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# Fear and Deprivation in Trump's America: A Regional Analysis of Voting Behavior in the 2016 and 2020 U.S. Presidential Elections

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## Abstract

Since Trump was elected U.S. President in 2016, researchers have sought to explain his support, with some focusing on structural factors (e.g., economics) and others focusing on psychological factors (e.g., negative emotions). We integrate these perspectives in a regional analysis of 18+ structural variables capturing economic, demographic, and health factors as well as the aggregated neuroticism scores of 3+ million individuals. Results revealed that regions that voted for Trump in 2016 and 2020 had high levels of neuroticism and economic deprivation. Regions that voted for Trump also had high anti-Black implicit bias and low ethnic diversity, though Trump made gains in ethnically diverse regions in 2020. Trump's voter base differed from the voter base of more traditional Republican candidates and Democrat Bernie Sanders. In sum, structural and psychological factors both explain Trump's unique authoritarian appeal.

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## Keywords

voting behavior, Donald Trump, regional personality, neuroticism, economic disadvantage, diversity, threat, authoritarianism

## Non-Technical Summary

**What is the study's background?**

Regions differ on many important psychological, economic, demographic, and health-related dimensions. Investigating these dimensions can inform our understanding of the nature of regional differences and their implications for consequential political behaviors like voting.

**Why was this study done?**

We analyzed characteristics of more than 2,080 counties to see whether support for Donald Trump in the 2016 and 2020 U.S. presidential elections was concentrated in certain kinds of regions. Importantly, we considered a wide array of psychological and structural factors, which have typically been examined independently in the voting literature. In doing so, we provide a multi-faceted portrait of the roots of regional Trump support and how his voter base differs from that of other Republican and Democratic candidates.

**What did the researchers find?**

Our analyses uncover four central findings. The first is that regions high on neuroticism—whose populations are more prone to experiencing negative emotions, like fear and anxiety—were more likely to vote for Trump. The robustness of this finding reveals a strong emotional basis for Trump support and suggests that enduring aspects of personality explain voting behavior beyond the effects of other factors.

The second major finding is that economically deprived regions were more likely to vote for Trump. These economically deprived regions were characterized by low college attainment, low income, high levels of manufacturing and agriculture, etc. However, the economically deprived regions voting for Trump were not the very poorest regions in the U.S. The very poorest regions tended to be ethnically diverse and voted for the Democratic presidential candidates (i.e., Clinton in 2016 and Biden in 2020).

Our third major finding is that Trump-supporting regions had low levels of ethnic diversity and high levels of anti-Black implicit bias. This finding shows that purely economic accounts of Trump support that do not take race and racism into account are incomplete. Interestingly, however, Trump gained more support in ethnically diverse regions over time. He performed better in ethnically diverse regions in 2020 than he did in 2016, even though ethnically diverse regions still preferred Democratic candidates overall. Trump's performance also improved in other kinds of regions, like regions with poor health. He made gains in these regions in 2016 and 2020, even though regions with poor health still preferred Democratic candidates overall.

Our last major set of findings concerns important differences between Trump's voter base and the voter base of other Republican and Democratic candidates. Trump made

gains in 2016 over Republican presidential candidate Mitt Romney's performance in 2012 in regions high on neuroticism and economic deprivation, and low on ethnic diversity, showing Trump's unique appeal in these regions. There was some overlap in the characteristics of regions that voted for Trump and those that voted for rival Republican primary candidate Ted Cruz and Democratic primary candidate Bernie Sanders. However, there was no overlap between the characteristics of regions that voted for Trump and those that voted for more traditional Republican primary candidates like John Kasich and Marco Rubio. Thus, Trump seemed to have a unique authoritarian appeal unshared by most of his rivals, a view that is bolstered by additional evidence that regions that voted for Trump tended to score high on measures of right-wing authoritarianism.

**What do these findings mean?**

In sum, the tendency to experience negative emotionality (i.e., neuroticism) and the objective economic, demographic, and health conditions of one's environment are jointly associated with voting behavior in nuanced ways. The more general picture, however, is that fear and deprivation characterize Trump's America.

## Relevance Statement

We shed light on the psychological and structural roots of Donald Trump's unique authoritarian appeal in a large-scale regional analysis of voting behavior in 2016 and 2020, highlighting the importance of personality, economics, ethnic diversity, and health.

## Key Insights

- More neurotic regions voted for Trump in 2016 and 2020.
- Economically deprived regions voted for Trump in 2016 and 2020.
- Low ethnic diversity and high implicit bias predicted Trump voting.
- Trump's voter base differed from that of other candidates.
- Psychological and structural factors are both related to Trump voting.

Since Donald Trump's election as U.S. President in 2016, researchers have sought to understand the roots of his support. This interest stems in part from perceptions that Trump is both a symptom and cause of democratic decline. Since Trump's election, the most respected reports on democratic performance have all documented signs of democratic erosion in the U.S. In 2016, The Economist Group demoted the United States from the category of "full democracy" to "flawed democracy" (Haynie, 2017). A Bright Line Watch survey of more than a thousand political scientists showed that they believe democratic principles to be on "sharp decline under the Trump administration" (Carey et al., 2019, p. 701).[1] The Varieties of Democracy project—which catalogues countries' performance on more than 400 democratic indicators (Coppedge et al., 2011)—no longer

ranks the United States in the top 10% of liberal democracies, "in part as a consequence of President Trump's repeated attacks on the media, opposition politicians, and the substantial weakening of… checks and balances on executive power" (Alizada et al., 2021, p. 38). Trump's rise in the United States is part of a broader recent trend around the world, wherein citizens vote in large numbers for leaders who display authoritarian tendencies (Haggard & Kaufman, 2021; Levitsky & Ziblatt, 2018; Maerz et al., 2020; Schenkkan & Repucci, 2019).

If the appeal of authoritarian leaders is on the rise, then it makes sense to turn to theories of authoritarianism for an explanation. Foundational and modern theories of authoritarianism contend that leaders like Trump win support from people experiencing feelings of threat (Adorno et al., 1950; Altemeyer, 1998; Duckitt & Fisher, 2003; Fromm, 1941; Jost et al., 2003). According to this view, such people are particularly susceptible to appeals from authoritarian leaders who speak to their fears and promise to eradicate threats. Feelings of threat can come from both external sources (e.g., economic, demographic conditions) and internal sources (e.g., psychological dispositions). We turn first to external sources of threat.

Many studies have found evidence, including causal evidence, for the role of economic threat on authoritarian support. Regions that experienced more automation and trade competition with China were more likely than other regions to vote for Trump in 2016, to vote for far-right parties in Europe, and to have authoritarian values (Anelli, Colantone, & Stanig, 2021; Autor et al., 2020; Ballard-Rosa et al., 2018; Ballard-Rosa et al., 2021; Frey, Berger, & Chen, 2018; Im et al., 2019). Economic threats were especially likely to increase support for Trump in majority-white regions (Autor et al., 2020) and also to increase negative sentiments against immigrants (Gamez-Djokic & Waytz, 2020). Other research has similarly found that support from the white working class was crucial to securing Trump's victory (Grimmer & Marble, 2019; Morgan & Lee, 2018, 2019; Zingher, 2020).

These findings suggest that Trump's popularity is not just a matter of economics; his popularity is caused by perceived threats to white people's status in an increasingly ethnically diverse United States (Knowles & Tropp, 2018; Major, Blodorn, & Major Blascovich, 2018; Mutz, 2018). When people lose status, they engage in more extreme political strategies to assert their group's dominance (Petersen, Osmundsen, & Bor, 2021). For instance, concerns about the political power of immigrants, African Americans, and Latinos strongly predicted Republicans' endorsement of anti-democratic norms (Bartels,

1) This report also shows that Trump supporters and detractors make different evaluations of American democratic performance. Moreover, the public's views of American democratic performance diverge when it comes to which democratic principles are under threat. For instance, a majority of experts believe that American elections are free of pervasive fraud, but this view is not shared by the majority of the public (Carey et al., 2019).

2020). Similarly, people who scored high on group-based dominance were more likely to support Trump (Womick et al., 2019).

Whites' declining status is also evident in their declining health (Case & Deaton, 2015), which has been shown to predict Trump support. Regions experiencing health-related threats in the form of high rates of obesity (An & Ji, 2018), "deaths of despair" attributable to drugs, alcohol, and suicide (Monnat, 2016), and declines in life expectancy (Bor, 2017) were more likely to vote for Trump than were other regions. In sum, economic, demographic, and health-related conditions intertwined in 2016, creating a threatening environment that, according to theories of authoritarianism, were ripe for the emergence of a leader like Trump. Rather than focusing on economic, demographic, or health-related threats independently, our analysis examines how a broad array of structural factors are related to Trump voting.

Nevertheless, psychologists have shown for decades that people's behavior—which includes their voting behavior—cannot be explained solely by their environment (Funder, 2006; Swann & Seyle, 2005). Psychological factors internal to the person also have an important role to play. Many researchers who take this view have located the roots of Trump's support in people's emotional experience, rather than in their environment. Consistent with this view, empirical evidence suggests that negative emotions were key drivers of Trump support in 2016. One study of more than two million people found that unhappiness was strongly associated with voting for Trump at both the individual and county levels (Ward et al., 2021). Unhappiness, fear, and anger have also been associated with voting for Brexit in the U.K. (Alabrese et al., 2019), voting for the far-right National Front in France (Jost, 2019; Vasilopoulos et al., 2019a), and populist attitudes in Spain (Rico, Guinjoan, & Anduiza, 2017). Some of this research has sought to determine which emotion (e.g., anger or fear) best predicts voting behavior (Vasilopoulos et al., 2019b). Here, we examine how a region's general tendency to experience *all* negative emotions, captured by the prevalence of neuroticism in a region, predicted voting for Trump in 2016 and 2020.

Neuroticism is the personality trait most closely associated with the experience of negative emotions (Larsen & Ketelaar, 1991). People high on neuroticism are particularly prone to experiencing fear, anger, depression, and anxiety (Leki & Wilkowski, 2017; Martin, Watson, & Wan, 2000; Perkins, Kemp, & Corr, 2007; Weinstock & Whisman, 2006). Moreover, the emotions of people high on neuroticism cascade such that they 1) are hyper-reactive to negative events; 2) experience negative events more frequently; 3) appraise ambiguous events as more threatening, 4) experience negative emotional spillover to other areas of life; and 5) have difficulty coping with the above-described negative feelings (Suls & Martin, 2005). People high on neuroticism may therefore be particularly motivated to ameliorate their negative emotions in a variety of ways, including by voting for authoritarian leaders, like Trump, who project strength and address their fears.

The link between neuroticism and support for authoritarian leaders has been theorized for over half a century, but robust empirical evidence for this link has been lacking until recently. Sniderman (1975, p. 175) wrote "the evidence turned up on the authoritarian, the anti-Semite, or the communist pointed…to a vaguely defined neurotic state, indicative of personal maladjustment and little else", but early investigations into this claim presented conflicting results (Davids & Eriksen, 1957; Masling, 1954). Later meta-analyses and reviews also found that neuroticism was either unassociated with right-wing political ideology or was weakly associated with *left-wing* ideology (Gerber et al., 2010, 2011a; Jost et al., 2003; Sibley & Duckitt, 2008; Sibley, Osborne, & Duckitt, 2012). In light of this evidence, researchers surmised that left-wing policies advocating for a social safety net might be more appealing to the anxieties of people high on neuroticism as compared to right-wing policies that offer no such safety net (Schoen & Schumann, 2007). However, in contrast to claims that left-wing ideologies appeal to people high on neuroticism and more consistent with foundational theories, recent research has started to uncover evidence of a positive relationship between neuroticism and right-wing voting behavior. Most notably, counties higher on neuroticism were more likely to vote for Trump in 2016 (Obschonka et al., 2018). Neuroticism was also recently linked to higher authoritarianism, populism, and cultural conservatism at the individual level in the U.S., U.K., Germany, and the Netherlands (Bakker & Lelkes, 2018; Chen & Palmer, 2018; Fatke, 2019; cf. Fortunato et al., 2018). Given the recent and conflicting nature of the evidence, we investigate the presence and robustness of the relationship between regional neuroticism and voting behavior in 2016 and 2020.

The recency and inconsistency of evidence for the link between neuroticism and right-wing voting behavior suggests that this link may be contingent on structural factors, such as the economic, demographic, and health-related conditions of one's environment. Neuroticism may predict voting for leaders like Trump only in the presence of threatening structural factors, which trigger a neurotic cascade. Similarly, threatening structural factors may predict voting for Trump more strongly in regions high on neuroticism, because neuroticism may make threatening conditions particularly burdensome. Both possibilities are consistent with interactionist theories advanced in social and personality psychology, which argue that behavior is the product of psychological and environmental factors (Funder, 2006; Lewin, 1951). Indeed, some scholars contend that basic personality traits like neuroticism interact with environmental factors to produce more contextualized "middle level" units of personality called characteristic adaptations, which can include people's political behavior, values, and goals (Costa & McCrae, 1994; McAdams & Pals, 2006). Political psychologists have drawn on this tradition to show that the relationship between people's basic personality traits and their political ideology changes depending on the racial context (Gerber et al., 2010) and levels of systemic threat (Sibley, Osborne, & Duckitt, 2012). One recent study found that trait openness interacts with contextual threat to predict authoritarianism such that threat predicts

authoritarianism more strongly among people low on openness (Armendáriz Miranda, 2021).

Despite this empirical and theoretical precedent, research taking an interactionist approach to accounting for political behavior remains rare.[2] The vast majority of research investigating Trump support considers *either* psychological factors *or* structural factors. No research, to our knowledge, has examined the interactive effects of these factors on Trump support. Moreover, past research tends to focus on just a few structural variables rather than considering structural conditions more holistically. Our paper addresses these gaps by analyzing the multi-faceted structural and psychological roots of Trump voting.

In exploratory and confirmatory analyses of the 2016 and 2020 U.S. presidential elections, we test the independent effects of psychological and structural factors, as well as their additive and interactive effects, on voting behavior at the regional level. We probe the generality of our findings across two regional levels of analysis (counties and Core-Based Statistical Areas) and address problems unique to spatial analyses (by accounting for differences in population density, variance shared between regions in the same state, and similarity between neighboring regions). We capture the general structural conditions of a region by factor analyzing an array of publicly available variables, which yielded three factors per region reflecting economic deprivation, ethnic diversity, and health disadvantage. We capture the prevalence of negative emotionality in a region by aggregating the neuroticism scores of more than three million individuals according to the regions in which they live.

In all our analyses, we compare the effects of regional neuroticism to the effects of other personality traits, which have also been found to predict political attitudes. In addition, we benchmark the effects of our focal psychological and structural variables against other implicit and explicit variables that reflect a desire for group-based dominance (i.e., social-dominance orientation, right-wing authoritarianism, implicit racial and gender bias), which have been shown to predict status threat and voting in past research (e.g., Greenwald et al. 2009; Mutz 2018). To investigate the possibility that neuroticism and threatening structural factors are uniquely associated with *right*-wing voting behavior, we examine whether these variables predict voting for 2016 Democratic primary candidate Bernie Sanders, who purportedly shared Trump's populist voter base according to popular media accounts (White, 2016) and academic analyses (Staufer, 2021). To investigate the possibility that neuroticism and threatening structural factors are uniquely associated with right-wing *authoritarian* voting behavior, we examine whether these variables predict voting for 2016 Republican primary who displayed more tradi-

2) A related but distinct tradition of research examines how threatening situations (usually manipulated in the lab) interact with other individual differences (e.g., authoritarianism, not basic traits) to predict political behavior and attitudes (e.g., Feldman & Stenner, 1997; Marcus et al., 2005).

tional and less authoritarian tendencies than Trump (i.e., Marco Rubio, John Kasich, and Ted Cruz). To investigate changes in the Republican voter base over time, we examine whether neuroticism and threatening structural factors predict Trump's gains in 2016 over Republican presidential candidate Mitt Romney's performance in 2012, as well as Trump's gains in 2020 over his performance in 2016.

