		
Asbtencionism (%)							
Country's total	34	33	32	36	33		
districts' mean	34	33	32	36	32		
districts' (min; max)	(17; 56)	(15; 53)	(14; 60)	(15; 63)	(12, 54)		
Voting support to mainstream parties (%)							
PUSC	16	6	4	4	39**		
districts' (min; max)	(0; 37)	(0; 20)	(0; 15)	(0; 28)	(17; 61)		
PLN	18	30	47^{*}	41*	31		
districts' (min; max)	(0; 47)	(20; 65)	(29; 70)	(27; 73)	(19; 66)		
PAC	21**	30**	25	39	26		
districts' (min; max)	(4; 100)	(3; 49)	(5; 51)	(13; 61)	(2; 46)		
Voting support to confessional parties (%)							
PRN	25	1					
districts' (min; max)	(0; 54)	(0; 6)					
PRC	1	1	1	1	1		
districts' (min; max)	(0; 2)	(0; 12)	(0; 6)	(0; 9)	(0; 9)		
PANC					0		
districts' (min; max)					(0; 1)		
* This party won the presidential elections in	the first voting	round					

**This party won the presidential elections in the second voting round.

Results D-

In all of the models in this section, I consistently use four outcome variables to estimate the baseline equation (1) explained in Section C-. On the one hand, I revisit 2018's first electoral round by analyzing the determinants of radical right populism, to a broad extent, as the summation of PRN and PIN share of valid votes. To disentangle its nuances, previously defined in <u>Table 1</u>, I then split that into its two individual components. On the other hand, for the second voting round, I chose PRN electoral support. Out of the four outcomes, the latter is expected to deliver more clear-cut insights on political cleavages, as the voters'

decision boiled down to a binary one, which eases controlling for many unobserved stimuli potentially present in the first round.

As a benchmark for further more elaborate models, <u>Table 5</u> presents the OLS results. According to these estimates, education had no role in populist voting, except for the second round where a 1 pp increase in the second round, high school⁶ completion in 2011 barely increased PRN support by 0.14 pps in 2018. There is unclear evidence about the effect of unemployment, as it had a small positive effect, but just through PRN support in the first round. Regarding overcrowding, it modestly increased conservative voting.

The regional fixed effects of <u>Table 5</u> reveal that, compared to the Central –most developedregion, the periphery was most likely to support radical right populists in the first round, but that pattern changed afterward. In the second round, regionalism did not matter, except in Chorotega where the likelihood of supporting PRN was significantly smaller than elsewhere.

Table 5: OLS regression results					
	Depende	ent variable p	er 2018 votin	ig round	
		Second			
Explanatory variables	PRN+PIN	PIN $\%$ of	PRN $\%$	PRN $\%$	
	% of votes	votes	of votes	of votes	
% of people over 18 with a high school					
diploma in 2011	0.00	-0.01	0.01	0.14^{***}	
	(0.05)	(0.02)	(0.05)	(0.03)	
Unemployment rate in 2011	0.59^{**}	-0.05	0.65^{**}	0.00	
	(0.27)	(0.13)	(0.28)	(0.18)	
% of overcrowded individuals in 2011	0.53^{***}	0.15^{*}	0.38^{**}	0.38***	
	(0.18)	(0.09)	(0.18)	(0.13)	
Region					
Chorotega	3.25^{**}	2.31***	0.94	-3.28***	
	(1.32)	(0.62)	(1.33)	(0.87)	
Pacífico Central	7.63^{***}	1.28^{**}	6.35^{***}	0.46	
	(1.36)	(0.64)	(1.37)	(0.93)	
Brunca	3.73**	0.67	3.07^{*}	0.13	
	(1.82)	(0.85)	(1.84)	(1.30)	
Huetar Caribe	5.00**	-1.33	6.33***	1.36	
	(1.93)	(0.90)	(1.94)	(1.29)	
Huetar Norte	10.06***	0.57	9.49***	0.23	
	(1.45)	(0.68)	(1.46)	(1.02)	
Historical support to confessional parties					
PRN $\%$ of votes, first round in 2018				0.87***	
				(0.05)	

 $^{^{6}}$ Alternatively, <u>online-appendix III</u> has the results obtained when using universitary completion at age 25 as the education indicator. The conclusions are equal as misleading.

