# Public Service Delivery and Support for the Populist Right*

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**Abstract**

The rise of the populist right has been extensively studied, yet relatively little attention has been paid to how the delivery of core public services may drive voter support for such parties. Given that public services are often the primary means through which citizens interact with the state, we argue that declining public service performance has the potential to create grievances that reduce trust in established political parties while increasing the appeal of anti-establishment populist parties. We examine this empirically in the British context, focusing on one the core aspects of public service provision in the UK – the publicly-funded National Health Service (NHS). We combine government administrative panel data on local health care facilities closures with fine-grained geo-spatial panel data on public preferences and voting intention. Using a staggered difference-in-differences design and a number of different estimation strategies, we find that closures reduce reported patient satisfaction and increase support for populist right parties. Treatment effect heterogeneity further suggests that increased immigration and registrations of migrants at local practices exacerbate the link between declining public service delivery and propensity to vote for the populist right. Our findings contribute to the literature on the rise of the populist right, demonstrating the role of public service delivery in driving support for populist parties, especially in local areas undergoing rapid demographic change.

***Keywords***— Populism, Public Services, Delivery, National Health Service, Political Behavior, Immigration

*This study received funding from the European Research Council (ERC Grant Agreement 864687). The authors would like to thank the participants of the 2024 EuroWEPS meeting at the LSE and the 2024 IVICA PoBI conference at the EUI for their insightful comments, and thank Luca Di Casola for his excellent research assistance.

# 1 Introduction

The rise of the populist right across established democracies is one of the most notable political developments in recent decades. From the successes of Donald Trump in the United States, to Georgia Meloni in Italy and Victor Orban in Hungary, the populist right is no longer confined to the sidelines of politics. There is a large literature seeking to explain the growing electoral appeal of the populist right. Some argue that the rise of the populist right is a "backlash against globalization", with cross-border trade and technological progress creating victims of economic dislocation who in turn rebel against their marginalization and economic insecurity by voting for the populist right (Colantone and Stanig 2018; Rodrik 2021; Scheiring et al. 2024). Others argue that the popularity of the populist right is primarily rooted in a backlash against cultural change in Western democracies, driven by long-term social developments, including immigration and growing ethnic diversity and the perceived dominance of a more-educated, cosmopolitan elite (Norris and Inglehart 2019; Margalit 2019). While both economic and cultural explanations provide persuasive accounts of the appeal of the populist right, less attention has been paid to people's more direct experiences with the state, namely public service provision.[1] This is surprising given that much of the rhetoric of the populist right highlights the failure of the political establishment and of mainstream political elite no longer serving the interests of ordinary citizens (De Vries and Hobolt 2020a). Against this backdrop, we argue that people's direct experiences with the state—and specifically with public service provision—play a key role in explaining why some voters have recently turned to the populist right.

Public safety, infrastructure, education, and health care are some of the most fundamental services provided by the state, and are crucial determinants of people's perceptions of their quality of life and living standards (Grossman and Slough 2022; Vogler 2023). Public services constitute one of the most direct ways in which people interact with the state and evaluate how their taxes are spent (Dowding and John 2012; Golden and Min 2013; Hern 2019; Hager and Hilbig 2024). Building on the idea of a social contract between citizens and rulers, scholars have argued that citizens accept obligations, such as paying taxes and obeying the law, in return for a benevolent government that delivers certain public goods, such as public safety, infrastructure, education, and health care (Levi 1988; Besley 2020). Yet, many advanced industrial democracies struggle to keep delivering high standards of core public services, primarily a result of sluggish economic growth and ageing populations.

This raises the important question of what happens when the state is no longer able to deliver core public services. We develop an argument based on the intuition that when citizens feel that the social

1. Recent exceptions include Fetzer (2019), Stroppe (2023), and Cremaschi et al. (2023).

contract is broken, they are likely to withdraw support for mainstream political parties. One way of withdrawing support is to turn to political forces that rally against the "corrupt elite" in favor of the virtuous people; namely, populists (Mudde 2016). We argue that a steep decline in the performance of core public services will lead to grievances about the state's ability to provide for its citizens, validating the populist right's message that the political establishment cannot uphold its side of the bargain and thus increasing the appeal of these political forces. Moreover, we additionally build on recent insights showing that reduced access or congestion of particular types of social benefits, such as public housing or social security transfers, may also fuel support for the populist right (Dancygier 2010; Giger and Nelson 2011; Fetzer 2019; Baccini and Sattler 2024; Cavaillé and Ferwerda 2023; Cremaschi et al. 2023). As populist right parties exploit concerns about the over-utilization of public services by immigrants (Auerbach and Oreopoulos 1999; Alesina, Miano, and Stantcheva 2023) and frame access as a zero-sum game (Chinoy et al. 2023), reductions in public service delivery may be made more salient in the context of demographic change due to immigration, all while further increasing the appeal of the populist right.