## Method

The method used to examine the 2016 and 2020 elections were identical, except that the structural and voting data were collected in different years. All data sources are described in Table 1. In addition, the method, analyses, and hypotheses for the 2020 election were pre-registered on OSF.[3] Sample size was determined based on data availability. The Online Supplementary Materials are available at https://osf.io/4fzga. These supplementary materials include additional methodological details (regarding the data, quality checks, exclusions, etc.) and additional results (regarding the factor analyses, CBSA analyses, spatial autocorrelation, and weighting for representativeness robustness checks). Data and code are also available in the Supplementary Materials. Factor analyses were conducted using R version 4.0.0; regression analyses were conducted using Stata version 15.1.

**Table 1**

*Overview of Variables and Data Sources*

| Variable | Description | Data Source |
|---|---|---|
| Voting | Trump votes 2016: Republican two-party vote share in 2016 general election | 2012 general election data: OpenDataSoft |
| | Trump votes 2020: 2020 Republican two-party vote share in 2020 election | 2016 general election data: Github |
| | Trump gains 2012-2016: Gain in Republican two-party vote share from 2012 to 2016 | 2020 general election data: Dave Leip's Atlas |

3) We report the following deviations from our pre-registration. First, our pre-registration mistakenly stated that all variables would be standardized prior to being used in analyses. Only the independent variables were standardized. Second, we used Bureau of Economic Analysis population density data and the Federal Communications Commission internet data instead of the American Community Survey's data because we wanted to use 1-year estimates where possible (rather than ACS's 5-year estimates). Third, the income ratio described in the pre-registration is the same as that included in the main manuscript, but we describe the 90th income percentile as "the bottom 10% of earners." Fourth, we did not mention weighting personality traits for representativeness as an additional test of robustness. Fifth, we did not anticipate the voting data exclusions due to lack of data availability in the pre-registration. Finally, the analyses of group-based dominance variables (i.e., SDO, RWA, race IAT, gender-career IAT) as well as analyses of Kasich, Rubio, and Cruz primary votes were conducted in response to reviewer comments and thus were not pre-registered.

| Variable | Description | Data Source |
|---|---|---|
| | Trump gains 2016-2020: Gain in Republican two-party vote share from 2016 to 2020<br>Trump primary votes 2016: Donald Trump's Republican primary vote share in 2016<br>Kasich primary votes 2016: John Kasich's Republican primary vote share in 2016<br>Cruz primary votes 2016: Ted Cruz's Republican primary vote share in 2016<br>Rubio primary votes 2016: Marco Rubio's Republican primary vote share in 2016<br>Sanders primary votes 2016: Bernie Sanders's Democratic primary vote share in 2016 | 2016 primary election data: Bucknell University's Digital Commons |
| Big 5 Personality Traits | Neuroticism, Openness to Experience, Conscientiousness, Extraversion, Agreeableness (BFI-44 aggregated to the regional level) | Gosling-Potter Internet Personality Project |
| Group-Based Dominance | Race IAT (implicit anti-Black bias)<br>Gender-career IAT (implicit gender bias)<br>Social dominance orientation (SDO)<br>Right-wing authoritarianism (RWA) | Project Implicit |
| Income | Real per-capita income in US dollars in 2016 and 2019 | Bureau of Economic Analysis<br>Bureau of Labor Statistics |
| Unemployment | Unemployment rate in 2016 and 2020 | Bureau of Labor Statistics |
| Manufacturing | Employment share in manufacturing/mining in 2016 and 2019 | Bureau of Economic Analysis |
| Agriculture | Employment share in agriculture in 2016 and 2019 | Bureau of Economic Analysis |
| Birthweight | Percentage of live births with birthweight under 2500g (~5.5 lbs.) in 2016 and 2020 | County Health Rankings |
| Smoking | Percentage of adults who smoke in 2016 and 2020 | County Health Rankings |
| Obesity | Percentage of adults who report a BMI ≥ 30 in 2016 and 2020 | County Health Rankings |
| Teen births | Percentage of births with mothers aged 15-19 in 2016 and 2020 | County Health Rankings |
| Physical health | Number of physically unhealthy days reported per month in 2016 and 2020 | County Health Rankings |
| Uninsured | Percentage of people under age 65 without health insurance in 2016 and 2020 | County Health Rankings |
| Ethnic diversity | Inverse of Hirschman-Herfindahl-Index (i.e., inverse of the probability that two randomly selected people will be of the same ethnicity) such that higher numbers reflect more diversity in 2012–2016 and 2015–2019 | American Community Survey |

| Variable | Description | Data Source |
|---|---|---|
| Income inequality | Ratio of the average income of the top 10% of earners divided by the average income of the bottom 10% of earners in 2015 | Sommeiller & Price (2018), following Piketty & Saez (2003) |
| Poverty | Percentage of the population in poverty in 2016 and 2019 | Census Bureau |
| Crime | Crime rate (arrests for murder, assault, theft, and burglary) per 100,000 individuals in 2016 and 2019 | FBI Uniform Crime Reporting |
| Migration | Percentage of the population that moved to the region from abroad within the last year from 2012-2016 and 2015-2019 | American Community Survey |
| Education | Percentage of people age 25+ with a bachelor degree from 2012–2016 and 2015-2019<br>Percentage of people age 25+ without a high-school degree 2012–2016 and 2015–2019 | American Community Survey |
| Internet access | Percentage of households with high-speed internet connection in 2016 and 2018 | Federal Communications Commission |
| Population density | Population per square mile in 2016 and 2020 | Bureau of Economic Analysis |

*Note.* BFI-44 = 44-item Big Five Inventory (John & Srivastava, 1999); BMI = Body Mass Index; IAT = Implicit Association Test. All variables except voting, personality, and group-based dominance were included in our factor analyses as indicators of regional economic, demographic, and health conditions.

## Regional Level and Spatial Analysis Considerations

The main unit of analysis is the county level, which we supplement with analyses at the Core-Based Statistical Areas (CBSA) level for reasons we describe below. Each CBSA is a metropolitan area composed of one or more counties: an urban core and its surrounding commuting territory.

Spatial analyses require unique analytical considerations. First, these analyses require appropriate geographic control variables. We control for population density because voters in rural regions with low population density tend to vote for conservative candidates. We also control for state-fixed effects by including state dummies that account for variance shared between regions in the same state, including any omitted confounding variables at the state level. It is particularly important to account for state-fixed effects in election research because election laws and procedures that differ from state to state could influence the results. Second, we must anticipate potential violation of the statistical assumption that error terms will be uncorrelated because neighboring regions are non-independent (Griffith, 1987). We address this concern (i.e., spatial autocorrelation) by conducting additional analyses that add spatial lags to our models using Stata's "spregress" command (StataCorp., 2017).[4] Third, we conduct analyses at both the county and CBSA levels to address the potential modifiable area unit problem (MAUP),

wherein one's findings depend on the choice of the geographical unit (Ebert et al., 2022; Openshaw & Taylor, 1979).

## Personality Data

Personality data come from the Gosling-Potter Internet Personality Project's most recent dataset, collected from 2003 to 2015 from participants who voluntarily completed personality surveys on the website www.outofservice.com in exchange for feedback about their personality. The data collection was declared exempt from informed consent by the approval of the Institutional Review Board at the University of Texas at Austin because there were no significant risks to participants (IRB #2004–10-0073). A partial list of papers that have used Gosling-Potter Internet Personality Project data can be found at http://www.thebigfiveproject.com/published-papers.

We aggregated the individual-level personality scores ($N$ = 3,167,041) to the county ($N$ = 2,083) and CBSA ($N$ = 923) levels based on where participants reported living. Only counties and CBSAs with at least 100 participants per region were included in our analyses. As the independent variable in our analyses, we focus on neuroticism ($\alpha$ = 0.79) as compared to and controlling for the other personality traits most strongly related to voting behavior in prior research: conscientiousness ($\alpha$ = 0.80) and openness ($\alpha$ = 0.74). These personality traits were measured using the 44-item Big Five Inventory (BFI-44; John & Srivastava, 1999). We address the (non-)representativeness of the sample by conducting robustness checks in which we weight individual respondents by age and gender to make the personality dataset more representative of the U.S. population.

## Voting Data

The 2016 U.S. general election data come from open data sources (Github, 2017; OpenDataSoft, 2016), and the 2020 general election results are from David Leip's Atlas of U.S. Presidential Elections (Leip, 2020). The 2016 U.S. primary election data are from Bucknell University's Digital Commons (Pirmann, Sherwood, & Tevebaugh, 2016).

For our dependent variable, we focus on three measures of voting behavior. The first measure is Trump's simple two-party vote share in 2016 and 2020. Vote share was calculated by taking the raw votes for Trump in each region as a proportion of the combined votes for Trump and the Democratic candidate in each region during the 2016 and 2020 U.S. presidential elections. This measure ignores third-party votes. The second measure is Trump's gains beyond the Republican presidential candidate in the previous election. This measure captures the degree to which regions *shifted* their vote share to

4) We conducted this robustness check out of an abundance of caution. We actually did not observe problematic spatial autocorrelation as indicated by non-significant levels of Moran's I (2016 Trump votes = 0.22, 2016 Trump gains = 0.61, 2020 Trump votes = 0.44, 2020 Trump gains = 0.84).

Trump in 2016 from Romney's vote share in 2012 ("2016 Trump gains") and to Trump in 2020 from his own initial vote share in 2016 ("2020 Trump gains"). For example, if Trump won 40% of the vote in 2016 and 45% in 2020, his gains from 2016 to 2020 would be 5%-points. Obviously, the size of Trump's gain corresponds to the size of the Democrats' loss. Note that the manuscript reports that Trump's mean two-party vote share is much greater than 50% in both elections, even though he did not win the popular vote in either election. This is because the mean vote share takes the mean across *counties* rather than individuals, and there are more rural counties (where Trump's vote share is very high) than urban counties.

The third category of voting behavior captures the vote share of other 2016 Democratic and Republican primary candidates', which we compare to Trump's 2016 primary vote share. Analyzing primary election results allows us to investigate the alleged common appeal of Trump and left-wing populist Bernie Sanders as well as whether Trump's voter base was similar to that of more traditional Republican candidates. We focused on the primary candidates who were arguably Trump's biggest competition: Bernie Sanders on the Democratic side and John Kasich, Ted Cruz, and Marco Rubio on the Republican side. Although there were other Republican primary candidates in 2016, none received more than 3% of the popular vote.

Sanders's primary vote share was calculated as the percentage of votes cast for him out of all primary votes cast for candidates of his party in a given region. Put differently, Sanders's vote share was calculated as the percentage of votes cast for Sanders out of all votes cast for both Bernie Sanders and Hillary Clinton in the Democratic primary because all other 2016 Democratic primary candidates withdrew before or shortly after the primary season began. The vote share for each primary Republican candidates was calculated as the percentage of votes cast for that candidate out of the total number of votes for all four candidates combined (Trump, Kasich, Rubio, and Cruz). We did not consider votes for Bernie Sanders in the 2020 Democratic primary elections because the political landscape had shifted from 2016 such that there were multiple Democratic candidates in 2020 (e.g., Elizabeth Warren) who were running on what might be considered left-wing populist platforms. We did not consider votes for other Republican primary candidates in 2020 because, as sitting president, Donald Trump was the de facto Republican nominee.

## Economic, Demographic, and Health Data

Table 1 includes 18 variables broadly capture regional economic, demographic, and health-related conditions in 2016 and 2020.[5] We factor analyzed these variables to derive factor scores for each region, which were saved and used as variables in our regression

5) As is evident from Table 1, data from 2020 was not yet available for many economic, demographic, and health variables of interest. In such cases, we use data from the most recent year available, usually 2019.

analyses. We elaborate on the rationale and procedure for our factor analytic approach below. Enders and Uscinski (2021) also describe a detailed rationale for examining a broad "profile" of factors when modeling Trump support.

Using factor scores as indicators of economic, demographic, and health conditions allows us to address several concerns. Every variable has strengths and weaknesses when it comes to representing a construct of interest. Per capita income may be a good indicator of people's absolute buying power in a given region, whereas unemployment may be a good indicator of the health of the region's job market. Both variables provide important information about a region's economic conditions. Relying on a diversity of sources and measures also helps diminish the influence of limitations, errors, or biases in any individual source's data. To avoid arbitrarily choosing one variable over another, one could include *all* relevant variables that might plausibly be related to regional economics, demographics, and health in regression analyses. However, this method presents challenges, such as multicollinearity in analyses that include highly correlated variables, a large number of coefficients to interpret, and ambiguity around how to interpret theoretically related variables that yield contradictory results. The factor analytic approach allows us to avoid these issues while characterizing regions' general economic, demographic, and health-related conditions.

Therefore, we conducted exploratory factor analyses for 2016 and 2020 at both regional levels. Before conducting each factor analysis, we consulted a scree plot which suggested that three factors had an eigen value > 1 (Kaiser, 1960) and might parsimoniously reflect our structural constructs of interest: economics, demographics, and health. We then conducted a factor analysis specifying three factors, maximum likelihood estimation, median imputation (to account for missing data unbiased by extreme scores), oblimin rotation (to allow for correlated factors), and the tenBerge method (to estimate correlation-preserving factor scores) using the "fa" function in the "psych" R package (Revelle, 2021, Version 1.9.12.31) and the "GPA rotation" R package (Bernaards & Jennrich, 2005, Version 2014.11.1). Results of the 2016 and 2020 county-level factor analyses are reported in Table 2.

**Table 2**

*Exploratory Factor Analyses of 2016 and 2020 Economic, Demographic, and Health Variables (Counties)*

| | 2016 | | | 2020 | | |
|---|---|---|---|---|---|---|
| **Variable** | **Economic Deprivation** | **Ethnic Diversity** | **Health Disadvantage** | **Economic Deprivation** | **Ethnic Diversity** | **Health Disadvantage** |
| College degree | **-.88** | -.16 | -.05 | **-.84** | -.16 | -.13 |
| Agriculture | **.60** | .12 | -.22 | **.60** | .12 | -.19 |
| Income | **-.59** | -.09 | -.26 | **-.57** | -.02 | -.32 |
| Income inequality | **-.56** | .35 | .08 | **-.61** | .19 | .23 |
| Migration | **-.53** | .22 | .00 | **-.58** | .20 | -.01 |
| Internet access | **-.52** | -.15 | -.20 | **-.51** | -.11 | -.22 |
| Obesity | **.48** | -.12 | **.47** | **.51** | -.01 | .29 |
| Manufacturing | **.48** | -.14 | .02 | **.50** | -.05 | -.06 |
| Uninsured | .10 | **.75** | -.01 | .13 | **.70** | -.06 |
| No high school | .35 | **.67** | .13 | .32 | **.64** | .21 |
| Ethnic diversity | -.37 | **.64** | -.08 | **-.40** | **.64** | -.01 |
| Teen births | .32 | **.55** | .24 | .34 | **.44** | .38 |
| Smoking | .06 | -.15 | **.96** | .14 | -.21 | **.90** |
| Physical health | .01 | .29 | **.74** | .01 | .04 | **.90** |
| Poverty | .01 | **.47** | **.56** | -.02 | .28 | **.70** |
| Birthweight | -.14 | .36 | **.49** | -.17 | .26 | **.60** |
| Unemployment | .17 | .39 | .26 | -.18 | .10 | .37 |
| Crime | -.10 | .26 | .23 | .13 | .20 | .20 |

*Note.* Bolded values represent factor loadings ≥ |.40|. All factors were positively correlated with each other.