<u>Table 5</u> : OLS regression results					
	Depende	ent variable p	er 2018 voti	ng round	
		First		Second	
Explanatory variables	PRN+PIN	PIN $\%$ of	PRN $\%$	PRN $\%$	
	% of votes	votes	of votes	of votes	
PRN $\%$ of votes, first round in 2014	2.30***	-0.29*	2.60^{***}	-0.45*	
	(0.35)	(0.17)	(0.36)	(0.25)	
PRC $\%$ of votes, first round 2014	1.13^{***}	-0.08	1.20^{***}	0.19	
	(0.37)	(0.17)	(0.37)	(0.24)	
PRC $\%$ of votes, first round 2010	-0.51	0.02	-0.52	-0.57	
	(0.56)	(0.26)	(0.56)	(0.37)	
PRC $\%$ of votes, first round 2006	0.77^{**}	-0.49***	1.26^{***}	0.24	
	(0.35)	(0.17)	(0.36)	(0.24)	
PRC $\%$ of votes, first round 2002	0.08	-0.16	0.24	0.74^{**}	
	(0.46)	(0.21)	(0.46)	(0.30)	
ANC $\%$ of votes, first round 2002	4.84^{*}	2.10	2.74	-0.75	
	(2.72)	(1.27)	(2.73)	(1.80)	
Constant	39.66	43.34***	-3.68	-1.90	
	(25.56)	(11.98)	(25.74)	(17.52)	
Observations	390	390	390	390	
R-squared	0.79	0.29	0.78	0.95	

Standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1

All the above regressions further control for migration rate, % of women, dependency rate, % of elders, abstentionism, and the historical voting support to mainstream parties (PAC, PLAN, and PUSC).

Nevertheless, those OLS coefficients should be interpreted conservatively because, as discussed in Section C-, they are highly endogenous and, thus, invalid. Contrastingly, when implementing the IV identification strategy of equations (1)-(5), with successful relevant instruments (see the first stage in <u>online-appendix IV</u>), I obtained the second-stage results of <u>Table 6</u>. These lean more toward my initial hypothesis.

Accordingly, higher levels of education in 2011 are uncorrelated to any measure of conservative voting in 2018⁷, this finding is revisited later in this Section. Moreover, high district-level unemployment rates in 2011 caused an increase in the vote share for that party, the effect is rather sizable for PRN in either of the rounds. Likewise, overcrowding is a consistent predictor of PRN support, but with a smaller scope than unemployment.

⁷ This result remains true when measuring education with university records. See <u>online-appendix V</u> for further details and its corresponding first stage in <u>online-appendix VI</u>.