We test our argument about the role of public service delivery in the context of the United Kingdom, focusing on Britain's National Health Service (NHS). The NHS is the world's largest publicly-funded health service and represents for many Brits the embodiment of the state's duty to care for its people (Schneider et al. 2021; Charlesworth 2019; Moran 2024). Yet, public satisfaction with the NHS is at the lowest levels recorded for three decades. One reason for low levels of public satisfaction with the otherwise highly-valued public health service is people's interactions with local doctors, so-called General Practitioners (GPs), who provide the key access point for citizens to the NHS. Since 2013, nearly 1,700 GP practices have closed, constituting nearly 25 percent of the total number of public GP practices open in England. This provides an apposite case for examining the effects of public service delivery, given that most citizens access NHS services through their GP, and GP practice closures can have immediate and wide-reaching impacts on the areas affected. Moreover, there is a broad, cross-partisan consensus in the UK that public health, as provided by the NHS, is a core public service delivered by the state. In other words, populist right parties do not articulate a clear alternative to the NHS, but rather argue that the NHS is failing to deliver on its promises. Finally, given Britain's first-past-the-post electoral system, voters have strong strategic incentives to vote for larger, mainstream parties. Therefore, a vote for a smaller, populist right party, such as Reform UK, can be considered a powerful signal of voter disaffection.

We examine the extent to which GP practice closures motivate electoral support for populist,

right-wing parties by considering the universe of GP practice closures in England between 2013 and 2023 (NHS England 2023). As practices began to close at different times starting in 2013, we adopt a staggered difference-in-differences design to causally identify and estimate the average effects of closures on multiple attitudinal outcomes and vote intention. We start by examining the effects of GP practice closures on patient experiences by leveraging the GP Patient Survey (NHS England and Ipsos MORI 2023). This annual (or bi-annual) high quality survey fielded by Ipsos-MORI is intended to be representative of the patients at each GP practice in the UK. We show that closures lead to negative reported experiences in neighboring practices. We then examine the effects of GP practice closures on support for the populist right by leveraging the Understanding Society Panel, a large-scale annual panel survey of nearly 50k British households. Relying on a secure-access version of the dataset that includes detailed geographic information, we are able to link the data to GP practices catchment areas using geographic coordinates in both the GP practice closure data and the Understanding Society Panel. Our results show the closure of a GP practice drives increased support for the populist right by 1-4 percentage points.

We then turn to examining the mechanisms conditioning the effects of GP practice closures on support for the populist right. Given that a primary target of the populist right's ire is often foreigners and other marginalized groups who are perceived to be taking advantage of the welfare state, we expect more pronounced effects in areas with increased migration. Our analysis of heterogeneous treatment effects using random forests confirms this expectation, showing that the effect of poor public service delivery on populist right support is indeed exacerbated by increased localized immigration as well as increased registrations of migrants at local GP practices.

We provide additional evidence that our findings are robust by considering the British Election Study panel data, where we similarly find that the closure of a GP practice increases support for the populist right. We additionally demonstrate that our results are not sensitive to estimation strategies or model specifications. Our findings therefore provide robust evidence that declining public service delivery creates political grievances that increase the appeal of anti-establishment populist right-wing parties. Moreover, despite the incentive for some voters to turn to the opposition Labour Party, which has traditionally been the party more associated with the NHS, we find no evidence for this expectation. Our results thus contribute to the literature on the rise of the populist right, demonstrating the important role of public service delivery in driving support for populist parties, especially in areas rapidly undergoing demographic change.

# 2 Public Service Delivery and Populist Right Support

Public services, defined as goods and services that are supplied by the state, are both formally and factually accessible to virtually all people living in a political entity. Delivering core public services, such as public safety, infrastructure, or health care, is thus part of the social contract between the rulers and ruled, who accept paying taxes and obeying the law in return (Levi 1988; Besley 2020). What are the political consequences of public service delivery? Most prior work aiming to answer this question has reached somewhat mixed conclusions when focusing on the electoral consequences for incumbents that expand public service delivery in low- and middle-income countries (Harding and Stasavage 2014; Harding 2015; De Kadt and Lieberman 2020; Imai, King, and Velasco Rivera 2020; Adiguzel, Cansunar, and Corekcioglu 2023). With the exception of studies on geographic inequalities in public service provision (Nyholt 2023; Stroppe 2023), much less attention has been paid to whether and how people's satisfaction with public service delivery affects their vote choices, especially where access has historically been high (for a recent exception see Cremaschi et al. 2023). This is surprising since a body of work shows that reduced access or congestion of particular types of social benefits, such as public housing or social security transfers, fuels support for the far right (Dancygier 2010; Giger and Nelson 2011; Fetzer 2019; Baccini and Sattler 2024; Cavaillé and Ferwerda 2023).