Regions that scored high on the first factor, which we call *economic deprivation*, had low rates of college education, low income, low levels of migration and income inequality, lacked Internet access, had a high share of agriculture/mining industries, and high obesity. These economically deprived regions tend to be rural, as indicated by the factor's negative correlation ($r$ = -.17) with population density. Importantly, regions that scored high on this factor were not the very poorest regions, since variables like poverty and unemployment did not load strongly on this factor. Instead, regions that scored strongly on the first factor are rural regions that probably *used* to drive the American economy (e.g., with manufacturing and agriculture) but are no longer doing as well (Eriksson et al., 2021; Low, 2021). Employment share in agriculture and manufacturing have been shrinking in number and value for several decades, leading to socioeconomic distress in counties in the Rust Belt and the Midwest. Therefore, we describe this factor using the word "deprivation," which is synonymous with "loss," to reflect these regions' loss of economic dominance.

Regions that scored high on the second factor, which we call *ethnic diversity,* had more ethnic diversity, high school dropouts, teen births, poverty, and uninsured people. This factor most likely captures the Black and Hispanic ethnic makeup of a region

because these populations account for about twice as many high school dropouts, teen births, uninsured people, and people in poverty than do White and Asian populations, according to the National Center for Education Statistics (NCES, 2019), the Centers for Disease Control (CDC, 2019), and the Kaiser Family Foundation (KFF, 2019a, 2019b). The fact that this factor includes uninsured and high school dropouts shows that communities of color disproportionately lack access to healthcare and education. Similarly, the fact that, in 2016, poverty and unemployment load strongly on this factor shows how racialized lack of economic opportunity is in the U.S. This factor was uncorrelated with population density, suggesting that it captures ethnic diversity in both urban and rural settings.

Regions that scored high on the third factor, which we call *health disadvantage*, had higher smoking rates, more reported poor physical health days, and more babies born underweight. Using the most stringent significance threshold, this factor was unrelated to population density, suggesting that health disadvantage can be found in both urban and rural regions. The fact that this factor includes poverty (which also loaded strongly on the ethnic diversity factor in 2016) and obesity (which also loaded strongly on the economic deprivation factor) suggests economic, demographic, and health conditions are all intertwined. One benefit of taking a data-driven inductive approach to factor analysis is that it reveals these kinds of interdependencies.

Indeed, correlations between the factors show that regions that were economically deprived also tended to have greater ethnic diversity and worse health. In 2016, the economic deprivation and ethnic diversity factors were positively correlated ($r$ = .18), the economic deprivation and health disadvantage factors were positively correlated ($r$ = .48), and the ethnic diversity and health disadvantage factors were positively correlated ($r$ = .44). In 2020, the economic deprivation and ethnic diversity factors were correlated ($r$ = .10), the economic and health factors were correlated ($r$ = .45), and the ethnic diversity and health disadvantage factors were correlated ($r$ = .42).

## Group-Based Dominance Data

The ethnic diversity factor provides a good sense of the objective demographic conditions of a region, but it does not reflect how people perceive or feel about minorities and other historically marginalized groups. Negative subjective attitudes towards minorities were considered core to the original conceptualization of the authoritarian personality (Adorno et al., 1950) and have more recently been shown to be strong predictors of Trump support (Bartels, 2018; Mason, Wronski, & Kane, 2021) and anti-democratic tendencies (Bartels, 2020). Similarly, some research has found that sexism against Hillary, which was not accounted for in our structural factors, was related to Trump voting (Ratliff et al., 2019). Accounting for regional differences in such attitudes may be as important as accounting for the actual demographic makeup of a region because it is possible that two counties have similar demographics, but one of these counties has less

bias (e.g., due to higher levels of intergroup contact). More generally, and as previously mentioned, threats to one's group are not experienced in absolute terms but rather in relation to one's standing relative to other groups. In support of this idea, prior work has demonstrated that psychological factors that capture a preference for one's own group to dominate or aggress against other groups (e.g., social dominance orientation, right-wing authoritarianism) predict individuals' support for Trump (Van Assche, Dhont, & Pettigrew, 2019; Womick et al. 2019).

Therefore, we benchmark the main effects of our focal psychological and structural variables against variables that capture regions' tendency to experience several forms of group-based dominance: social dominance orientation (SDO, $N$ = 690,692, $\alpha$ = .82–.87)[6], right-wing authoritarianism (RWA, $N$ = 732,347, $\alpha$ = .80–.92), implicit anti-Black bias (race IAT, $N$ = 3,114,109), and implicit gender bias (gender-career IAT, $N$ = 1,039,163). All four group-based dominance variables were accessed from Project Implicit's public datasets, specifically the Race IAT dataset (available at https://osf.io/52qxl/) and Gender-Career IAT dataset (available at https://osf.io/abxq7/) (Xu, Nosek, & Greenwald, 2014). Implicit race and gender bias was assessed by the $D$ measure from the implicit attitudes test (IAT), which captures the speed with which people associate group categories (i.e., race and gender categories) with other words (e.g., "good" vs. "bad"; "career" vs. "family"). RWA was measured from 2007 to 2020 with items such as "Our country will be destroyed someday if we do not smash the perversions eating away at our moral fiber and traditional beliefs" and "Some of the worst people in our country nowadays are those who do not respect our flag, our leaders, and the normal way things are supposed to be done." SDO was measured from 2006 to 2020 with items like "It's OK if some groups have more of a chance in life than others" and "If certain groups stayed in their place, we would have fewer problems." Note that, unlike our focal psychological and structural variables, measures of SDO and RWA contain political content, which should make them strong predictors of political behavior like voting. Therefore, accounting for these measures of group-based dominance is a particularly conservative test of other psychological and structural variables' explanatory power.

Moreover, personality traits that were not included in our previous regression models—extraversion and agreeableness—may also play a role in people's tendency to aggress against others. People who are willing to denigrate women, minorities, and other groups are likely to be assertive (a facet of extraversion) and lacking in compassion (a facet of agreeableness). Indeed, recent research has linked both agreeableness and extraversion to support for Trump and other populists at the individual level (Bakker, Matthijs, & Gijs, 2016a; Bakker, Schumacher, & Rooduijn, 2021; Bakker, Rooduijn, & Schumacher, 2016b; Fortunato et al., 2018). Thus, we also account for the main effects of extraversion

6) We provide a range of alpha reliabilities for SDO and RWA because different years used different response scales.

($\alpha$ = .87) and agreeableness ($\alpha$ = .81), as measured in the Gosling-Potter Internet Personality Project by the BFI-44.

We aggregated individual scores on the group-based dominance and personality variables to the county level. We dropped counties that included less than 50 individual observations rather than those with less than 100 individual observations (as was the case in our previous analyses) to increase our total sample of counties. Even so, our final sample size for regressions included group-based dominance variables was about half ($N$ = 1,096) of that used in our focal analyses.

## Results

Table 3 reports correlations between regional personality traits, structural factors, and voting behavior at the county level. A few correlations are worth pointing out. Regional neuroticism was moderately to strongly associated with voting for Trump in 2016 and 2020 ($r$ = 0.36 and 0.39, $p$s < .001). Neurotic regions were also those in which Trump experienced gains from 2012 to 2016 and from 2016 to 2020 ($r$ = 0.44 and 0.17, $p$s < .001). It is also worth noting that neurotic regions experienced greater economic disadvantage in 2016 and 2020 ($r$ = 0.38 and 0.38, $p$s < .001). Of the structural factors, economic disadvantage was most strongly correlated with Trump votes ($r$ = 0.61 and 0.69; $p$s < .001) and gains ($r$ = 0.67 and 0.43, $p$s < .001) in 2016 and 2020, respectively. Interestingly, the ethnic diversity factor showed somewhat different patterns in 2016 and 2020. *Less* ethnic diversity was associated with Trump gains in 2016 ($r$ = -0.29, $p$ < .001), whereas *more* ethnic diversity was associated with Trump gains in 2020 ($r$ = 0.35, $p$ < .001).

**Table 3**

*Correlations (Counties)*

| | Variable | *M* | *SD* | Min | Max | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | Trump votes 2016 | 63.43 | 15.62 | 4.25 | 92.26 | 1.00 | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2 | Trump gains 2016 | 5.21 | 5.29 | -17.27 | 21.6 | .43 | 1.00 | | | | | | | | | | | | | | | | | | | | | | | | |
| 3 | Trump votes 2020 | 62.35 | 15.79 | 5.53 | 91.28 | .99 | .47 | 1.00 | | | | | | | | | | | | | | | | | | | | | | | |
| 4 | Trump gains 2020 | -1.08 | 2.52 | -8.12 | 28.13 | -.01 | .29 | .15 | 1.00 | | | | | | | | | | | | | | | | | | | | | | |
| 5 | Sanders primary votes 2016 | 44.99 | 14.99 | 3.93 | 99.75 | .08 | .22 | .03 | -.27 | 1.00 | | | | | | | | | | | | | | | | | | | | | |
| 6 | Trump primary votes 2016 | 45.82 | 14.80 | 0.34 | 87.99 | -.05 | .11 | -.06 | -.09 | .04 | 1.00 | | | | | | | | | | | | | | | | | | | | |
| 7 | Kasich primary votes 2016 | 10.77 | 9.85 | 0.00 | 63.78 | -.28 | .06 | -.31 | -.16 | .28 | .00 | 1.00 | | | | | | | | | | | | | | | | | | | |
| 8 | Cruz primary votes 2016 | 26.75 | 12.15 | 2.07 | 70.39 | .29 | .05 | .30 | .11 | .03 | -.58 | -.31 | 1.00 | | | | | | | | | | | | | | | | | | |
| 9 | Rubio primary votes 2016 | 11.70 | 9.22 | 0.14 | 62.66 | -.17 | -.44 | -.18 | -.07 | -.23 | -.51 | -.32 | -.19 | 1.00 | | | | | | | | | | | | | | | | | |
| 10 | Neuroticism | 2.93 | 0.08 | 2.56 | 3.24 | .36 | .44 | .39 | .17 | .21 | .08 | .05 | .02 | -.25 | 1.00 | | | | | | | | | | | | | | | | |
| 11 | Openness | 3.61 | 0.09 | 3.31 | 3.93 | -.48 | -.48 | -.51 | -.22 | .03 | .12 | .15 | -.27 | .24 | -.19 | 1.00 | | | | | | | | | | | | | | | |
| 12 | Conscientiousness | 3.59 | 0.08 | 3.35 | 3.94 | -.05 | -.08 | -.04 | .05 | -.37 | -.03 | -.13 | .02 | .08 | -.38 | -.06 | 1.00 | | | | | | | | | | | | | | |
| 13 | Extraversion | 3.30 | 0.07 | 2.95 | 3.62 | -.03 | -.02 | -.02 | .00 | -.07 | -.16 | .02 | .11 | .01 | -.41 | -.18 | .13 | 1.00 | | | | | | | | | | | | | |
| 14 | Agreeableness | 3.78 | 0.08 | 3.51 | 4.10 | -.08 | -.09 | -.06 | .14 | -.44 | -.05 | -.18 | .03 | .08 | -.38 | -.18 | .69 | .24 | 1.00 | | | | | | | | | | | | |
| 15 | Economic dep. factor 2016 | 0.00 | 1.00 | -5.91 | 1.87 | .61 | .67 | .67 | .46 | -.14 | .02 | -.32 | .27 | -.31 | .38 | -.56 | .08 | -.07 | .12 | 1.00 | | | | | | | | | | | |



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| Variable | *M* | *SD* | Min | Max | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 16 Economic dep. factor 2020 | 0.00 | 1.00 | -6.10 | 1.86 | .63 | .69 | .69 | .43 | -.10 | .01 | -.31 | .27 | -.32 | .38 | -.58 | .07 | -.07 | .11 | .99 | 1.00 | | | | | | | | | | |
| 17 Ethnic diversity factor 2016 | 0.00 | 1.00 | -1.98 | 5.02 | -.11 | -.29 | -.05 | .37 | -.49 | .08 | -.38 | .00 | .21 | -.09 | .15 | .22 | -.12 | .28 | .18 | .12 | 1.00 | | | | | | | | | |
| 18 Ethnic diversity factor 2020 | 0.00 | 1.00 | -1.84 | 4.65 | -.11 | -.32 | -.05 | .35 | -.52 | -.01 | -.39 | .07 | .26 | -.12 | .13 | .21 | -.09 | .26 | .16 | .10 | .95 | 1.00 | | | | | | | | |
| 19 Health dis. factor 2016 | 0.00 | 1.00 | -2.91 | 4.31 | .16 | .24 | .22 | .39 | -.29 | -.02 | -.25 | .08 | -.07 | .21 | -.19 | .24 | -.08 | .32 | .48 | .46 | .44 | .32 | 1.00 | | | | | | | |
| 20 Health dis. factor 2020 | 0.00 | 1.00 | -2.29 | 4.16 | .14 | .21 | .21 | .41 | -.32 | .04 | -.24 | .06 | -.10 | .21 | -.14 | .24 | -.11 | .30 | .49 | .45 | .56 | .42 | .95 | 1.00 | | | | | | |
| 21 Race IAT | 0.33 | 0.05 | -0.04 | 0.45 | .48 | .34 | .47 | -.05 | .41 | .04 | .17 | -.01 | -.22 | .37 | -.34 | -.31 | .06 | -.26 | .17 | .20 | -.46 | -.48 | -.13 | -.14 | 1.00 | | | | | |
| 22 Gender-career IAT | 0.38 | 0.03 | 0.26 | 0.5 | .13 | .04 | .13 | -.02 | -.08 | -.07 | -.08 | .08 | .03 | -.04 | -.11 | .13 | .02 | .17 | .06 | .06 | -.01 | -.02 | .12 | .11 | .02 | 1.00 | | | | |
| 23 RWA | 3.62 | 0.33 | 2.60 | 4.79 | .52 | .19 | .54 | .11 | -.39 | -.15 | -.32 | .32 | -.05 | .05 | -.43 | .28 | .09 | .27 | .53 | .51 | .19 | .20 | .38 | .37 | -.01 | .14 | 1.00 | | | |
| 24 SDO | 2.31 | 0.19 | 1.65 | 3.24 | .22 | .08 | .21 | -.05 | -.08 | -.05 | -.04 | .07 | -.03 | .08 | -.21 | -.02 | .11 | .05 | .09 | .08 | -.07 | -.04 | .03 | .02 | .19 | .02 | .22 | 1.00 | | |
| 25 Population density 2016 | 845.75 | 13817.59 | 1.49 | 590508 | -.13 | -.12 | -.13 | .00 | -.04 | -.01 | .12 | -.12 | .23 | -.01 | .08 | -.05 | -.02 | -.04 | -.17 | -.17 | -.01 | .00 | -.04 | -.05 | -.04 | -.07 | -.13 | -.09 | 1.00 | |
| 26 Population density 2020 | 852.26 | 13877.33 | 1.49 | 593084 | -.13 | -.12 | -.13 | .00 | -.04 | -.01 | .12 | -.12 | .23 | -.01 | .08 | -.05 | -.02 | -.04 | -.17 | -.17 | -.01 | .00 | -.04 | -.05 | -.04 | -.07 | -.13 | -.09 | 1.00 | 1.00 |

*Note*. Correlations above |.07; .06; .04| are significant at the $p = .001$; $p = .01$; $p = .05$ levels. Trump 2016 gains = Gains in the two-party Republican vote share between the 2012 and 2016 elections; Trump 2020 gains = Gains in the two-party Republican vote share between the 2016 and 2020 elections; Economic dep. = economic deprivation; Health dis = health disadvantage; IAT = Implicit Attitudes Test; RWA = right-wing authoritarianism; SDO = social dominance orientation.



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Next, we conducted OLS regressions to test the potential direct effect of neuroticism and its interactive effects with structural factors on voting behavior. For each voting outcome (i.e., Trump votes in 2016 and 2020, Trump gains in 2016 and 2020, and primary election votes in 2016), we tested six models. The first model included only the population density covariate and the state-fixed effects. The second model added main effects of the economic, health, and ethnic diversity factors. The third model substituted these three factors for the main effects of neuroticism, openness, and conscientiousness. The fourth model included all personality and structural main effects. The fifth model added our focal interactions between neuroticism and the structural factors (economic deprivation, ethnic diversity, and health disadvantage). The sixth model added interactions between all covariates (openness, conscientiousness, population density) and all three structural factors. We included these additional terms in the sixth model because including main effects of covariates alone does not properly control for the covariate in models that test interactive effects (Hull, Tedlie, & Lehn, 1992; Yzerbyt, Muller, & Judd, 2004). The average VIF of Model 6 across predictors and the VIF of main effects (including neuroticism) are unproblematic. Thus the main effects in Model 6 can be interpreted. However, the neuroticism interactions in Model 6 in both the 2016 and 2020 analyses did show problematic VIF, sometimes reaching levels above 60, potentially inflating the standard errors associated with the neuroticism interactions and signaling problematic levels of multi-collinearity. Therefore, we caution against interpreting the neuroticism interactions in Model 6.