<u>Table 6</u> : IV regression results						
	Depende	nt variable _l	per 2018 voti	ng round		
Euplanatowy waniables		First		Second		
Explanatory variables	PRN+PIN	PIN $\%$	PRN $\%$	PRN $\%$		
	% of votes	of votes	of votes	of votes		
% of people over 18 with a high school diploma in 2011	-0.05	0.00	-0.05	0.08		
	(0.05)	(0.02)	(0.05)	(0.05)		
Unemployment rate in 2011	4.46***	0.82^{*}	3.64^{***}	2.31**		
	(1.08)	(0.42)	(1.02)	(1.13)		
% of overcrowded individuals in 2011	1.01^{***}	0.10	0.90^{***}	1.48^{***}		
	(0.27)	(0.10)	(0.25)	(0.28)		
Region						
Chorotega	1.29	1.62^{**}	-0.33	-1.18		
	(1.66)	(0.64)	(1.56)	(1.73)		
Pacífico Central	9.27***	1.44**	7.83***	8.51***		
	(1.79)	(0.69)	(1.69)	(1.87)		
Brunca	6.81^{***}	0.10	6.71^{***}	12.10^{***}		
	(1.87)	(0.72)	(1.76)	(1.94)		
Huetar Caribe	6.79***	-1.26	8.05***	12.21^{***}		
	(2.30)	(0.89)	(2.17)	(2.40)		
Huetar Norte	10.77^{***}	-0.04	10.81^{***}	13.54^{***}		
	(1.71)	(0.66)	(1.61)	(1.79)		
Historical support to confessional parties						
PRN $\%$ of votes, first round in 2014	2.36^{***}	-0.27	2.63^{***}	2.11***		
	(0.49)	(0.19)	(0.46)	(0.51)		
PRC $\%$ of votes, first round 2014	0.71	0.00	0.71	0.84^{*}		
	(0.47)	(0.18)	(0.44)	(0.49)		
PRC $\%$ of votes, first round 2010	0.03	0.11	-0.08	-1.07		
	(0.70)	(0.27)	(0.65)	(0.72)		
PRC $\%$ of votes, first round 2006	0.60	-0.51^{***}	1.12^{***}	1.51^{***}		
	(0.42)	(0.16)	(0.39)	(0.43)		
PRC $\%$ of votes, first round 2002	0.58	0.10	0.48	0.81^{*}		
	(0.41)	(0.16)	(0.39)	(0.43)		
ANC $\%$ of votes, first round 2002	2.10	0.90	1.21	1.17		
	(3.37)	(1.31)	(3.18)	(3.51)		
Constant	37.66**	15.73**	21.93	28.94*		
	(16.57)	(6.41)	(15.59)	(17.25)		
Observations	390	390	390	390		
R-squared	0.63	0.13	0.65	0.76		

Standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1

All the above regressions further control for migration rate, % of women, and the historical voting support to mainstream winning parties (PAC, PLAN, and PUSC).

One special feature of this regression's estimates is that, in addition to instrumentalization, the endogeneity is partially coped by controlling for the support of confessional parties in past elections, which works as a proxy of conservatism. The final rows of <u>Table 6</u> display those coefficients. PRN support in 2018 is positively associated with its support in 2014, although the party only achieved 1% of the national votes (see <u>Table 4</u>). It is also strongly related to PRC support in the 2006 elections. The results are inconclusive for PIN.

Aside from the educational and economic effects, unlike Chorotgea, the remaining periphery of Costa Rica had a significantly higher likelihood of supporting the anti-human rights party than the Central region. The effect is especially high in eastern and northern Costa Rica, in the Huetar Atlántica, Huetar Norte, and Brunca regions.

An intuitive concern one could raise in regard to the above results is the non-significance of education on conservative voting. While theoretically challenging previous literature like Fukuyama (2018), Norris and Inglehart (2019), and Inglehart (2020), my inconclusive results could be undermined by simultaneously controlling for human capital and economic factors. Put another way, the effect of unemployment and overcrowding may be overshadowing that of education, yet those three things are correlated.

To approach this issue, I propose implementing a mediator mechanism in the form of an "augmented" IV. This means using full educative records as extra instruments to predict the economic determinants of populist support. More explicitly, this technique implies altering the threefold first stage of equations (2)-(4) to the following twofold one:

- 6) $Unemployment_{d,2011} = \alpha_0 + \alpha_1 f (Unemployment_{d,1973-2000}) + \alpha_2 f (Overcrowd_{d,1973-2000}) + \alpha_3 f (Education_{d,1973-2011}) + \delta_1 Controls + V_1$
- 7) $Overcrowd_{d,2011} = \mu_0 + \mu_1 f (Unemployment_{d,1973-2000}) + \mu_2 f (Overcrowd_{d,1973-2000}) + \mu_3 f (Education_{d,1973-2011}) + \delta_2 Controls + V_2$