We argue that public service delivery is one of the most direct ways in which citizens judge the state's performance (Dowding and John 2012; Golden and Min 2013; Hern 2019; Grossman and Slough 2022), and its responsiveness to their needs (De Kadt and Lieberman 2020; Vogler 2023). Although correctly attributing responsibility for public service performance might not always be straightforward (Harding and Stasavage 2014; Harding 2015), most citizens – even those who lack political interest and sophistication – are able to learn about failures in public service delivery through direct experience, especially services that are accessed by the majority of citizens such as public health care. As a consequence, a decline in the performance of public service delivery is likely to generate dissatisfaction and grievances about the functioning of the state. People's willingness to pay taxes and respect the law hinges on their perceptions of the extent to which political elites are upholding their side of the social contract and investing in their communities via service provision (Levi 1988; Besley 2020). If this reciprocal obligation is seen to be broken and the state does not deliver core public services, citizens can also be expected to withdraw their support.

When citizens are used to high levels of public service provision, such as is the case in Western Europe, reduced public service performance likely raises concerns about the extent to which political elites care about ordinary people (Cramer 2016; Hochschild 2018; Patana 2021). While classical

economic theory would expect dissatisfied individuals to move in response to lack of public service performance (Tiebout 1956), political science research suggests that many individuals stay, either due to a lack of resources or because they have strong connections to the area (Patana 2021). We argue that one way for these dissatisfied citizens to express their discontent is by casting a ballot for populist parties that espouse anti-establishment rhetoric and rally against a "corrupt elite" in favor of the virtuous people (Mudde 2016). We expect that a steep decline in the performance of core public services leads to grievances about the state's ability to provide for its citizens, validating the populist message that the political establishment cannot uphold its side of the bargain and thus increasing the appeal of populist political forces. We therefore expect that any direct experiences with a decline in the delivery of public services in a local area is likely to increase the appeal of populist parties for affected voters. This expectation is formalized as follows:

> *H1:* A decline in core local public service delivery will lead to an increase in support for the populist right among affected voters.

Our expectation refers specifically to the populist right. Yet, populism is often understood as a thin ideology that can be combined with a more left-wing or right-wing political stance (Mudde 2007). The question then becomes which populist forces might gain electorally from poor public service delivery. While a key part of the answer is the nature of populist supply – which type of populist parties exist – supply is largely a function of demand from the electorate (De Vries and Hobolt 2020a). Poor public service delivery is likely to increase the salience of questions about what a "fair" distribution of public resources might look like, thereby generating hostility toward people who are perceived as "undeserving" (Cremaschi et al. 2023). Such groups may become part of blame attribution strategies of populist political forces who may scapegoat in their attempts to explain why public service performance is declining. Due to the fact that public service delivery affects nearly everyone, both rich and poor, left-wing populists might be at a disadvantage when it comes to attributing blame for poor public service delivery in their messaging. Populist right parties' focus on immigration as a way of attributing blame for poor public service provision instead allows them to create coalitions across income groups. Research suggests that many voters associate the congestion of particular types of social benefits, such as public housing or social security transfers, with an increase in immigration (Dancygier 2010; Giger and Nelson 2011; Fetzer 2019; Baccini and Sattler 2024; Cavaillé and Ferwerda 2023). Immigrants may thus become an easy target for attributing blame for deteriorating public service delivery. Moreover, this strategy is also evident in the framing of the crisis of the NHS by the populist right in Britain. For example, in 2015 when UKIP was the largest challenger party on the far right in the UK, the party's

health spokesperson Louise Bours promised to relieve pressure on the NHS by "cutting immigration [...] and by cracking down on health tourism by demanding that all migrants hold medical insurance."

Anti-immigration populist right parties thus frame access to public health, and other public services, as a zero sum game between immigrants and natives (Chinoy et al. 2023) by exploiting misconceptions about the over-utilization of services by immigrants (Auerbach and Oreopoulos 1999; Alesina, Miano, and Stantcheva 2023). We therefore expect the rhetoric of the populist right to be more effective when people indeed experience declines in public service delivery in the context of increased immigration. Hence, we expect stronger effects on the support of the populist right when such a link between public service delivery and immigration can more clearly be established:

> *H2:* The effects of a decline in public service delivery on support for the populist right are more pronounced when declining services can be linked to an increase in immigration.