All independent variables were *z*-standardized; dependent variables were not standardized to ease interpretation of the coefficients. The Breusch-Pagan test revealed heteroscedasticity, which biases the *t*-statistics and leads to erroneous conclusions about statistical significance. To avoid this problem, we used heteroscedasticity robust standard errors.

## Main Effects of Structural Factors and Regional Personality on Trump Voting

Models 1, 2, and 3 evaluated the extent to which regional differences in the regional covariates, personality traits, and structural factors explained voting behavior, respectively. Table 4 presents Trump votes and gains at the county level in 2016. Table 5 presents Trump votes and gains at the county level in 2020.

**Table 4**

*Regressions on 2016 Trump Votes and Gains (Counties)*

| | 2016 Trump Votes | | | | | | 2016 Trump Gains | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Variable** | **(1)** | **(2)** | **(3)** | **(4)** | **(5)** | **(6)** | **(1)** | **(2)** | **(3)** | **(4)** | **(5)** | **(6)** |
| Neuroticism | | | 4.27*** | 2.22*** | 1.58*** | 1.41** | | | 1.75*** | 0.55*** | 0.46*** | 0.49*** |
| | | | (3.34 – 5.21) | (1.38 – 3.05) | (0.72 – 2.44) | (0.55 – 2.26) | | | (1.36 – 2.13) | (0.31 – 0.80) | (0.21 – 0.71) | (0.29 – 0.69) |
| Openness | | | -6.06*** | -2.47*** | -2.44*** | -2.58*** | | | -1.62*** | 0.00 | 0.02 | 0.10 |
| | | | (-6.96 – -5.16) | (-3.30 – -1.64) | (-3.25 – -1.62) | (-3.33 – -1.84) | | | (-1.86 – -1.38) | (-0.17 – 0.18) | (-0.16 – 0.21) | (-0.12 – 0.32) |
| Conscientiousness | | | -0.90 | -0.88* | -0.62* | -0.38 | | | 0.55*** | 0.09 | 0.07 | 0.16 |
| | | | (-2.18 – 0.38) | (-1.60 – -0.16) | (-1.21 – -0.02) | (-0.84 – 0.08) | | | (0.32 – 0.78) | (-0.09 – 0.27) | (-0.12 – 0.26) | (-0.04 – 0.36) |
| Economic deprivation | | 11.36*** | | 9.08*** | 9.21*** | 8.42*** | | 3.69*** | | 3.47*** | 3.66*** | 3.85*** |
| 2016 | | (10.45 – 12.27) | | (8.03 – 10.12) | (8.03 – 10.38) | (7.34 – 9.50) | | (3.33 – 4.05) | | (3.08 – 3.86) | (3.25 – 4.08) | (3.43 – 4.27) |
| Ethnic diversity 2016 | | -5.67*** | | -5.44*** | -5.41*** | -4.47*** | | -1.12*** | | -1.10*** | -1.17*** | -1.37*** |
| | | (-7.94 – -3.39) | | (-7.46 – -3.43) | (-7.42 – -3.40) | (-6.53 – -2.42) | | (-1.52 – -0.72) | | (-1.50 – -0.69) | (-1.56 – -0.77) | (-1.79 – -0.94) |
| Health disadvantage 2016 | | -5.74*** | | -5.16*** | -4.95*** | -5.36*** | | 0.75** | | 0.76** | 0.77** | 0.98*** |
| | | (-8.30 – -3.19) | | (-7.44 – -2.88) | (-6.77 – -3.14) | (-7.10 – -3.62) | | (0.24 – 1.27) | | (0.26 – 1.26) | (0.25 – 1.28) | (0.47 – 1.49) |
| Population density 2016 | -1.56** | -0.04 | -1.27*** | -0.27** | -0.25* | -10.12** | -0.52*** | 0.05 | -0.40*** | 0.03 | 0.05 | -2.36*** |
| | (-2.64 – -0.49) | (-0.19 – 0.10) | (-1.95 – -0.59) | (-0.44 – -0.11) | (-0.45 – -0.04) | (-16.51 – -3.74) | (-0.77 – -0.26) | (-0.01 – 0.12) | (-0.54 – -0.26) | (-0.03 – 0.09) | (-0.02 – 0.12) | (-3.22 – -1.50) |
| Neuroticism x Ec. dep. | | | | | -0.70* | 0.39 | | | | | 0.38*** | 0.46*** |
| 2016 | | | | | (-1.37 – -0.04) | (-0.31 – 1.09) | | | | | (0.18 – 0.59) | (0.23 – 0.70) |
| Openness x Ec. dep. 2016 | | | | | | 1.16*** | | | | | | -0.36*** |
| | | | | | | (0.57 – 1.76) | | | | | | (-0.56 – -0.16) |
| Conscientiousness x Ec. | | | | | | -0.33 | | | | | | -0.15 |
| dep. 2016 | | | | | | (-0.83 – 0.18) | | | | | | (-0.41 – 0.12) |
| Pop density x Ec. dep. | | | | | | -1.97*** | | | | | | -0.27*** |
| 2016 | | | | | | (-2.76 – -1.18) | | | | | | (-0.41 – -0.13) |
| Neuroticism x Ethnic div. | | | | | 1.21*** | 0.33 | | | | | -0.19 | -0.20 |
| 2016 | | | | | (0.54 – 1.88) | (-0.33 – 0.99) | | | | | (-0.38 – 0.01) | (-0.40 – 0.01) |
| Openness x Ethnic div. | | | | | | -1.70*** | | | | | | 0.29** |
| 2016 | | | | | | (-2.63 – -0.78) | | | | | | (0.10 – 0.48) |
| Conscientiousness x | | | | | | -0.62 | | | | | | 0.03 |
| Ethnic div. 2016 | | | | | | (-1.28 – 0.04) | | | | | | (-0.20 – 0.27) |



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| | 2016 Trump Votes | | | | | | 2016 Trump Gains | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Variable** | **(1)** | **(2)** | **(3)** | **(4)** | **(5)** | **(6)** | **(1)** | **(2)** | **(3)** | **(4)** | **(5)** | **(6)** |
| Pop density x Ethnic div. | | | | | | 2.57*** | | | | | | 0.08 |
| 2016 | | | | | | (1.60 – 3.55) | | | | | | (-0.15 – 0.30) |
| Neuroticism x Health dis. | | | | | 1.35*** | 0.95** | | | | | -0.09 | -0.19 |
| 2016 | | | | | (0.77 – 1.92) | (0.32 – 1.58) | | | | | (-0.34 – 0.17) | (-0.45 – 0.07) |
| Openness x Health dis. | | | | | | 0.08 | | | | | | -0.15 |
| 2016 | | | | | | (-0.77 – 0.92) | | | | | | (-0.34 – 0.03) |
| Conscientiousness x | | | | | | -0.86** | | | | | | -0.10 |
| Health dis. 2016 | | | | | | (-1.44 – -0.27) | | | | | | (-0.32 – 0.13) |
| Pop density x Health dis. | | | | | | -3.30* | | | | | | -1.04*** |
| 2016 | | | | | | (-6.03 – -0.57) | | | | | | (-1.40 – -0.68) |
| Neuroticism x Openness | | | | | | 0.89** | | | | | | 0.34*** |
| | | | | | | (0.24 – 1.55) | | | | | | (0.19 – 0.48) |
| Neuroticism x | | | | | | 0.23 | | | | | | 0.13 |
| Conscientiousness | | | | | | (-0.47 – 0.93) | | | | | | (-0.04 – 0.30) |
| Constant | 69.25*** | 74.62*** | 67.92*** | 74.33*** | 74.34*** | 73.95*** | 4.38*** | 2.84*** | 3.91*** | 2.91*** | 2.79*** | -2.00*** |
| | (69.20 – 69.31) | (71.82 – 77.42) | (67.52 – 68.31) | (71.84 – 76.83) | (72.40 – 76.28) | (71.90 – 76.00) | (4.36 – 4.39) | (2.39 – 3.30) | (3.83 – 3.99) | (2.47 – 3.35) | (2.33 – 3.25) | (-2.41 – -1.59) |
| Observations | 2,083 | 2,083 | 2,083 | 2,083 | 2,083 | 2,083 | 2,083 | 2,083 | 2,083 | 2,083 | 2,083 | 2,083 |
| Adjusted $R^2$ | 0.28 | 0.65 | 0.49 | 0.68 | 0.70 | 0.72 | 0.39 | 0.78 | 0.57 | 0.79 | 0.79 | 0.51 |

*Note*. OLS regressions at the county level. Independent variables were standardized. Regression coefficients and their 95% CIs are provided. All models include population density and state fixed effects as covariates. State fixed effects are not depicted for the sake of brevity. Model 1 only includes covariates. Model 2 includes main effects of the structural factors (economic deprivation, ethnic diversity, and health disadvantage). Model 3 includes main effects of personality tratis (neuroticism, openness, and conscientiousness). Model 4 includes all personality and structural factor main effects. Model 5 additionally includes neuroticism's interaction with each structural factor. Model 6 adds the interactions between the covariates (population density, openness, conscientiousness,) and focal independent variables (neuroticism and structural factors). 2020 Trump gains = Gains in the two-party Republican vote share between the 2016 and 2020 elections.
$^{*}p < .05$. $^{**}p < .01$. $^{***}p < .001$.



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**Table 5**

*Regressions on 2020 Trump Votes and Gains (Counties)*

| | 2020 Trump Votes | | | | | | 2020 Trump Gains | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Variable** | **(1)** | **(2)** | **(3)** | **(4)** | **(5)** | **(6)** | **(1)** | **(2)** | **(3)** | **(4)** | **(5)** | **(6)** |
| Neuroticism | | | 4.73*** | 2.34*** | 1.65*** | 1.49*** | | | 0.46*** | 0.11 | 0.03 | 0.03 |
| | | | (3.82 – 5.64) | (1.61 – 3.08) | (0.80 – 2.49) | (0.70 – 2.27) | | | (0.34 – 0.58) | (-0.04 – 0.27) | (-0.13 – 0.20) | (-0.13 – 0.20) |
| Openness | | | -6.50*** | -2.33*** | -2.34*** | -2.47*** | | | -0.44*** | -0.05 | -0.04 | 0.03 |
| | | | (-7.23 – -5.76) | (-3.03 – -1.64) | (-3.03 – -1.64) | (-3.12 – -1.82) | | | (-0.65 – -0.22) | (-0.28 – 0.17) | (-0.25 – 0.18) | (-0.18 – 0.23) |
| Conscientiousness | | | -0.70 | -0.84* | -0.57 | -0.40 | | | 0.20* | -0.01 | -0.03 | -0.05 |
| | | | (-1.92 – 0.53) | (-1.56 – -0.12) | (-1.16 – 0.02) | (-0.88 – 0.07) | | | (0.04 – 0.37) | (-0.12 – 0.10) | (-0.13 – 0.08) | (-0.16 – 0.07) |
| Economic deprivation | | 12.42*** | | 10.14*** | 10.34*** | 9.89*** | | 0.69*** | | 0.61*** | 0.76*** | 1.11*** |
| 2020 | | (11.43 – 13.41) | | (9.19 – 11.08) | (9.25 – 11.44) | (8.93 – 10.85) | | (0.43 – 0.94) | | (0.33 – 0.90) | (0.43 – 1.09) | (0.89 – 1.32) |
| Ethnic diversity 2020 | | -2.79*** | | -2.83*** | -2.89*** | -2.59*** | | 1.16*** | | 1.16*** | 1.14*** | 0.87** |
| | | (-4.06 – -1.51) | | (-3.99 – -1.67) | (-4.01 – -1.76) | (-3.86 – -1.32) | | (0.54 – 1.79) | | (0.54 – 1.79) | (0.50 – 1.78) | (0.28 – 1.47) |
| Health disadvantage 2020 | | -6.16*** | | -5.51*** | -5.29*** | -5.13*** | | 0.42** | | 0.43** | 0.42** | 0.55*** |
| | | (-8.94 – -3.37) | | (-7.90 – -3.12) | (-7.08 – -3.49) | (-6.95 – -3.31) | | (0.16 – 0.67) | | (0.17 – 0.69) | (0.16 – 0.68) | (0.29 – 0.80) |
| Population density 2020 | -1.52** | 0.11* | -1.20*** | -0.12 | -0.08 | -12.47** | 0.04 | 0.15** | 0.07 | 0.15** | 0.16** | 0.60 |
| | (-2.49 – -0.56) | (0.01 – 0.21) | (-1.74 – -0.65) | (-0.24 – 0.00) | (-0.21 – 0.05) | (-19.90 – -5.04) | (-0.07 – 0.15) | (0.05 – 0.25) | (-0.06 – 0.21) | (0.05 – 0.24) | (0.06 – 0.27) | (-1.91 – 3.10) |
| Neuroticism x Ec. dep. | | | | | -0.57 | 0.45 | | | | | 0.28** | 0.24** |
| 2020 | | | | | (-1.33 – 0.20) | (-0.23 – 1.14) | | | | | (0.10 – 0.45) | (0.07 – 0.42) |
| Openness x Ec. dep. 2020 | | | | | | 0.71* | | | | | | -0.35*** |
| | | | | | | (0.11 – 1.31) | | | | | | (-0.43 – -0.26) |
| Conscientiousness x Ec. | | | | | | 0.03 | | | | | | 0.19* |
| dep. 2020 | | | | | | (-0.54 – 0.60) | | | | | | (0.03 – 0.34) |
| Pop density x Ec. dep. | | | | | | -2.21*** | | | | | | 0.03 |
| 2020 | | | | | | (-2.96 – -1.46) | | | | | | (-0.28 – 0.34) |
| Neuroticism x Ethnic | | | | | 0.75* | 0.16 | | | | | -0.10 | -0.01 |
| diversity 2020 | | | | | (0.17 – 1.33) | (-0.35 – 0.68) | | | | | (-0.22 – 0.02) | (-0.12 – 0.09) |
| Openness x Ethnic div. | | | | | | -0.84* | | | | | | 0.47*** |
| 2020 | | | | | | (-1.51 – -0.18) | | | | | | (0.29 – 0.65) |
| Conscientiousness x | | | | | | -0.71* | | | | | | -0.01 |
| Ethnic div. 2020 | | | | | | (-1.25 – -0.17) | | | | | | (-0.10 – 0.08) |