As noted in the expressions above, there is a contemporaneous effect of education on both unemployment and overcrowding, which is accounted for by α_3 and μ_3 , respectively. If district-level average education records were used, then this assumption would be rather questionable. Instead, I use upper-tail educative indices that easily translate into higher employability. Particularly, I jointly include records of high school and university completion rates at corresponding ages 18 and 25 in the following functional form:

8) $f(Education_{d,1973-2011}) = [0.57(HSchool_{d,2011}) + 0.22(HSchool_{d,2000}) + 0.12(HSchool_{d,1984}) + 0.09(HSchool_{d,1973})] + \{0.57(Undergrad_{d,2011}) + 0.22(Undergrad_{d,2000}) + 0.12(Undergrad_{d,1984}) + 0.09(Undergrad_{d,1973})\}$

These education mediators are consistently estimated by assigning higher importance to the most recent elements (recall equation (5)). They are expected to be significant predictors of economic measures. The augmented first stage confirms it, see <u>Table 7</u>. Whilst high school completion seems to slightly increase unemployment and overcrowding, that impact is surpassed by the negative effect of undergraduate rates. This behavior might historically reveal a non-linear effect of human capital on income in Costa Rica, especially that high school diplomas are not sufficient to economically succeed in the country. Anyhow, the aftermath is that education has an overall negative effect on poverty, measured either way.

Table 7: Augmented first stage, the historical mediator effect of education						
	Instrumented variables					
Instruments	Unemployment rate	% of overcrowded				
	in 2011	individuals in 2011				
0.57(HSchool 2011)+ 0.22 (HSchool 2000)+ 0.12 (HSchool 1984)+ 0.09 (HSchool 1973)	0.04**	0.08***				
	(0.02)	(0.02)				
0.57(Undergrad 2011)+0.22(Undergrad 2000)+0.12(Undergrad 84)+0.09(Undergrad 73)	-0.06***	-0.18***				
, , _ , , _ ,	(0.02)	(0.03)				
0.5(Unemployment 2000)+0.3(Unemployment 1984)+0.2(Unemployment 1973)	0.14***	0.16^{***}				
	(0.03)	(0.04)				
0.5(Overcrowd 2000)+0.3(Overcrowd 1984)+0.2(Overcrowd 1973)	-0.01	0.28***				
	(0.01)	(0.02)				
Constant	-3.43	-6.51*				
	(2.48)	(3.48)				
Observations	390	390				
R-squared	0.33	0.81				

Standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1

All of the above first-stage regressions are further controlled by regional fixed effects, migration, % of women, and voting records of confessional and mainstream winning parties.

After mediating the historical effect of education on unemployment and overcrowding to further isolate their exogenous component, these cleaner versions of the predictors are used to explain populist radical right support. The results are shown in <u>Table 8</u>. Both economic insecurity measures maintain their sign and significance. Comparably, on average, these new intrumented estimates are marginally higher than the non-augmented counterparts, which is indicative of slight reminisces of uncontrolled endogeneity in earlier computations.

Table 8: Aumnegated IV regression results: the historical mediator effect of education						
	Dependent variable per 2018 voting round					
Employatom variables		First				
Explanatory variables	PRN+PIN	PIN $\%$ of	PRN $\%$	PRN $\%$		
	% of votes	votes	of votes	of votes		
Unemployment rate in 2011	4.81***	0.97^{**}	3.84^{***}	2.35**		
	(1.04)	(0.39)	(0.96)	(1.04)		
% of overcrowded individuals in 2011	1.19^{***}	0.12	1.07^{***}	1.26^{***}		
	(0.26)	(0.10)	(0.24)	(0.26)		
Constant	50.69^{***}	16.53^{***}	34.16^{**}	12.79		
	(14.66)	(5.55)	(13.60)	(14.62)		
Observations	390	390	390	390		
R-squared	0.60	0.10	0.64	0.77		

Standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1

All the above regressions further control for migration rate, % of women, and the historical voting support to confessional parties (PRN, PRN, and PANC) and mainstream winning parties (PAC, PLAN, and PUSC).