We test these expectations by examining a case of core public service delivery in the UK; namely, the closure of GP practices. The next section introduces the case, before turning to the empirical analysis.

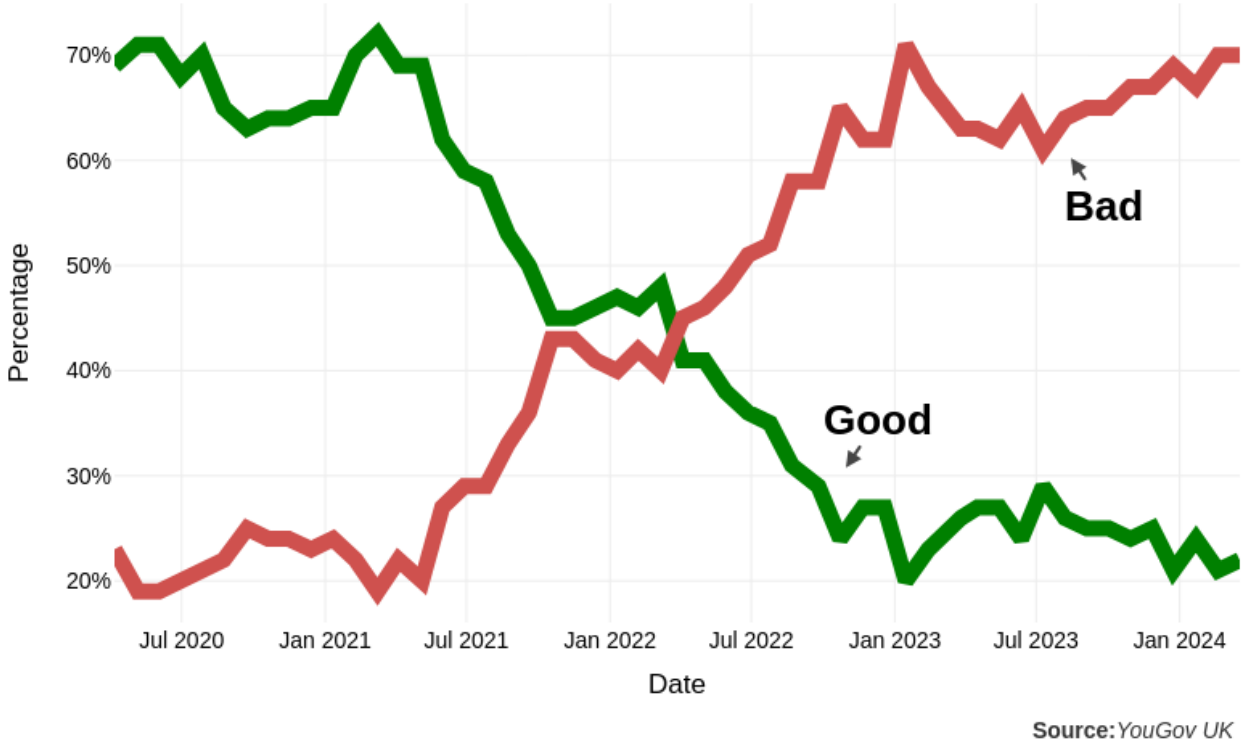
# 3 Public Service Delivery and GP Practice Closures

Britain's National Health Service is sometimes referred to as a "national religion". But perhaps it is better described as the modern embodiment of the British state's duty to care for its people, and of its right to their loyalty. Established in 1948 as a publicly-funded healthcare system of the United Kingdom, it is a free-at-the-point-of-care comprehensive health service. It forms a large part of public expenditure - costing over 11 per cent of GDP in 2023 up from 3.5 per cent in the 1950s, according to the UK Office for National Statistics. Moreover, the commitment to a publicly-funded, free-at-the-point-of-care health service is one that is shared by all the parties in parliament. Health care in the UK is thus a quintessential "valence issue": voters and parties alike agree on the core objectives of high quality, public health care, funded from general taxation and National Insurance contributions. The UK's National Health Service not only plays a key role in ensuring the health of over 60 million patients, it represents a point of pride for the nation, often lauded as one of the most cherished institutions in the UK (Charlesworth 2019; Moran 2024). Moreover, it is a public service accessed by almost all citizens. Unlike other health systems in which private insurance is more common, only about 12 percent of the UK population has private health insurance, and even individuals with private health care frequently access the NHS for some of their health care needs. The NHS is thus a core

public service that is both supported and accessed by the vast majority of citizens in the UK.