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| | 2020 Trump Votes | | | | | | 2020 Trump Gains | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Variable** | **(1)** | **(2)** | **(3)** | **(4)** | **(5)** | **(6)** | **(1)** | **(2)** | **(3)** | **(4)** | **(5)** | **(6)** |
| Pop density x Ethnic div. | | | | | | 3.19*** | | | | | | -0.21 |
| 2020 | | | | | | (1.78 – 4.59) | | | | | | (-0.53 – 0.11) |
| Neuroticism x Health dis. | | | | | 1.71*** | 1.08** | | | | | -0.06 | -0.08 |
| 2020 | | | | | (1.10 – 2.31) | (0.41 – 1.75) | | | | | (-0.16 – 0.05) | (-0.21 – 0.05) |
| Openness x Health dis. | | | | | | -0.51 | | | | | | -0.17 |
| 2020 | | | | | | (-1.28 – 0.26) | | | | | | (-0.37 – 0.02) |
| Conscientiousness x | | | | | | -0.85** | | | | | | -0.01 |
| Health dis. 2020 | | | | | | (-1.46 – -0.25) | | | | | | (-0.15 – 0.14) |
| Pop density x Health dis. | | | | | | -3.14 | | | | | | 0.34 |
| 2020 | | | | | | (-7.02 – 0.73) | | | | | | (-0.60 – 1.28) |
| Neuroticism x Openness | | | | | | 0.95** | | | | | | 0.09 |
| | | | | | | (0.36 – 1.54) | | | | | | (-0.04 – 0.22) |
| Neuroticism x | | | | | | 0.28 | | | | | | -0.02 |
| Conscientiousness | | | | | | (-0.35 – 0.91) | | | | | | (-0.14 – 0.10) |
| Constant | 68.75*** | 72.23*** | 67.28*** | 71.99*** | 72.00*** | 71.12*** | -0.50*** | -1.80*** | -0.64*** | -1.79*** | -1.89*** | -2.00*** |
| | (68.70 – 68.80) | (69.61 – 74.86) | (66.94 – 67.63) | (69.69 – 74.29) | (70.27 – 73.74) | (69.22 – 73.02) | (-0.51 – -0.49) | (-2.17 – -1.42) | (-0.71 – -0.56) | (-2.17 – -1.42) | (-2.28 – -1.51) | (-2.41 – -1.59) |
| Observations | 2,083 | 2,083 | 2,083 | 2,083 | 2,083 | 2,083 | 2,083 | 2,083 | 2,083 | 2,083 | 2,083 | 2,083 |
| Adjusted $R^2$ | 0.31 | 0.69 | 0.54 | 0.73 | 0.74 | 0.76 | 0.19 | 0.45 | 0.24 | 0.45 | 0.46 | 0.51 |

*Note.* OLS regressions at the county level. Independent variables were standardized. Regression coefficients and their 95% CIs are provided. All models include population density and state fixed effects as covariates. State fixed effects are not depicted for the sake of brevity. Model 1 only includes covariates. Model 2 includes main effects of the structural factors (economic deprivation, ethnic diversity, and health disadvantage). Model 3 includes main effects of personality tratis (neuroticism, openness, and conscientiousness). Model 4 includes all personality and structural factor main effects. Model 5 additionally includes the interaction between neuroticism and each structural factor. Model 5 additionally includes neuroticism's interaction with each structural factor. Model 6 adds the interactions between the covariates (population density, openness, conscientiousness,) and focal independent variables (neuroticism and structural factors). 2020 Trump gains = Gains in the two-party Republican vote share between the 2016 and 2020 elections.
$^{*}p < .05$. $^{**}p < .01$. $^{***}p < .001$.



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Model 1 revealed that state-fixed effects and population density explain roughly 20–40% of total variance in votes for Trump in 2016 and 2020. Model 2 showed that contextual factors explain an additional 30–40% of variance in Trump's vote share and gains. More specifically, the economic deprivation factor (2016 votes: $b$ = 11.36, $p$ < .001; 2016 gains: $b$ = 3.69, $p$ < .001; 2020 votes: $b$ = 12.42, $p$ < .001; 2020 gains: $b$ = 0.69, $p$ < .001) explained voting such that a one standard deviation increase in economic deprivation led to a 3.69%-point gain for Trump in 2016 compared to Mitt Romney in 2012, an 11.36%-point greater voting share for Trump in 2016 compared to Hillary Clinton in 2016, a 0.69%-point gain for Trump in 2020 compared to his own performance in 2016, and a 12.42%-point greater voting share for Trump in 2020 compared to Biden in 2020. Regarding the ethnic diversity factor, more ethnically diverse counties were less likely to vote for Trump in 2016 and 2020 and were also the counties where Trump showed losses over Romney (2016 votes: $b$ = -5.67, $p$ < 0.001; 2020 votes: $b$ = -2.79, $p$ < .001; 2016 gains: $b$ = -1.12, $p$ < .001). Unexpectedly however, Trump showed *gains* in ethnically diverse counties from 2016 to 2020 ($b$ = 1.16, $p$ < .001). The health disadvantage factor also showed a mixed relationship between Trump's vote share versus his gains over previous years. Counties with worse health conditions were less likely to vote for Trump in 2016 and 2020 as compared to the Democratic candidate in those years ($b$ = -5.74, $p$ < .001; $b$ = -6.16, $p$ < .001), but Trump showed *gains* in these counties compared to the Republican candidate in the previous election ($b$ = 0.75, $p$ < .01; $b$ = 0.42, $p$ < .01).

In Model 3, we substituted the three structural factors with three personality traits: neuroticism, conscientiousness, and openness. Compared to the baseline model 1, the traits explained an additional 10–20% of variance in votes for Trump. Our focal trait—regional neuroticism—was positively associated with Trump votes and gains in both elections (2016 votes: $b$ = 4.27, $p$ < .001; 2020 votes: $b$ = 4.73, $p$ < .001; 2016 gains: $b$ = 1.75, $p$ < .001; 2020 gains: $b$ = 0.46, $p$ < .001). Consistent with prior work, openness was negatively associated with Trump votes and gains in both elections. Conscientiousness showed weaker relations with voting, positively predicting Trump gains but not Trump votes.

In Model 4, we jointly include the personality traits and structural factors. Most of the results from the Models 2 and 3 stay unchanged except that the neuroticism trait no longer significantly predicts Trump gains in 2020. Additionally, openness and conscientiousness do not consistently predict Trump gains in 2016 and 2020 in this model.

## Interactive Effects of Structural Factors and Regional Personality on Trump Voting

Models 5 and 6 investigated interactive effects of the personality traits with each of the three structural factors: economic deprivation, ethnic diversity, and health disadvantage. Model 5 included only the neuroticism interactions with the three structural factors,

whereas Model 6 included interaction between all three traits (neuroticism, openness, and conscientiousness) and structural factors (economic deprivation, ethnic diversity, and health disadvantage). Therefore, from the latter model we only discuss the openness and conscientiousness interactions.

The interaction between neuroticism and the economic deprivation factor negatively predicted Trump's vote share in 2016 but positively predicted gains in both elections (2016 votes: $b$ = -0.7, $p$ < .05; 2016 gains: $b$ = 0.38, $p$ < .001; 2020 votes: $b$ = -0.57, $p$ > .05; 2020 gains: $b$ = .28, $p$ < 0.01). Neuroticism had weaker predictive effect on Trump 2016 votes in economically disadvantaged regions (at +1 SD; 2016 votes: $b$ = 0.88, 95% CI [-0.09, 1.85], $p$ > .05) than in economically advantaged regions (at -1 SD; 2016 votes: $b$ = 2.29, 95% CI [1.10, 3.48], $p$ < .001). For 2020 the interaction between neuroticism and economic deprivation was insignificant. Conversely, neuroticism was a stronger predictor of Trump gains in economically disadvantaged regions (at +1 SD; 2016 gains: $b$ = 0.84, 95% CI [0.61, 1.08], $p$ < .001; 2020 gains: $b$ = 0.31, 95% CI [0.13, 0.49], $p$ < .001) than in economically advantaged regions (at -1 SD; 2016 gains: $b$ = 0.08, 95% CI [-0.31, 0.47], $p$ > .05; 2020 Trump gains: $b$ = -0.24, 95% CI [-0.53, 0.05], $p$ > 0.05).

The interaction between neuroticism and the ethnic diversity factor positively predicted Trump votes in 2016 and 2020 (2016 votes: $b$ = 1.21, $p$ < .001; 2020 votes: $b$ = 0.75, $p$ < 0.05), but not Trump gains in both elections. Neuroticism was a stronger predictor of Trump votes in ethnically diverse regions (at +1 SD; 2016 votes: $b$ = 2.79, 95% CI [1.82, 3.77], $p$ < .001; 2020 votes: $b$ = 2.40, 95% CI [1.35, 3.45], $p$ < .001) than in less ethnically diverse regions (at -1 SD; 2016 votes: $b$ = 0.37, 95% CI [-0.82, 1.57], $p$ > 0.05; 2020 Trump votes: $b$ = 0.89, 95% CI [-0.11, 1.91], $p$ > 0.05).

Similarly, the interactions between neuroticism and the health disadvantage factor positively predicted Trump votes in 2016 and 2020 (2016 votes: $b$ = 1.35, $p$ < .001; 2020 votes: $b$ = 1.71, $p$ < 0.05), but not Trump gains in both elections. Neuroticism was a stronger predictor of Trump votes in regions high on health disadvantage (at +1 SD; 2016 votes: $b$ = 2.93, 95% CI [2.01, 3.85], $p$ < .001; 2020 votes: $b$ = 3.35, 95% CI [2.51, 4.20], $p$ < .001) than in regions low on health disadvantage (at -1 SD; 2016 votes: $b$ = 0.24, 95% CI [-0.89, 1.37], $p$ > .05; 2020 Trump votes: $b$ = -0.06, 95% CI [-1.25, 1.14], $p$ > .05]).

Taken together, the interactions show the expected pattern: neuroticism tended to exacerbate the strength of the relationship between structural factors and Trump voting. However, size of the interaction coefficients demonstrate that the interaction effects were weak, not explaining much variance in voting beyond main effects of personality and structural factors. Moreover, the interaction effects were not particularly robust across dependent variables (vote share and gains) or after accounting for robustness checks (as summarized in Table 9).

Therefore, we focus our interpretation of the results on the large and robust main effects of neuroticism and structural factors on voting. Openness and conscientiousness also interacted with structural factors on votes for Trump, consistent with interactionist

theories. We do not interpret these interactions because they also were not particularly robust or consistent, and we did not have specific predictions regarding interactions with other personality traits.

## Group-Based Dominance Effects on Trump Voting

As previously mentioned, variables that capture a tendency towards group-based dominance like right-wing authoritarianism (RWA), social dominance orientation (SDO) as well as implicit race and gender bias have been shown to be strong predictors of voting for Trump. Similarly, people high in extraversion and low in agreeableness may be particularly likely to engage in aggressive behavior. To test these alternative explanations, we regressed Trump vote shares and gains on these variables in Table 6. Model 1 includes RWA, SDO, and the implicit race and gender bias in a model with state fixed effects and population density. Model 2 adds the two remaining Big Five traits, extraversion and agreeableness. Model 3 adds the remaining main effects from our focal analyses (neuroticism, openness, conscientiousness, and structural factors). We do not include interaction effects because our previous analyses show that these were not robust.

Across the three models, implicit anti-Black bias positively predicted Trump vote share in 2016, his gains in 2016, and his vote share in 2020. However, this relationship did not hold for Trump's gains in 2020, when anti-Black bias was either unrelated or negatively related to Trump performance. This result is consistent with the previous finding showing that Trump made gains in 2020 over his performance in 2016 in more ethnically diverse regions. Right-wing authoritarianism also consistently predicted Trump's vote share in 2016 and 2020. Unexpectedly, however, the relationship between right-wing authoritarianism and Trump's vote gains in 2016 and 2020 became negative in Model 3, which includes neuroticism and our structural factors. Contrary to past research, SDO and implicit gender bias did not consistently predict Trump voting.

Perhaps most importantly, the main effects of neuroticism, economic deprivation, ethnic diversity, and health disadvantage largely held when accounting for variables capturing group-based dominance. Moreover, the effect size of our focal variables were comparable to or larger than the effect size of the group-based dominance variables.

**Table 6**

*Regressions on 2016 and 2020 Trump Votes and Gains Accounting for Group-Based Dominance (Counties)*

| | 2016 Trump votes | | | 2016 Trump gains | | | 2020 Trump votes | | | 2020 Trump gains | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Variable** | **(1)** | **(2)** | **(3)** | **(1)** | **(2)** | **(3)** | **(1)** | **(2)** | **(3)** | **(1)** | **(2)** | **(3)** |
| Race IAT | 7.97*** | 8.04*** | 4.63*** | 0.72*** | 0.80*** | 0.15 | 7.63*** | 7.72*** | 4.39*** | -0.34* | -0.31* | -0.01 |
| | (6.78 – 9.16) | (6.73 – 9.34) | (3.38 – 5.88) | (0.34 – 1.11) | (0.40 – 1.19) | (-0.18 – 0.48) | (6.56 – 8.70) | (6.55 – 8.90) | (3.29 – 5.49) | (-0.62 – -0.07) | (-0.61 – -0.02) | (-0.24 – 0.23) |
| Gender-Career IAT | 0.57 | 0.56 | 0.44 | 0.25* | 0.23 | 0.20 | 0.53 | 0.51 | 0.45 | -0.04 | -0.05 | -0.00 |
| | (-0.15 – 1.29) | (-0.20 – 1.32) | (-0.19 – 1.08) | (0.03 – 0.47) | (-0.00 – 0.47) | (-0.01 – 0.40) | (-0.16 – 1.22) | (-0.23 – 1.25) | (-0.14 – 1.05) | (-0.19 – 0.11) | (-0.21 – 0.10) | (-0.11 – 0.11) |
| RWA | 6.19*** | 6.15*** | 1.98*** | 1.89*** | 1.85*** | -0.34** | 6.41*** | 6.35*** | 1.79** | 0.22* | 0.20* | -0.32*** |
| | (5.11 – 7.27) | (5.07 – 7.24) | (0.98 – 2.98) | (1.51 – 2.26) | (1.51 – 2.19) | (-0.59 – -0.10) | (5.34 – 7.47) | (5.29 – 7.42) | (0.77 – 2.81) | (0.03 – 0.40) | (0.02 – 0.38) | (-0.50 – -0.15) |
| SDO | 0.18 | 0.20 | 0.37 | -0.19 | -0.17 | 0.04 | 0.04 | 0.06 | 0.33 | -0.14 | -0.14 | -0.10 |
| | (-0.50 – 0.86) | (-0.47 – 0.86) | (-0.14 – 0.87) | (-0.46 – 0.09) | (-0.43 – 0.09) | (-0.13 – 0.20) | (-0.58 – 0.66) | (-0.54 – 0.67) | (-0.11 – 0.76) | (-0.33 – 0.04) | (-0.32 – 0.05) | (-0.25 – 0.06) |
| Agreeableness | | 0.07 | -0.96 | | 0.16 | -0.42* | | 0.21 | -0.82 | | 0.14 | 0.31 |
| | | (-1.26 – 1.40) | (-2.00 – 0.08) | | (-0.42 – 0.74) | (-0.81 – -0.02) | | (-1.10 – 1.51) | (-1.73 – 0.10) | | (-0.17 – 0.44) | (-0.05 – 0.68) |
| Extraversion | | -1.12* | 0.29 | | -1.02*** | 0.25 | | -1.36** | 0.44 | | -0.24* | 0.15 |
| | | (-2.06 – -0.18) | (-0.62 – 1.20) | | (-1.49 – -0.54) | (-0.05 – 0.55) | | (-2.30 – -0.43) | (-0.43 – 1.30) | | (-0.43 – -0.05) | (-0.08 – 0.38) |
| Neuroticism | | | 2.00** | | | 1.03*** | | | 2.38*** | | | 0.38** |
| | | | (0.76 – 3.24) | | | (0.58 – 1.48) | | | (1.28 – 3.48) | | | (0.15 – 0.60) |
| Openness | | | -3.14*** | | | -0.19 | | | -3.02*** | | | 0.11 |
| | | | (-4.29 – -1.99) | | | (-0.50 – 0.13) | | | (-3.95 – -2.09) | | | (-0.22 – 0.44) |
| Conscientiousness | | | 1.05* | | | 0.55** | | | 0.83 | | | -0.28 |
| | | | (0.01 – 2.09) | | | (0.23 – 0.86) | | | (-0.04 – 1.69) | | | (-0.56 – 0.01) |
| Economic deprivation | | | 6.65*** | | | 3.20*** | | | 7.32*** | | | 0.46** |
| | | | (5.43 – 7.87) | | | (2.75 – 3.65) | | | (6.16 – 8.49) | | | (0.07 – 0.84) |
| Ethnic diversity | | | -4.93*** | | | -0.95** | | | -2.33*** | | | 1.33*** |
| | | | (-6.98 – -2.88) | | | (-1.52 – -0.38) | | | (-3.77 – -0.89) | | | (0.76 – 1.89) |
| Health disadvantage | | | -2.96** | | | 1.05** | | | -3.38** | | | 0.54 |
| | | | (-4.72 – -1.20) | | | (0.37 – 1.73) | | | (-5.12 – -1.64) | | | (-0.19 – 0.88) |
| Population density | -0.63* | -0.65* | -0.10 | -0.26** | -0.27*** | 0.02 | -0.56* | -0.58** | 0.00 | 0.07 | 0.07 | 0.10** |
| | (-1.18 – -0.09) | (-1.18 – -0.12) | (-0.23–0.04) | (-0.42 – -0.10) | (-0.43 – -0.12) | (-0.03 – 0.07) | (-1.00 – -0.12) | (-1.00 – -0.15) | (-0.13 – 0.14) | (-0.04 – 0.19) | (-0.04 – 0.19) | (0.02 – 0.18) |
| Constant | 62.93*** | 63.26*** | 72.92*** | 0.82*** | 1.09*** | 3.79*** | 60.24*** | 60.60*** | 70.28*** | -2.69*** | -2.66*** | -2.34*** |
| | (61.42 – 64.43) | (61.76 – 64.75) | (70.60 – 75.24) | (0.41 – 1.23) | (0.63 – 1.55) | (3.15 – 4.43) | (58.79 – 61.68) | (59.13 – 62.07) | (68.10 – 72.46) | (-2.98 – -2.40) | (-2.93 – -2.38) | (-2.66 – -2.02) |