E- Robustness check

Briefly, my augmented IV findings suggest, in the first place, that districts with historically higher upper-tail levels of education, and low unemployment and overcrowding rates had lower poverty measures in 2011. In the second place, economic stress in 2011 caused higher PRN support in 2018. Thus, history, education, and economic factors partly shaped voting behavior at that juncture.

For these results to be robust, my methodology should deliver consistent findings regardless of which data is used, otherwise, my conclusions could be proved wrong. To examine my findings under a magnifying glass, in this section, I take advantage of the "post-electoral" survey, provided by Alfaro-Redondo (2021), to implement an analogous IV approach.

Poselectoral surveys have systematically been collected since 2002 by research centers at Universidad de Costa Rica⁸ and the country's supreme electoral agency⁹. In particular, the data from the 2018 survey was collected by conducting 1500 face-to-face interviews with potential voters in their houses. They took place between November and December of that year, months after the elections. The final sample is representative at a national scale as they used a sampling frame based on the latest census.

⁸ Currently is managed by Centro de Investiación y Estudios Políticos (CIEP).

⁹ Tribunal Supremo de Elecciones (TSE).

<u>Table 9</u> displays some demographics that are later included in the inferential analysis. As outcome variables, I use two objective and subjective measures, all related to PRN support. Subjectively, on a scale from 1 to 5 people were asked how close they felt to PRN, 21% confessed being close or very close; then they were told to select which of the 2018 parties they still sympathized with, and 9% answered PRN. Objectively, they revealed who they voted for. Out of the valid votes, 31% and 37% voted PRN in the first and second rounds, correspondingly.

<u>Table 9</u> : Descriptive statistics of the regression variables					
			Indicator		
variable	Obs	Mean	Std. Dev.	Min	Max
Outcome variables					
Closeness to RN (1=close or very close)	1467	21%	41%	0	1
Sympathizes with RN months after the election $(1=yes)$	1500	9%	29%	0	1
Voted RN in 2018's first round (1=yes) –non-voters excluded-	1135	31%	46%	0	1
Voted RN in 2018's second round (1=yes) –non-voters excluded-	1061	37%	48%	0	1
Income measures					
Subjective income (1=enough or more income)	1484	55%	50%	0	1
Objective income (% of owned appliances*)	1500	54%	22%	0	1
Unemployed $(=1 \text{ unemployed})$	1500	7%	25%	0	1
Income level measure ^{**}	1484	68	20	0	100
Human capital					
Years of education	1491	8.7	4.0	0	16
Years of education of the household head	672	8.6	4.1	0	16
Max of the above	1491	9.4	4.1	0	16
Demographic features					
Age in years	1500	43.5	17.3	18	92
Age squared	1500	2190.2	1658.1	324	8464
Region					
Central	1500	63%	48%	0	1
Chorotega	1500	8%	27%	0	1
Pacífico Central	1500	6%	23%	0	1
Brunca	1500	7%	26%	0	1
Huetar Caribe	1500	9%	28%	0	1
Huetar Norte	1500	7%	26%	0	1
Conservatism					
Participated in a religious group during the last 5 years	1498	44%	50%	0	1
Degree of trust in the catholic church	1486	5.7	3.5	0	10

* Out of a list that includes 8 possible items per household, namely: microwave, phone, cellphone, TV (plasma, LCR, or LED), car, laptop, and desktop computer.

** Income level measure = 0.19(Subjective income) + 0.43(Objective income) - 0.38(Unemployment), then rescaled to the [0,100] interval. The weights are based on each variable's inverse standard deviation.

As the main explanatory variable, I use an income measure that is constructed out of three indicators. First, respondents were asked to evaluate their household income within the 0(serious difficulties) to 5(more than enough) gradient. I call this "subjective income", 55% of the sample reported enough or more income. Second, out of a group of 8 appliances¹⁰, people listed the ones they owned. As an objective income measure, I use the percentage of amenities they have; on average, people own 54% of them. Lastly, I also consider unemployment; 7% reported this condition.