Yet, the public has grown increasingly dissatisfied with NHS services. Figure 1 shows that in 2020 nearly 70 percent of the population viewed NHS services as 'good' with only around 20 percent viewing NHS services badly. That trend has reversed completely, with nearly 70 percent viewing NHS services poorly in 2024 (see Figure 1). Moreover, there is considerable evidence that the public places blame directly on the government and indeed wants the government to go further in funding the NHS.

**Figure 1:** How Good or Bad are NHS Services?

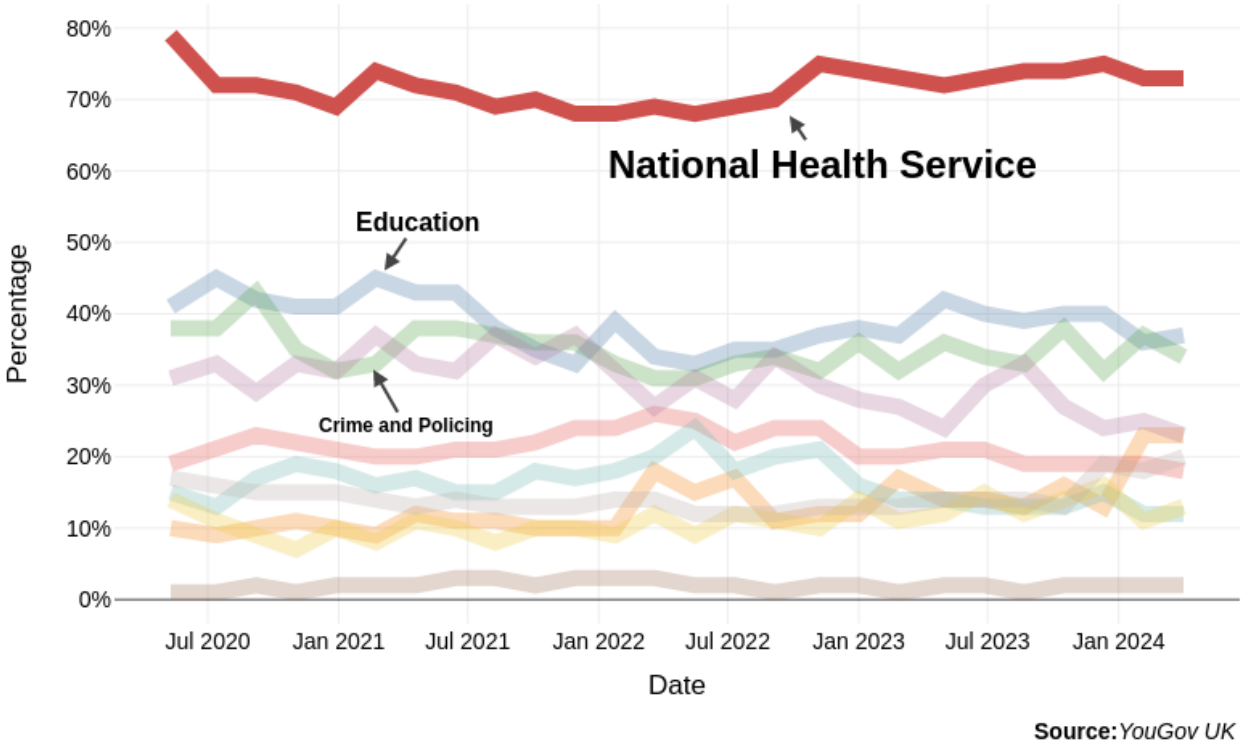



**Note:** YouGov tracker: *How good or bad are national NHS services* from April 2020-April 2024. Each individual point represents a separate survey fielded by YouGov. "Don't Know" responses not included. Data are available online at YouGov.

Despite occupying over a tenth of annual GDP, Figure 2 shows that there is a broad public consensus that the government is not going far enough when it comes to funding the National Health Service. The figure shows that the NHS is the top priority for government spending, with the majority of the public expressing a clear preference for the government to spend more on the NHS. The second biggest spending priority receives only a little more than half the support that the NHS receives, illustrating the importance of the NHS to the British public.

A key aspect of dissatisfaction with the NHS relates to the closure of GP practices. Since 2013,

**Figure 2:** What sector should the UK government spend more on?




**Note:** YouGov tracker: *What sector should the UK government spend more on?* from April 2020-April 2024. "Don't Know" responses not included. Data are available online at YouGov.

over 3,000 NHS facilities have closed. Of these, nearly 1,700 were GP practices, constituting nearly 25 percent of the public GP practices open in England. The general practitioner (GP) or family physician represents the primary way in which most citizens access the NHS. It is the GP who treats minor illnesses and also acts as the gatekeeper for more specialized medical care. As of early 2024, over 63 million people in England alone were registered as patients at a GP practice (curiously, this is more than the estimated population of England). The closure of GP practices is therefore likely to have a significant impact on the public's experience of the NHS.