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| | 2016 Trump votes | | | 2016 Trump gains | | | 2020 Trump votes | | | 2020 Trump gains | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Variable** | **(1)** | **(2)** | **(3)** | **(1)** | **(2)** | **(3)** | **(1)** | **(2)** | **(3)** | **(1)** | **(2)** | **(3)** |
| Observations | 1,096 | 1,096 | 1,096 | 1,096 | 1,096 | 1,096 | 1,096 | 1,096 | 1,096 | 1,096 | 1,096 | 1,096 |
| Adjusted $R^2$ | 0.59 | 0.60 | 0.79 | 0.50 | 0.51 | 0.82 | 0.61 | 0.61 | 0.81 | 0.21 | 0.22 | 0.46 |

*Note*. OLS regressions at the county level. Independent variables were standardized. Regression coefficients and their 95% CIs are provided. All models include population density and state fixed effects as covariates. State fixed effects are not depicted for the sake of brevity. Model 1 only includes covariates and main effects of IAT race, IAT gender, RWA, and SDO. Model 2 additionally includes the Big Five traits not included in previous models (agreeableness and extraversion). Model 3 adds the main effects of personality (neuroticism, openness, and conscientiousness) and structural factors (economic deprivation, ethnic diversity, health disadvantage) included in previous tables. Race IAT = Implicit Association Test measuring implicit anti-Black bias; Gender-Career IAT = Implicit Association Test measure implicit gender-career bias; SDO = Social dominance orientation; RWA = Right-wing authoritarianism.
$^{*}p < .05$. $^{**}p < .01$. $^{***}p < .001$.



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## Analyses of the 2016 Primary Elections: Comparisons to Sanders, Kasich, Cruz, and Rubio

To investigate whether Trump's voter base is similar to that of other primary candidates, we analyzed Trump's vote share in the 2016 primary elections, comparing the characteristics of regions that voted for Trump to those that voted for Bernie Sanders, John Kasich, Ted Cruz, and Marco Rubio. Results of these analyses are depicted in Table 7 and Table 8. They suggest some similarities but also notable differences between Trump's voter base and those of his competitors.[7]

Beginning with comparisons between Sanders and Trump, more neurotic counties were indeed more likely to vote in 2016 for both Sanders ($b$ = 1.04, $p$ < .01) and Trump in the primaries ($b$ = 1.11, $p$ < .001). The same is true for the ethnic diversity factor where both Sanders (Model 4: $b$ = -3.94, $p$ < .001) and Trump in the general election received more votes in less ethnically diverse counties. However, neither economic disadvantage nor health conditions showed a clear relationship with Sanders's vote share, in contrast to the strong relationship of these factors with Trump in general election and partly in primary election voting. The maps in Figure 1 further show that the spatial distribution of neuroticism and economic disadvantage (marked in dark blue) overlap fairly substantially with regions that voted for Trump but overlap to a much lesser extent with regions that voted for Sanders.

7) Note that we included five models in Table 6 rather than six models as we did in Table 4 and Table 5 because the fully saturated model with all interactions between independent variables and covariates did not show multicollinearity issues. Therefore, we did not need to include a model that drops the interactions with covariates (Model 5 in Table 4 and Table 5).

**Table 7**

*Regressions on 2016 Primary Elections Votes (Counties) – Sanders and Trump*

| | 2016 Sanders Primary Votes | | | | | 2016 Trump Primary Votes | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| **Variable** | **(1)** | **(2)** | **(3)** | **(4)** | **(5)** | **(1)** | **(2)** | **(3)** | **(4)** | **(5)** |
| Neuroticism | | | 0.62 | 1.04** | 0.52 | | | 2.30*** | 1.11*** | 1.38*** |
| | | | (-0.06 – 1.31) | (0.43 – 1.64) | (-0.05 – 1.09) | | | (1.65 – 2.94) | (0.49 – 1.73) | (0.73 – 2.02) |
| Openness | | | 0.90** | 0.46 | 0.43 | | | -1.15*** | 0.42 | 0.48* |
| | | | (0.24 – 1.56) | (-0.37 – 1.29) | (-0.42 – 1.27) | | | (-1.64 – -0.65) | (-0.02 – 0.85) | (0.08 – 0.88) |
| Conscientiousness | | | -1.76*** | -1.40*** | -1.22*** | | | 1.06*** | 0.51* | 0.47* |
| | | | (-2.53 – -1.00) | (-1.96 – -0.85) | (-1.70 – -0.75) | | | (0.58 – 1.54) | (0.10 – 0.92) | (0.11 – 0.83) |
| Economic deprivation 2020 | | -0.14 | | -0.45 | -0.22 | | 3.59*** | | 3.36*** | 3.08*** |
| | | (-1.33 – 1.05) | | (-1.94 – 1.04) | (-1.95 – 1.51) | | (2.97 – 4.20) | | (2.56 – 4.16) | (2.43 – 3.74) |
| Ethnic diversity 2016 | | -3.96*** | | -3.94*** | -3.85*** | | 0.61 | | 0.65 | 0.60 |
| | | (-5.20 – -2.71) | | (-5.22 – -2.66) | (-4.93 – -2.78) | | (-0.99 – 2.21) | | (-0.89 – 2.18) | (-0.64 – 1.84) |
| Health disadvantage 2016 | | 0.05 | | 0.47 | 0.52 | | 0.72 | | 0.65 | 0.57 |
| | | (-1.80 – 1.89) | | (-1.23 – 2.17) | (-0.78 – 1.82) | | (-0.59 – 2.03) | | (-0.65 – 1.94) | (-0.61 – 1.75) |
| Population density 2016 | -3.33 | -0.97 | -4.26 | -1.71 | 2.00 | -3.80 | 0.12 | -1.92 | -0.14 | -2.46 |
| | (-9.35 – 2.69) | (-6.29 – 4.34) | (-10.23 – 1.71) | (-6.91 – 3.48) | (-9.07 – 13.08) | (-9.17 – 1.58) | (-3.59 – 3.83) | (-6.20 – 2.37) | (-3.61 – 3.34) | (-6.59 – 1.68) |
| Neuroticism x Ec. dep. 2016 | | | | | 0.28 | | | | | -0.58 |
| | | | | | (-0.58 – 1.14) | | | | | (-1.18 – 0.02) |
| Openness x Ec. dep. 2016 | | | | | 0.05 | | | | | 0.12 |
| | | | | | (-0.54 – 0.64) | | | | | (-0.43 – 0.66) |
| Conscientiousness x Ec. dep. 2016 | | | | | 0.45 | | | | | -0.07 |
| | | | | | (-0.15 – 1.05) | | | | | (-0.54 – 0.40) |
| Pop density x Ec. dep. 2016 | | | | | -1.46 | | | | | 2.08*** |
| | | | | | (-3.25 – 0.32) | | | | | (1.04 – 3.11) |
| Neuroticism x Ethnic div. 2016 | | | | | 0.01 | | | | | 0.14 |
| | | | | | (-0.94 – 0.97) | | | | | (-0.33 – 0.61) |
| Openness x Ethnic div. 2016 | | | | | -0.48 | | | | | -0.16 |
| | | | | | (-0.98 – 0.03) | | | | | (-0.56 – 0.25) |
| Conscientiousness x Ethnic div. 2016 | | | | | -0.44* | | | | | 0.22 |
| | | | | | (-0.80 – -0.08) | | | | | (-0.17 – 0.62) |



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| | 2016 Sanders Primary Votes | | | | | 2016 Trump Primary Votes | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| **Variable** | **(1)** | **(2)** | **(3)** | **(4)** | **(5)** | **(1)** | **(2)** | **(3)** | **(4)** | **(5)** |
| Pop density x Ethnic div. 2016 | | | | | -3.62 | | | | | 4.42** |
| | | | | | (-9.36 – 2.11) | | | | | (1.88 – 6.96) |
| Neuroticism x Health dis. 2016 | | | | | 0.25 | | | | | 0.48 |
| | | | | | (-0.78 – 1.27) | | | | | (-0.42 – 1.38) |
| Openness x Health dis. 2016 | | | | | 0.44 | | | | | -0.69*** |
| | | | | | (-0.35 – 1.22) | | | | | (-1.02 – -0.37) |
| Conscientiousness x Health dis. 2016 | | | | | -0.53* | | | | | 0.24 |
| | | | | | (-1.02 – -0.03) | | | | | (-0.12 – 0.60) |
| Pop density x Health dis. 2016 | | | | | 2.89 | | | | | -3.08** |
| | | | | | (-1.62 – 7.39) | | | | | (-4.89 – -1.27) |
| Neuroticism x Openness | | | | | -0.03 | | | | | 0.42* |
| | | | | | (-0.65 – 0.58) | | | | | (0.08 – 0.76) |
| Neuroticism x Conscientiousness | | | | | 0.15 | | | | | -0.30 |
| | | | | | (-0.35 – 0.65) | | | | | (-0.76 – 0.16) |
| Constant | 21.26*** | 24.12*** | 21.78*** | 24.14*** | 24.50*** | 47.86*** | 45.39*** | 47.55*** | 45.59*** | 45.38*** |
| | (20.94 – 21.58) | (22.37 – 25.87) | (21.32 – 22.23) | (22.64 – 25.64) | (22.97 – 26.02) | (47.58 – 48.15) | (44.01 – 46.77) | (47.23 – 47.87) | (44.25 – 46.92) | (44.11 – 46.66) |
| Observations | 1,932 | 1,932 | 1,932 | 1,932 | 1,932 | 1,901 | 1,901 | 1,901 | 1,901 | 1,901 |
| Adjusted $R^2$ | 0.67 | 0.70 | 0.69 | 0.71 | 0.72 | 0.78 | 0.83 | 0.80 | 0.83 | 0.84 |

*Note.* OLS regressions at the county level. Independent variables were standardized. Regression coefficients and their 95% CIs are provided. All models include population density and state fixed effects as covariates. State fixed effects are not depicted for the sake of brevity. Model 1 only includes covariates. Model 2 includes main effects of the economic deprivation, ethnic diversity, and health disadvantage factors. Model 3 includes main effects of neuroticism, openness, and conscientiousness. Model 4 includes all main effects of neuroticism, openness, conscientiousness, and structural factors. Model 5 additionally includes neuroticism's interaction with the economic deprivation, ethnic diversity, and health disadvantage factors as well as interactions between all covariates (openness, conscientiousness, population density) and all three structural factors. 2016 Sanders Primary votes = share of Sanders votes as percentage of all Democratic candidates' votes; 2016 Trump Primary votes = share of Trump votes as percentage of all votes for Republican primary candidates.
$^{*}p < .05$. $^{**}p < .01$. $^{***}p < .001$.



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**Table 8**

*Regressions on 2016 Primary Elections Votes (Counties) – Kasich, Cruz, and Rubio*

| | 2016 Kasich Primary Votes | | | | | 2016 Cruz Primary Votes | | | | | 2016 Rubio Primary Votes | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Variable** | **(1)** | **(2)** | **(3)** | **(4)** | **(5)** | **(1)** | **(2)** | **(3)** | **(4)** | **(5)** | **(1)** | **(2)** | **(3)** | **(4)** | **(5)** |
| Neuroticism | | | -1.08*** | -0.16 | -0.18 | | | -0.46 | -0.74*** | -0.71** | | | -0.93** | -0.12 | -0.49* |
| | | | -1.56–-0.60 | -0.53–0.20 | -0.54–0.18 | | | -0.94–0.02 | -1.11– -0.38 | -1.18–-0.25 | | | -1.46–-0.40 | -0.39–0.14 | -0.91–-0.07 |
| Openness | | | 1.26*** | 0.02 | 0.14 | | | -1.03*** | -0.55** | -0.54** | | | 1.16*** | 0.09 | 0.07 |
| | | | 0.92–1.59 | -0.19–0.24 | -0.08–0.36 | | | -1.45–-0.61 | -0.88–-0.23 | -0.94–-0.14 | | | 0.72–1.61 | -0.24–0.43 | -0.28–0.41 |
| Conscientiousness | | | -0.43** | -0.05 | -0.11 | | | -0.28 | -0.21 | -0.22 | | | -0.40* | -0.09 | -0.03 |
| | | | -0.70–-0.16 | -0.25–0.15 | -0.35–0.13 | | | -0.72–0.16 | -0.55–0.13 | -0.60–0.17 | | | -0.71–-0.08 | -0.35–0.17 | -0.26–0.21 |
| Economic | | -2.86*** | | -2.78*** | -2.46*** | | 1.53*** | | 1.55*** | 1.41** | | -2.63*** | | -2.53*** | -2.24*** |
| deprivation. 2016 | | -3.31–-2.41 | | -3.25–-2.31 | -2.99–-1.93 | | 0.80–2.27 | | 0.79–2.31 | 0.59–2.23 | | -3.71–-1.55 | | -3.59–-1.47 | -3.15–-1.33 |
| Ethnic diversity | | 0.49 | | 0.48 | 0.33 | | -2.06*** | | -2.07*** | -1.77*** | | 0.29 | | 0.27 | -0.04 |
| 2016 | | -0.05–1.03 | | -0.05–1.01 | -0.15–0.81 | | -2.86–-1.26 | | -2.86–-1.28 | -2.42–-1.12 | | -0.44–1.01 | | -0.44–0.98 | -0.58–0.49 |
| Health | | -0.70 | | -0.70 | -0.78* | | -0.42 | | -0.38 | -0.30 | | -0.46 | | -0.46* | -0.19 |
| disadvantage. 2016 | | -1.43–0.03 | | -1.41–0.00 | -1.47–-0.08 | | -1.45–0.61 | | -1.38–0.62 | -1.20–0.60 | | -0.94–0.01 | | -0.91–-0.00 | -0.52–0.13 |
| Population density | 3.07 | -0.68 | 1.56 | -0.66 | 0.71 | -1.67* | 1.52* | -0.94 | 1.79* | -1.27 | 7.56*** | 3.12*** | 5.47*** | 3.07*** | 0.18 |
| 2016 | -0.17–6.31 | -2.54–1.17 | -0.94–4.05 | -2.47–1.16 | -2.20–3.63 | -2.97–-0.37 | 0.34–2.71 | -2.12–0.25 | 0.41–3.17 | -3.15–0.60 | 3.36–11.76 | 2.07–4.17 | 3.15–7.80 | 2.10–4.05 | -2.44–2.80 |
| Neuroticism x Ec. | | | | | 0.26 | | | | | -0.09 | | | | | 0.45* |
| dep. 2016 | | | | | -0.13–0.64 | | | | | -0.51–0.34 | | | | | 0.11–0.80 |
| Openness x Ec. dep. | | | | | -0.20 | | | | | -0.16 | | | | | -0.07 |
| 2016 | | | | | -0.49–0.08 | | | | | -0.62–0.30 | | | | | -0.55–0.41 |
| Conscientiousness x | | | | | -0.05 | | | | | 0.05 | | | | | 0.05 |
| Ec. dep. 2016 | | | | | | | | | | | | | | | |