My income measure for an individual i is firstly parametrized as follows:

9) $income_i = 0.19(Subjective Income_i) + 0.43(Objetive Income_i) - 0.38(Unemployment_i)$

As unemployment is a binary variable, a positive status means a penalty in the income measure. The weights used in equation (9) correspond to the inverse standard deviation of the global indicators, which allows assigning a higher (lower) importance to the most (un)equal component. This index is then rescaled to the [0,100] interval. The income measure for a representative surveyed individual is 68, but the measure has great variation; Figure 8 shows the sample distribution of this variable.



One could question how arbitrary this measure is. More importantly, a measurement error in a dependent variable could translate into endogeneity. To overcome this possibility, I instrumentalize the income index with the maximum value of either an individual's years of

 $^{^{\}rm 10}$ List of appliances: microwave, phone, cellphone, TV (plasma, LCR, or LED), car, laptop, and desktop computer.

education or that of their household head¹¹. The sample average of the instrument is 9.4 years of schooling.

This instrument seeks to approximate an individual's most immediate cultural environment, its home. In case a voter, for instance, is not over with high school, but their household head has already completed university, then the instrument takes the value of 16 years of schooling. One expects that the latter's education level influences the former's economy, while synchronically this economic status explains voting behavior.

A further concern about the instrument is whether or not is exogenous, in particular, conservatism could be codetermining populist voting and education. Nonetheless, in the IV approach, I control for two measures of conservatism. Individuals were asked if they participated in a religious group during the last five years; 44% did. Besides, within the 0-10 range people reported the degree of trust in the catholic church; 5.7 is the mean score.

Moreover, I control for age, regional fixed effects, and conservatism. I also include four vectors of variables that account for living standards, position on some political and economic affairs, environmental voting influences, and party-specific variables¹².

As all of my dependent variables are dummies, I chose the IV-probit model. Otherwise, an instrumented linear probability model is expected to generate heteroskedastic errors (Wooldridge, 2010). The marginal effects, evaluated at mean values, are presented in <u>Table 10</u>. It is worth noticing that the maximum household education fulfills being a relevant instrument in the first stage. Holding other factors constant, one additional year of education increases the income score by 1.54.

The second stage shows that supporting radical populist right, subjectively and objectively, is linked to poorer socioeconomic status. On average, each additional point in the 0-100 economic index reduced the probability of voting PRN by 3.8 percentual points in the second round. Compared to the non-instrumented IV results (reported in <u>online-appendix VIII</u>), these are sizable, which indicates the presence of endogeneity.

The regional fixed effects do not seem to matter. This differs from the district-level outcomes, but it is an expected behavior given that geography should shape districts' voting to a greater extent than in smaller-scaler units like quarters, families, or individuals. Besides, conservatism did play a role in two separate directions. Catholic trust is negatively associated with PRN support, while the residual effect of the other religions is highly related to it. This

¹¹ Household head is defined as the person who fulfulls two demands. One, they economically contribute the household's income. Two, they live in that household.

 $^{^{12}}$ See <u>online-appendix VII</u> for specific details.

insight is consistent with previous literature like Pignataro and Treminio (2019), Rodríguez et al. (2019), and Alfaro-Redondo (2021).

Globally, the robustness check provides confirmatory evidence in favor of my initial hypothesis. Economic anxiety, mediated by lower educative accomplishments, caused anti-human rights support in Costa Rica's 2018 elections.