GP practices can close for a number of reasons, including staff shortages, retirements, failure to meet regulatory requirements and non-renewal of the Alternative Provider Medical Services Contract (Carter and Kaffash 2022). These closures can have significant effects on patients and practices. Closures require neighboring practices to absorb patients registered at a newly closed practice. The strain placed on neighboring practices may result in longer wait times and reductions in the quality of care. Moreover, patients may also have to travel further to access primary care services.

We first consider the spatial distribution of GP practice closures across England. Figure 3a presents

the universe of NHS GP practice closures in England between 2013 and 2021 using data from NHS Digital (NHS England 2023). In the figure, each red point represents a separate GP practice that has closed. Closures are widespread but tend to be more concentrated in the metropolitan areas such as London and Birmingham as these areas have much denser populations.

Practice closures also affect a considerable number of individuals. Figure 3b presents the number of individuals affected by a practice closure between 2013 and 2020. To calculate the number of patients affected by a GP practice closure, we combined quarterly data on the number of patients registered to each NHS GP practice to create a new panel dataset presented up-to-date registrations over time. We then use the number of registrations in the quarter prior to a closure for each practice. After merging the data with the respective Westminster constituency in which the practice is located, we aggregated the number of patients affected in the time between the first practice closure in 2013 and 2020. We further present these data annually and cumulatively in Figure 4.

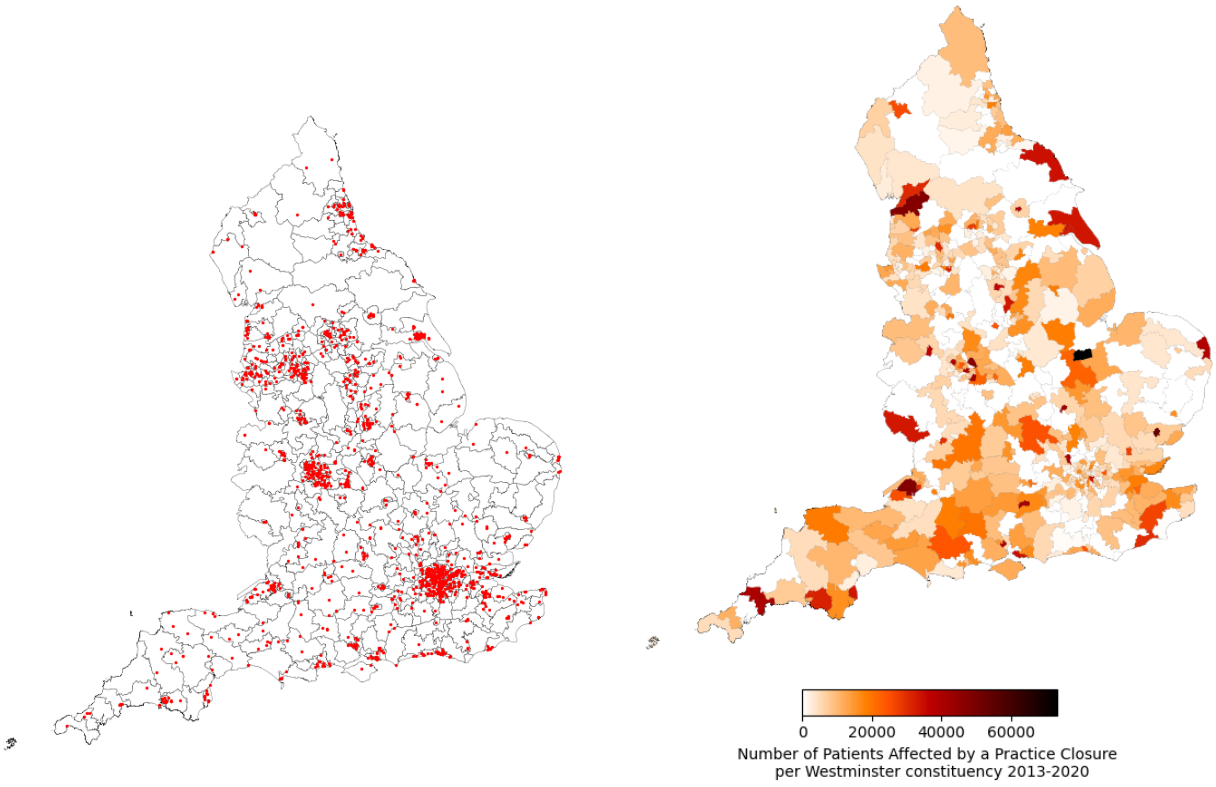
Figure 4 shows that over six million people have been affected by a closure in the England, which constitutes more than one-in-ten individuals in the country. The number of patients affected peaks for a single year at about 1.1 million in 2019. The fact that over a tenth of the population has been directly affected by a GP practice closure in the course of less than a decade goes to show how widespread the closures truly are.