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| | 2016 Kasich Primary Votes | | | | | 2016 Cruz Primary Votes | | | | | 2016 Rubio Primary Votes | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Variable** | **(1)** | **(2)** | **(3)** | **(4)** | **(5)** | **(1)** | **(2)** | **(3)** | **(4)** | **(5)** | **(1)** | **(2)** | **(3)** | **(4)** | **(5)** |
| | | | | | -0.35–0.24 | | | | | -0.49–0.60 | | | | | -0.36–0.46 |
| Pop density x Ec. | | | | | -1.64** | | | | | 0.52 | | | | | -3.05** |
| dep. 2016 | | | | | -2.61–-0.66 | | | | | -0.29–1.33 | | | | | -4.86–-1.24 |
| Neuroticism x | | | | | 0.05 | | | | | 0.36 | | | | | -0.69*** |
| Ethnic div. 2016 | | | | | -0.36–0.46 | | | | | -0.02–0.74 | | | | | -1.01–-0.38 |
| Openness x Ethnic | | | | | 0.07 | | | | | -0.38 | | | | | 0.37** |
| diversity 2016 | | | | | -0.14–0.29 | | | | | -0.89–0.13 | | | | | 0.13–0.61 |
| Conscientiousness x | | | | | 0.21 | | | | | -0.29 | | | | | -0.17 |
| Ethnic div. 2016 | | | | | -0.02–0.44 | | | | | -0.57–0.00 | | | | | -0.44–0.10 |
| Pop density x | | | | | -3.34*** | | | | | 2.55*** | | | | | -1.52 |
| Ethnic div. 2016 | | | | | -4.87–-1.81 | | | | | 1.15–3.95 | | | | | -5.08–2.03 |
| Neuroticism x | | | | | -0.24 | | | | | -0.43* | | | | | 0.20 |
| Health dis. 2016 | | | | | -0.57–0.08 | | | | | -0.83–-0.03 | | | | | -0.14–0.54 |
| Openness x Health | | | | | 0.03 | | | | | 0.59*** | | | | | 0.01 |
| dis. 2016 | | | | | -0.20–0.26 | | | | | 0.26–0.91 | | | | | -0.27–0.28 |
| Conscientiousness x | | | | | 0.04 | | | | | 0.13 | | | | | -0.23 |
| Health dis. 2016 | | | | | -0.21–0.29 | | | | | -0.25–0.51 | | | | | -0.56–0.10 |
| Pop density x | | | | | 2.23 | | | | | -0.76 | | | | | 1.06 |
| Health dis. 2016 | | | | | -0.21–4.68 | | | | | -2.38–0.87 | | | | | -0.33–2.44 |
| Neuroticism x | | | | | 0.05 | | | | | -0.17 | | | | | -0.20 |
| Openness | | | | | -0.17–0.26 | | | | | -0.41–0.07 | | | | | -0.43–0.03 |



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| | 2016 Kasich Primary Votes | | | | | 2016 Cruz Primary Votes | | | | | 2016 Rubio Primary Votes | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Variable** | **(1)** | **(2)** | **(3)** | **(4)** | **(5)** | **(1)** | **(2)** | **(3)** | **(4)** | **(5)** | **(1)** | **(2)** | **(3)** | **(4)** | **(5)** |
| Neuroticism x | | | | | 0.07 | | | | | 0.25 | | | | | 0.11 |
| Conscientiousness | | | | | -0.04–0.18 | | | | | -0.02–0.52 | | | | | -0.02–0.24 |
| Constant | 3.69*** | 5.09*** | 3.99*** | 5.08*** | 5.06*** | 20.32*** | 21.71*** | 20.11*** | 21.55*** | 21.40*** | 16.10*** | 17.25*** | 16.34*** | 17.24*** | 17.00*** |
| | 3.52–3.86 | 4.41–5.77 | 3.79–4.18 | 4.41–5.74 | 4.30–5.82 | 20.25–20.39 | 20.87–22.56 | 19.95–20.28 | 20.71–22.39 | 20.48–22.32 | 15.87–16.32 | 16.87–17.63 | 16.13–16.55 | 16.87–17.62 | 16.47–17.52 |
| Observations | 1,901 | 1,901 | 1,901 | 1,901 | 1,901 | 1,901 | 1,901 | 1,901 | 1,901 | 1,901 | 1,660 | 1,660 | 1,660 | 1,660 | 1,660 |
| Adjusted $R^2$ | 0.85 | 0.92 | 0.88 | 0.92 | 0.92 | 0.77 | 0.78 | 0.77 | 0.78 | 0.79 | 0.80 | 0.86 | 0.82 | 0.86 | 0.87 |

*Note*. OLS regressions at the county level. Independent variables were standardized. Regression coefficients and their 95% CIs are provided. All models include population density and state fixed effects as covariates. State fixed effects are not depicted for the sake of brevity. Model 1 only includes covariates. Model 2 includes main effects of the economic deprivation, ethnic diversity, and health disadvantage factors. Model 3 includes main effects of neuroticism, openness, and conscientiousness. Model 4 includes all main effects of neuroticism, openness, conscientiousness, and structural factors. Model 5 additionally includes neuroticism's interaction with the economic deprivation, ethnic diversity, and health disadvantage factors as well as interactions between all covariates (openness, conscientiousness, population density) and all three structural factors. 2016 Trump/Kasich/Cruz/Rubio Primary votes = share of Kasich/Cruz/Rubio votes as percentage of all votes for Republican primary candidates.

$^{*}p < .05$. $^{**}p < .01$. $^{***}p < .001$.



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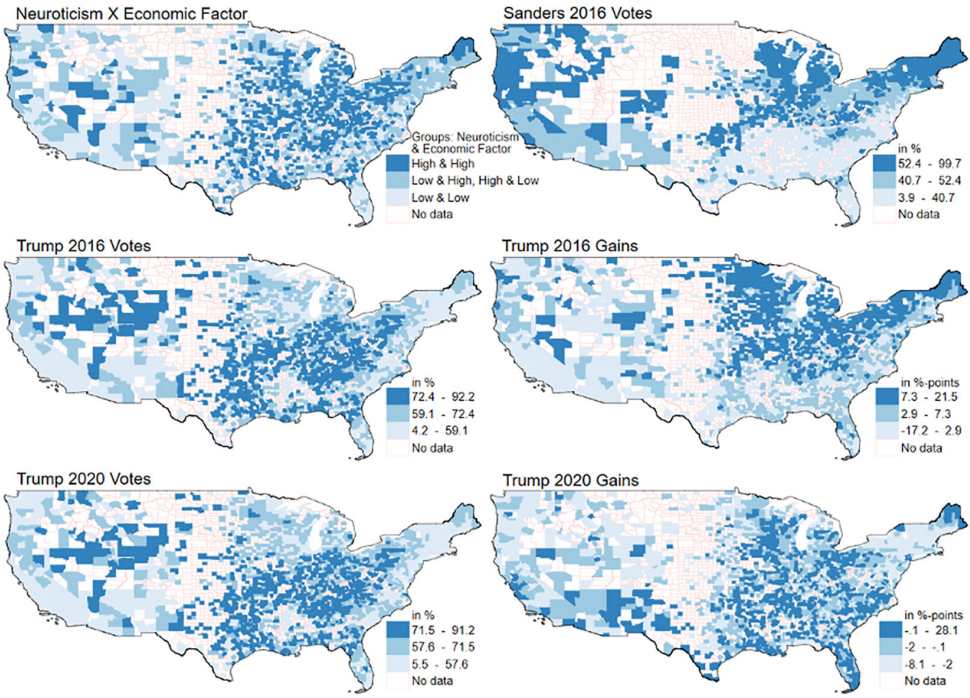
**Figure 1**

*Regional Distribution of Neuroticism, Economic Deprivation, and Voting (Counties)*




*Note.* As described in the data section, counties with fewer than $N$ = 100 respondents were dropped from the analysis and appear white on the maps. Trump 2016 gains = Gains in the two-party Republican vote share between the 2012 and 2016 elections; Trump 2020 gains = Gains in the two-party Republican vote share between the 2016 and 2020 elections. We include Sanders vote share in the 2016 primary elections as a point of comparison. In the maps depicting voting patterns, darker shades of blue represent greater vote shares and gains. In the Neuroticism x Economic Factor map (top left), dark blue represents counties that scored both above the median on neuroticism and above the median on economic deprivation; light blue represents counties that scored below the median on both neuroticism and economic deprivation; medium blue represents counties with either a combination of low neuroticism and high economic deprivation or high neuroticism and low economic deprivation.

Counties that voted for Sanders were also lower on conscientiousness ($b$ = -1.40, $p$ < .001), whereas counties that voted for Trump in 2016 tended to be lower on openness – a pattern not found in the Sander's primary election votes. Neuroticism also did not interact significantly with any of the structural factors on Sanders's vote share. Moreover, despite the significant main effects mentioned above, it is worth noting that most of the variance in voting for Bernie Sanders in the 2016 Democratic primaries—66.8%—was accounted for by geographical factors: population density and state fixed effects. Taken

together, regions that voted for Sanders were similar in some ways and different in others to regions that voted for Trump.

It is also interesting to note the major differences between the Republican candidates in the primaries. Not a single independent variable consistently predicted voting for Republican primary candidates. Indeed, there is no overlap between the profile of regions that voted for Trump and those that voted for Rubio and Kasich. In fact, counties that voted for Kasich and Rubio tended to have *less* economic deprivation. However, the profile of counties that voted for Cruz is somewhat similar to those that voted for Trump in the general election, characterized by high neuroticism, low openness, high economic deprivation, and low ethnic diversity.

Interestingly, there are some differences between the determinants of Trump's 2016 general election voting share and his primary voting share. While neuroticism and economic deprivation are significant predictors in both elections, neither ethnic diversity, health disadvantage, nor openness predicted Trump's primary results. One reason for the discrepancies between primary and general election results could be that Trump's campaign changed somewhat over time to appeal to additional voting groups. A related interpretation is that the regions that contributed to Trump's nomination are not exactly the same as those that contributed to his general election win.

## Summary of Findings with Robustness Checks

As noted in the Methods, spatial analyses require unique considerations such as including appropriate controls like state fixed effects, as we included in the models reported above. In addition, we conducted robustness checks to account for spatial autocorrelation (by running analyses with spatial lags on the independent variables using the normalized inverse of distances between regions), the potential MAUP problem (by conducting analyses at the CBSA level), and non-representativeness of the personality data (by weighting respondents by age and gender). Full results of these analyses are reported in the Supplementary Materials and summarized in Table 9.

**Table 9**

*Summary of Findings with Robustness Checks: 2016 and 2020 General Elections*

| | Trump 2016 Votes | | | | | Trump 2016 Gains | | | | | Trump 2020 Votes | | | | | Trump 2020 Gains | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Variable** | **(1)** | **(2)** | **(3)** | **(4)** | **(5)** | **(1)** | **(2)** | **(3)** | **(4)** | **(5)** | **(1)** | **(2)** | **(3)** | **(4)** | **(5)** | **(1)** | **(2)** | **(3)** | **(4)** | **(5)** |
| **Personality Main Effects** | | | | | | | | | | | | | | | | | | | | |
| Neuroticism | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | | + | | | + |
| Openness | - | - | - | - | - | | | + | | | - | - | - | - | - | | | | | |
| Conscientiousness | - | - | | | + | | | + | | + | - | - | | | | | | | | |
| **Structural Factor Main Effects** | | | | | | | | | | | | | | | | | | | | |
| Economic deprivation | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| Ethnic diversity | - | - | - | | - | - | - | - | - | - | - | - | - | | - | + | + | + | + | + |
| Health disadvantage | - | - | - | - | - | + | + | + | + | + | - | - | - | - | - | + | + | + | + | + |
| **Interactions** | | | | | | | | | | | | | | | | | | | | |
| N x Economic deprivation | - | - | | - | / | + | + | + | | / | | - | | | / | + | + | | + | / |
| N x Ethnic diversity | + | + | + | | / | | - | | - | / | + | + | + | | / | | | - | | / |
| N x Health disadvantage | + | + | + | + | / | | | | | / | + | + | + | + | / | | | | | / |

*Note.* Summary of regression results examining personality traits, structural factors, and the neuroticism X structural factor interactions on voting behavior in 2016 and 2020. Column 1 refers to the focal county-level regressions reported in the manuscript model (Tables 4–6). Column 2 controls for spatial autocorrelation (Table S6 and S7). Column 3 used weighted traits to improve representativeness of the personality sample (Tables S9 and S10). Column 4 refers to regressions at the CBSA level (Tables S3 and S4). Column 5 controls for group-based dominance variables at the county level (Table 6), which did not include interaction terms (as indicated by /). + denotes positive significant effects at the $p < .05$ level. - denotes negative significant effects at the $p < .05$ level. Blank cells denote non-significant effects. See Supplementary Materials for further details.

As is evident from the table, the main effects of neuroticism and the structural factors on voting for Trump were consistent across nearly all robustness checks and dependent variables. Higher neuroticism, more economic disadvantage, and lower ethnic diversity predicted Trump voting. Worse health predicted more Trump gains but fewer Trump votes in 2016 and 2020. Of the 80 main effects of neuroticism and structural factors depicted in Table 9, only three robustness checks failed: Ethnic diversity did not predict Trump's vote share in 2016 and 2020 at the CBSA level, and neuroticism did predict Trump gains in 2020 in the spatial autocorrelation setting. We also note that neuroticism did not predict Trump gains in 2020, and *greater* ethnic diversity predicted Trump's gains in 2020, two findings which were consistent across robustness checks. In contrast to the robustness of the main effects, our focal interaction effects between neuroticism and the structural factors on Trump voting were less consistent and robust.

## Discussion

To many observers, Donald Trump's rise was surprising, but the roots of his support corroborate foundational and modern theories of authoritarianism. Regions that were more prone to negative emotionality (as captured by higher neuroticism) and that were experiencing threatening structural conditions (as captured by 18 variables reflecting economic deprivation, lack of ethnic diversity, and health disadvantage) were those most likely to vote for Trump. In fact, regional neuroticism, economic deprivation, and lack of ethnic diversity predicted voting for Trump even after accounting for geographic confounds (e.g., population density, spatial autocorrelation), other personality traits (e.g., conscientiousness, openness), and measures of group-based dominance (e.g., social dominance orientation). Moreover, these findings generalized in exploratory and confirmatory pre-registered analyses, across regional levels (i.e., counties and CBSAs), to the population as a whole (i.e., when weights were used to make the sample more representative), and across election years (i.e., 2016 and 2020). The fact that the same kinds of regions were likely to vote for Trump in 2016 and 2020 demonstrates that these regions' preference was not merely for an anti-incumbent candidate. In short, both threat from internal psychological dispositions *and* external structural circumstances are robustly related to Trump voting (Onraet, Dhont, & Van Hiel, 2014).

Our findings with regard to neuroticism speak to a large and contradictory literature on the role of negativity bias and negative emotions in political behavior (Hibbing et al., 2014b; Hibbing, Smith, & Alford, 2014a; Johnston & Madson, 2022). We highlight how neuroticism can be understood as a unifying pathway through which disparate negative emotions like fear and anger predict voting for leaders like Trump. At the same time, neuroticism is a stable trait, suggesting that enduring emotional dispositions, and not just fleeting affective states, have important implications for voting behavior. It is remarkable that a psychological disposition that, on its face, contains no political content is, at least under certain conditions, so strongly related to voting behavior. That said, neuroticism did not predict Trump's gains in 2020, perhaps because Trump support was already so high in these regions in 2016.