Table 1	<u>0</u> : Marginal effec	ts, at means,	of the IV probit reg	ression	
			Dependent variable		
-	First stage		Second	l stage	
Explanatory variables	Income level measure	Closeness to PRN	Sympathizes with PRN months after the elections	Voted PRN in 2018's first round	Voted PRN in 2018's second round
Instrument: max(education, education of household head)	1.544***				
	(0.124)				
Income level measure		-0.022***	-0.029***	-0.036***	-0.038***
		(0.006)	(0.006)	(0.005)	(0.005)
Age in years	-0.121	-0.007	0.041^{**}	-0.015	-0.015
	(0.162)	(0.014)	(0.020)	(0.016)	(0.016)
Age squared	0.001	-0.000	-0.000**	-0.000	0.000
	(0.002)	(0.000)	(0.000)	(0.000)	(0.000)
Region					
Chorotega	-4.947***	-0.025	-0.158	-0.348**	-0.113
	(1.701)	(0.148)	(0.180)	(0.165)	(0.163)
Pacífico Central	-2.378	0.526^{***}	0.168	0.459^{***}	0.299
	(2.011)	(0.155)	(0.188)	(0.171)	(0.187)
Brunca	-6.622***	-0.394**	-0.263	-0.190	-0.113
	(1.850)	(0.173)	(0.193)	(0.172)	(0.176)
Huetar Caribe	-9.289***	0.136	0.029	0.186	0.278
	(1.728)	(0.154)	(0.178)	(0.170)	(0.181)
Huetar Norte	-5.298***	0.005	-0.009	0.054	-0.005
	(1.831)	(0.156)	(0.181)	(0.171)	(0.164)
Conservatism				· · · · ·	
Participated in a religious group during the last 5 years	-1.381	0.419***	0.381***	0.297***	0.397***
	(0.945)	(0.082)	(0.101)	(0.090)	(0.092)
Degree of trust in the catholic church	0.087	-0.048***	-0.039***	-0.054***	-0.060***
	(0.139)	(0.012)	(0.014)	(0.013)	(0.013)
Observations	1,451	1,424	1,451	1,104	1,036
Excludes non-voters	/	No	No	Yes	Yes
Fixed effects					
Living standard	Yes	Yes	Yes	Yes	Yes
Position on junctures	Yes	Yes	Yes	Yes	Yes
Environmental influences	Yes	Yes	Yes	Yes	Yes
Party-specific variables	Yes	Yes	Yes	Yes	Yes

Standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1

F- Conclusions

In this research, I revisit the Costa Rican 2018 elections. This is a special episode in Latin American recent history where disagreements on human rights, in the light of same-sex marriage approval, overshadowed pure economic discussions during the electoral campaign. This eased polarization among conservatives and liberals; the center and the periphery; the elite and the neglected; and the upper decile and the unprivileged. This framework represents an opportunity to analyze political cleavages by disentangling the extent to which they are rooted in the interaction among history, economic stress, identity, status, and culture.

To analyze the determinants of radical populist voting in 2018 Costa Rica, I built my own data, which combines historical electoral outcomes at the district level with demographical and socioeconomic information retrieved from the 1973, 1984, 2000, and 2011 national censuses. This data structure is suitable for implementing an instrumental variable approach. With this method, I take advantage of the historical records of school completion, unemployment, and overcrowding to predict exogenous values of those covariates. and then I use these "clean" versions to causally predict conservative support.

I find that district-level economic anxiety, mediated by history and low educative achievements, caused increases in PRN vote share in 2018. These results are robust to an alteration in the scope to which the data is disaggregated. When shifting to individual-level electoral information collected from a post-electoral survey with national representativity, the methodology delivers confirmatory evidence supporting my hypothesis.

My inquiry is motivated by the conviction that human rights should be prioritized in political agendas and that they are key determinants for a transition to sustained future development. However, the short-term backlash against this view, manifested in conservative voting, emerges as a result of longer-run economic insecurity and ignorance. My findings contribute to a broader body of literature that, as a whole, suggests that further empathetic efforts to understand and raise awareness of the characteristics and vulnerability of those in the conservative resistance are needed to prevent a reverse Silent Revolution. Unless offset by appropriate measures, the advancement of radical right populism threatens to undermine our democracies and the obtained progressive cultural changes.

G- References

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