## 3.1 Closures and Patient Experiences

In February 2024, Primary Care Minister Andrea Leadsom claimed that GP practice closures *do not* affect the quality of care that patients receive. She argued that the NHS is a "resilient" system that can absorb the closure of GP practices without affecting the quality of care provided.[2] We therefore begin our analysis by asking whether GP practice closures indeed affect patient experiences. We leverage the GP Patient Survey, which is an annual (or bi-annual in some cases) survey fielded by Ipsos-MORI that asks patients about their experiences with their GP practice (NHS England and Ipsos MORI 2023). The survey includes questions about the ease of getting through to the practice on the phone, the ease of making an appointment, the length of time patients have to wait to see a GP, and the quality of care provided by the practice, among others. Importantly, the surveys are administered at the level of the GP practice with the intention of being representative of patients at a given practice. The surveys are also weighted to reflect demographic characteristics of the local population according to Census estimates. These high-quality surveys allow us to examine how patient experiences change

2. https://www.gponline.com/

**Figure 3:** Spatial Distribution of GP Practice Closures and Patients Affected




**(a)** GP Practice Closures in England **(b)** Patients Affected by Closures 2013-2020

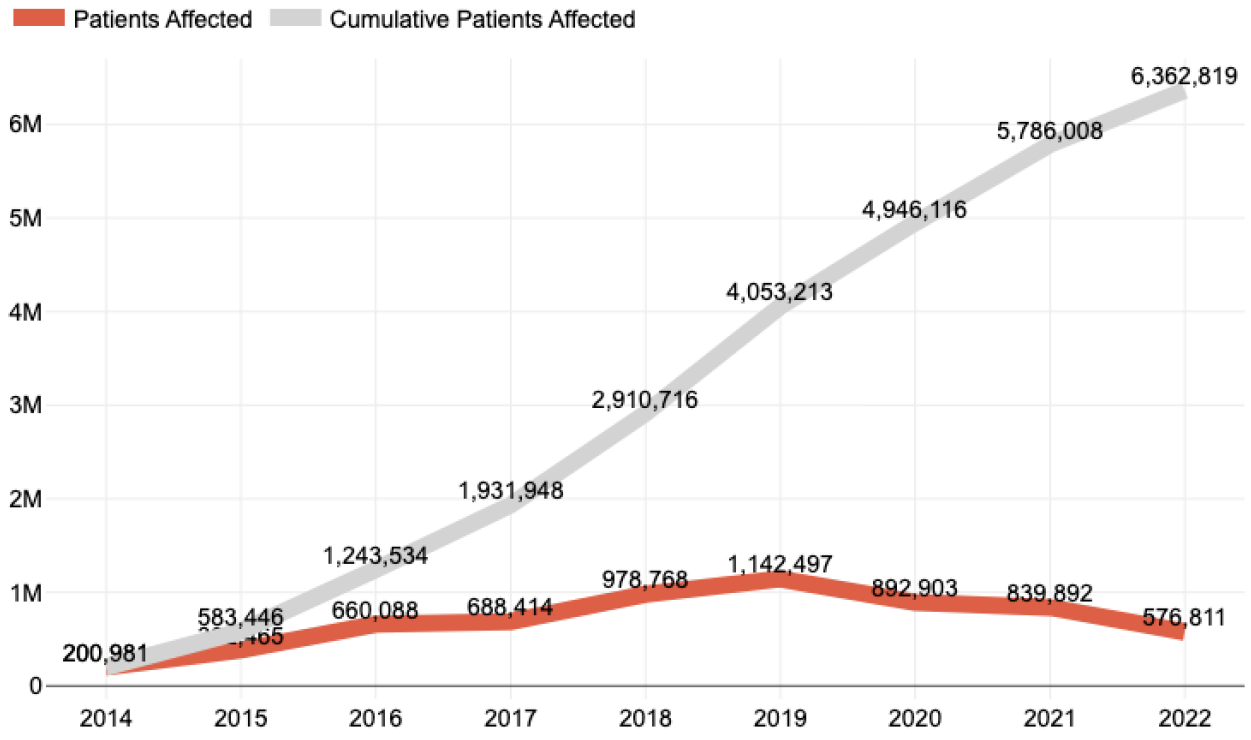
**Note:** *Left:* GP practice closures in England between 2013 and 2021 (the first closure occurs in 2013). Each red point represents a practice closure. *Right:* Number of patients affected by a GP practice closure by Westminster Constituencies from 2013-2020. Number of patients affected is calculated as the number of patients registered to a GP practice in the quarter before it closes. Data include all closures between 2013-2020.

following the closure of a GP practice within the same geographic area.