Neuroticism and threatening structural factors were not only robustly related to Trump voting, but they were also *uniquely* related to Trump voting. The kinds of regions that voted for Trump were different from the kinds of regions that voted for more traditional conservative candidates and for left-wing populist candidate Bernie Sanders. The first evidence for this claim comes from analyses comparing Trump's 2016 general election performance to the 2012 general election performance of previous Republican presidential nominee Mitt Romney. Trump gained votes over Romney in regions high on neuroticism, economic deprivation, health disadvantage, and low on ethnic diversity, which suggests that Trump was more appealing to these regions than Romney was. The second set of analyses showing Trump's unique appeal compared his 2016 primary election performance to the performance of 2016 Republican primary candidates John

Kasich, Marco Rubio, Ted Cruz, and 2016 Democratic primary candidate Bernie Sanders. There was no overlap between the characteristics of regions that voted for Trump and those that voted for Kasich and Rubio, although there was some overlap in the characteristics of regions that voted for Trump and those that voted for rivals Cruz and Sanders. For example, unlike Kasich and Rubio who won votes in *less* economically deprived regions, both Trump and Cruz won more votes in *more* economically deprived regions. Similarly, both Trump and Sanders won more votes in less ethnically diverse regions in 2016. That said, regions that voted for Trump in the general election showed a unique confluence of characteristics. Only Trump won votes in regions experiencing high neuroticism, economic deprivation, *and* lack of ethnic diversity—some of the highest levels of psychological and structural threat we were able to capture. In short, Trump voting is not synonymous with right-wing voting nor with left-wing populist voting. The fact that regional levels of self-reported right-wing authoritarianism predicted Trump voting only reinforces this point.

## History Does Not Repeat but It Rhymes

Our findings suggest that Trump voting can be conceptualized as authoritarian voting and is explained by an array of regional factors that vary psychologically and structurally (Jost et al., 2003). Intellectually, this approach stems from the work of scholars from the Frankfurt School who sought to understand the roots of authoritarianism in the 20th century. Our findings are particularly consonant with Frankfurt scholar Erich Fromm's work. In his book *Escape from Freedom* (1941), which he published after leaving Nazi Germany and a decade before Adorno and colleagues published *The Authoritarian Personality*, Fromm "bridges the gap between economics and psychology and shows how no theory which invokes only man's way of earning a living or man's human nature alone is sufficient," according to a review by Margaret Mead (Fromm, 1956). Like Fromm —whose book was titled '*Fear' of Freedom* in the UK—we emphasize the importance of negative emotions and structural conditions in explaining people's political choices

The work of scholars like Fromm, who sought to explain the rise of Nazism in the 20th century, has striking parallels in the modern-day context. Trump's base may be different from the voter base of his contemporary political rivals. Still, his voter base is uncannily similar in some respects to the voter base of the historical figure who instigated the modern study of authoritarianism—Adolf Hitler. In particular, regions that voted for Trump were not those experiencing the greatest economic hardships, just as people who voted for Hitler were not those hardest hit by the Great Depression (King et al., 2008). Instead, both leaders found support among those who have suffered economically but still have further to fall. In Trump's case, these regions have a high share of agriculture and manufacturing industries—regions that formerly drove the American economy but are struggling in the modern technology-based economy (as reflected by their low levels of income, college attainment, internet access, and migration). Importantly, these

economically deprived regions are *not* those with the highest poverty or unemployment. Similarly, quantitative archival analyses of German voting records show that "those who were hurt by the economy but were at little risk of unemployment…constituted the groups that gave the most disproportionate support to the Nazis," whereas "those who were unemployed or at high risk of becoming unemployed gave disproportionate support to the Communists or, to a lesser extent, to the Social Democrats" (King et al., 2008, pp. 952–953). That the *working* poor comprised much of the voter base of both Trump and Hitler is consistent with "last-place aversion" theories arguing that the second to last rung in the social ladder is a more psychological threatening position to occupy than the last rung (Gidron & Hall, 2017; Kuziemko et al., 2014).

Our factor analytic method painted a broad portrait of the threatening economic conditions that explain Trump's vote share and his performance gains over time. But one variable from the economic deprivation factor stood out: college degree attainment. An examination of zero-order correlations showed that lack of college attainment correlated more strongly than any other variable with Trump's vote share in 2016 and 2020, Trump's gains in 2016 over Romney's performance in 2012, and Trump's gains in 2020 over his previous performance in 2016. Therefore, boosting rates of college attainment by increasing college enrollment or retention (e.g., Talaifar et al., 2021) might be an important way to mitigate the threat of authoritarianism in the U.S. (Scott, 2022). This strategy is likely to be particularly effective because higher education improves other economic outcomes (Chetty et al., 2020) and racial attitudes (Wodtke, 2012, 2018).

## Intertwined Economic and Racial Roots of Trump Voting

As might be evident from the historical example described in the previous section, economic deprivation in Trump-supporting regions must be understood in the context of white people's perceptions that minorities' status is increasing and the antipathy that can result from such perceptions (Craig & Richeson, 2014; Wetts & Willer, 2018). Trump voting was not only disproportionally concentrated in regions that were high on economic deprivation but also in regions high on anti-Black bias and low ethnic diversity. That said, Trump voting was not higher in regions that had higher gender implicit bias or a more general preference for social inequality, as measured by social dominance orientation[8]. Together, these results suggest that purely economic accounts of Trump voting are insufficient and that antipathy toward specific ethnic minority groups is associated with Trump voting.

8) In addition, the economic deprivation factor (which was positively associated with Trump voting) was characterized by lower, not higher, income inequality. This may seem inconsistent with evidence that economic inequality undermines democracy and enhances support for strong leaders (e.g., Andersen, 2012; Sprong et al., 2019). Future research should examine whether such inconsistencies can be explained by differences in the level of analysis at which income inequality is measured. National inequality levels may be more predictive of preference for a strong leader than local levels.

Importantly, our method was not designed to determine the relative influence economic deprivation *versus* racial resentment, as these factors are so intimately intertwined (McGovern, Kirkland, & Blake, 2021). For instance, White people interpret race relations as a zero-sum game, such that their economic hardships are viewed as minorities' gains (Norton & Sommers, 2011). Another example of how economics and race relations are intertwined comes from research showing that contact with ethnic minorities may improve Whites' attitudes towards minorities and decrease their Trump support, but only in the context of economic prosperity (Knowles & Tropp, 2018). Therefore, claiming that one structural factor is more important than another is overly simplistic. Instead, a strength of our work is its synthesis of economic, racial, and health factors, showing that threatening circumstances of many kinds jointly predict voting behavior. Indeed, to reflect the fact that economic, demographic, and health-related conditions are enmeshed in the real world, all our variables were allowed to load on all three factors, and factors were allowed to correlate with each other.

Our analyses show that more ethnically diverse regions preferred Democratic presidential candidates Clinton in 2016 and Biden in 2020, and that ethnically diverse regions were less likely to vote for Trump than they were to vote for Mitt Romney in 2012. However, Trump performance improved in ethnically diverse regions, and anti-Black implicit bias did not positively predict Trump's gains in 2020 the way it did in 2016. Further work is needed to understand why Trump's performance improved in ethnically diverse regions. One possible explanation is that the Republican effort in 2020 to paint Democratic rival Joe Biden as a socialist might have been effective in provoking fear among some Hispanic community members who may have had experience with socialist regimes in their countries of origin (e.g., Cuba, Venezuela). Another interpretation is more mundane – Trump may have already been so popular in ethnically homogenous regions that the only places where he could improve his performance were ethnically diverse.

Regarding regions high on health disadvantage, Democratic presidential candidates in 2016 and 2020 outperformed Trump in these regions overall. This finding is consistent with theories arguing that people vote for the leaders that they believe can best address the given threat at hand (Brandt & Bakker, 2022; Eadeh & Chang, 2020), since Democrats have typically been those to expand access to healthcare. But once again, Trump seems to be improving his performance in regions with poor health. He performed better in regions high on health disadvantage in 2020 than he did in 2016, and health disadvantage predicted Trump's vote gains in 2016 over Romney's performance in 2012.

## Psychological Roots of Trump Support

Prior research shows an inconsistent relationship between neuroticism and right-wing voting behavior. Only recently has this relationship been robustly empirically documented (Obschonka et al., 2018). The recency and inconsistency of this link suggests that

neuroticism may only be related to right-wing voting under certain threat-activating circumstances. We do not find strong evidence for this moderation hypothesis. Trump voting does not seem to be the result of regional neuroticism *exacerbating* the effects of threatening structural conditions, or of structural conditions activating the latent threat-sensitivity of regions high on neuroticism. Instead, we find that regional neuroticism and threatening structural conditions contribute in an additive rather than interactive way to Trump's vote share and gains. This additive effect may seem surprising, but classic theories arguing that behavior is a function of both psychological and environmental factors did not specify exactly *how* psychological and environmental factors will combine to predict behavior (Kihlstrom, 2013; Lewin, 1951).

One promising avenue for future research would be to examine interactions at different levels of analysis. For instance, regional neuroticism may interact with threatening *national* conditions to predict voting behavior. Alternatively, *individuals'* neuroticism may interact with threatening regional conditions to predict voting behavior. Importantly, individual voting behavior might have different antecedents than regional voting behavior. From the present research, we can only conclude that psychological and structural characteristics of one's county and CBSA—not individual neuroticism or personal perceptions of threat—predict regional voting behavior. Drawing conclusions about individuals from this paper would be committing the ecological fallacy (Robinson, 1950). Moreover, it is possible that neuroticism has an opposite relationship to political behavior at the individual and regional levels. An individual's own neuroticism may predict less voting for Trump (Fortunato et al., 2018; Samek, 2017) while living in a region with many other people experiencing high levels of negative emotionality (independent of one's own experience) may predict more voting for Trump.

When it comes to other personality traits, openness and conscientiousness have, in past research, been most strongly linked to political ideology at the individual and regional levels (e.g., Garretsen et al., 2018; Gerber et al., 2010). Lack of openness to experience at the regional level was indeed robustly related to Trump's vote share in 2016 and 2020, similar to prior research. But lack of openness was not consistently related to Trump's gains over Romney, gains over his own performance, or voting for any primary candidate other than Cruz. Similarly, lack of conscientiousness at the regional level did negatively predict voting for Sanders, as expected. However, regional levels of conscientiousness were not consistently related to voting for Trump or other primary Republican candidates. We do not have a ready explanation for these findings, other than the fact that the strength of structural factors—explaining 25–40% of variance in voting—may overwhelm the ability of any single variable to explain even more regional variance in voting. That said, regional neuroticism consistently predicted Trump voting beyond the large effects of these structural variables.

## Limitations

Although we attempted to control for a wide variety of potential confounds, the most obvious limitation of this work is the lack of evidence for a causal role for psychological and structural factors on Trump voting. Indeed, recent research suggests that personality traits and political preferences can influence each other bidirectionally (Bakker, Lelkes, & Malka, 2021; Luttig, 2021). Moreover, one recent study showed that exposure to authoritarian speeches and messages causally increases meaning in life (Womick et al., 2021) but actually lowers positive affect and increases negative affect. If this is the case, then authoritarianism may support people's existential needs even as it worsens their emotional experience or, over the long-term, their neuroticism.

Moreover, the factors we studied are highly stable over time at the regional level, suggesting that the roots of Trump support have been long in the making (as was also the case for the roots of Nazi support; De Bromhead, Eichengreen, & O'Rourke, 2013). Such stable structural variables cannot be easily manipulated by experimenters. Even if feasible, manipulating psychological and structural factors in the lab or the field to influence voting behavior would likely be unethical. One possible solution would be to leverage quasi-natural experiments. For example, economists have made causal inferences about the influence of trade with China on voting by exploiting the quasi-random regional distribution of import competition (e.g., Autor et al., 2020).

Neuroticism and threatening economic, demographic, and health conditions are not the only psychological and structural variables that may explain Trump support. With regard to psychological variables, we emphasized the role of "hot" emotional factors, but "cold" cognitive factors like cognitive ability and rigidity have also played a role in recent voting behavior (Choma & Hanoch, 2017; Ganzach, Hanoch, & Choma, 2019; Zmigrod, Rentfrow, & Robbins, 2018). Moreover, there are other personality traits (e.g., the Dark Triad) and measures of group-based dominance (e.g., explicit hostile and benevolent sexism) that we did not examine but which have been linked to Trump support (Glick, 2019; Yalch, 2021). Regarding structural factors, we emphasized the role of fairly enduring structural factors rather than more immediate features of the electoral context, such as media coverage (Reuning & Dietrich, 2019) or the emergence of the COVID-19 pandemic (Baccini, Brodeur, & Weymouth, 2021; Clarke, Stewart, & Ho, 2021), which some researchers have argued accounted for Trump's win in 2016 and loss in 2020, respectively. We also did not consider the role of political polarization or threats from the outparty, foreign actors, or climate change, which may also increase authoritarianism (Fritsche et al., 2012; Graham & Svolik, 2020; Stanley & Wilson, 2019). One especially important avenue for future research is to understand how social media platforms and misinformation may amplify or manufacture the salience of all of these threats while allowing people to avoid information that challenges their political views (Ashokkumar et al., 2020).

One limitation of our analytic approach is that it ignores third party votes, which might have an influential effect on election outcomes. Furthermore, our focus was on predicting voting for Trump, but vote choice is just one component of what determines election *outcomes* (Grimmer & Marble, 2019). Voter turnout is also important for determining the winner of an election. Turnout in the 2020 election was much higher than in 2016 for both parties, but Democrats increased turn out more than Republicans did. Future research could investigate whether neuroticism and threatening structural variables also predict voter turnout. Evidence that anger is a critical negative emotion driving turnout (Lambert, Eadeh, & Hanson, 2019) suggests that neuroticism, which is associated with anger (Maciantowicz & Zajenkowski, 2020), may also be related to greater voter turnout. However, existing research on neuroticism seems to show that neuroticism is actually related to *lower* voter turnout and other forms of political participation (Gerber et al., 2011b).

## Conclusion

Around the world voters in democratic regimes are electing leaders who "routinely ignore constitutional limits on their power" (Zakaria, 1997, p. 22). The election of Trump, who flouted an array of democratic norms, was perhaps the most conspicuous example of this trend. Even after losing the 2020 election, Trump maintained a strong hold on the Republican party, with some polls estimating that more than 70% of Republicans thought he should run for president again (Rakich & Wilkes, 2021). Here, we proposed that researchers must consider both psychological and structural factors to gain a holistic understanding of the roots of Trump's appeal. We find that the prevalence of neuroticism in a region and its threatening economic, demographic, and health conditions both predict voting for Trump in 2016 and 2020. It remains to be seen whether other authoritarian leaders will emerge to capitalize on these same psychological and structural dynamics in the U.S. and elsewhere.

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**Data Availability:** For this article, data is freely available (Talaifar et al., 2021).

## Supplementary Materials

The Supplementary Materials include pre-registration, data, code, additional methodological details (e.g., regarding data quality, exclusions, robustness checks, data source details), and additional results (e.g., regarding factor analyses, CBSA results, weighted results, spatial autocorrelation controls, and additional visualizations). For access see Index of Supplementary Materials below.

### Index of Supplementary Materials

Talaifar, S., Stuetzer, M., Rentfrow, P. J., Potter, J., & Gosling, S. D. (2021). *Supplementary materials to "Fear and deprivation in Trump's America: A regional analysis of voting behavior in the 2016 and 2020 U.S. presidential elections"* [Pre-registration]. OSF. https://doi.org/10.17605/OSF.IO/K5H2E

Talaifar, S., Stuetzer, M., Rentfrow, P. J., Potter, J., & Gosling, S. D. (2021). *Supplementary materials to "Fear and deprivation in Trump's America: A regional analysis of voting behavior in the 2016 and 2020 U.S. presidential elections"* [Data, code, additional materials]. OSF. https://osf.io/4fzga

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