To understand the extent to which GP practice closures impact patient experiences, we examine reported patient experiences in practices that have been required to absorb patients from neighboring practices after a closure. In order to identify the effects of the closures in a causally credible way, we examine GP practices that share a location with a closing practice. We therefore treat the practices in locations in which a GP practice has closed as "treated" practices while using practices that do not share a location with another practice that has closed as the "control" units. The logic here is that when practices close, the patients registered to such practices are forced to attend a different nearby practice. We therefore expect that these "replacement" practices experience an increase in new patient registrations, reducing patient experiences and satisfaction.

As practices begin to close at different times starting in 2013, we adopt a staggered difference-

**Figure 4:** Number of Patients Affected by GP Practice Closures in England



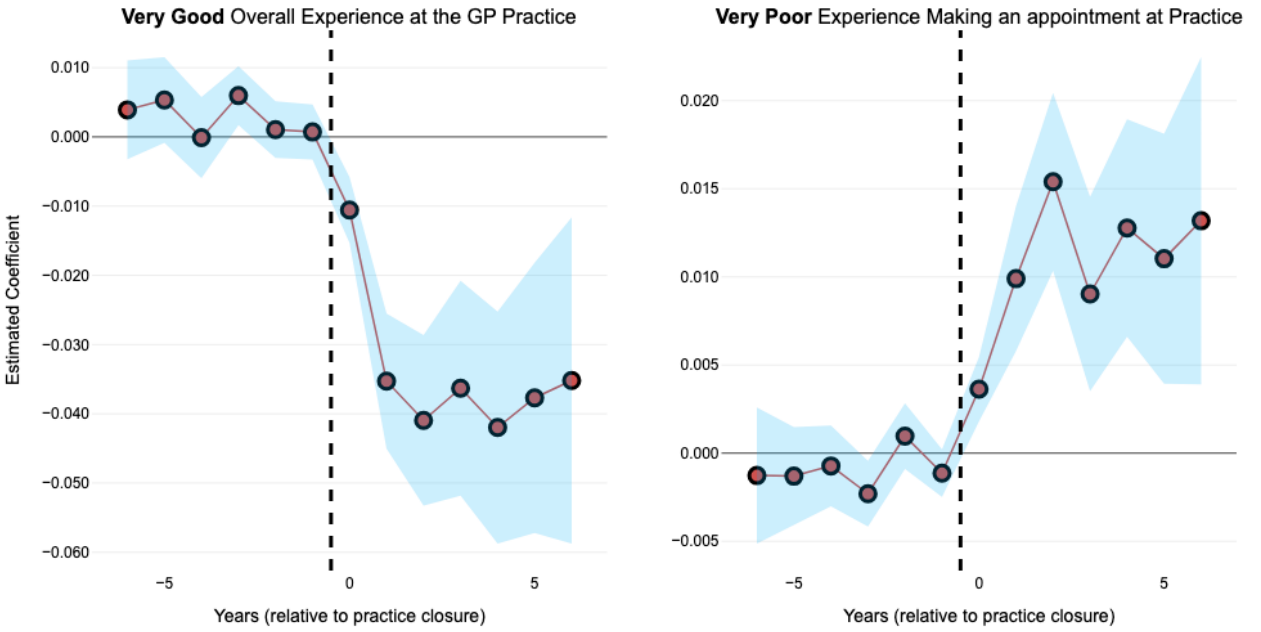

**Note:** Number of annual and cumulative patients affected by the closure of a GP practice in England. Figure relies on data from NHS Digital (NHS England 2023)

in-differences design. We speak in greater depth to the identifying assumptions required to recover causal estimates using such a design in subsection 4.2. For inference, we rely on matrix completion methods (Athey et al. 2021). Matrix completion is a counterfactual estimator that treats the treated outcomes of interest as missing values and then approximates those values using a low-rank matrix completion approach. The difference between the approximated values and the observed values is the effect of the intervention—in our case, the average effect of the closures on patient attitudes. We focus on responses to two questions that were asked repeatedly in the GP Patient Survey: the percentage of respondents who rate their overall experience of the GP surgery as "very good" (the highest rating) and the percentage of respondents who rate their experience of making an appointment with their GP surgery as "very poor" (the lowest category). The GP Patient Survey provides respondents with five potential outcomes that are then aggregated to the GP practice level. Therefore, the outcome variable of interest in our models is the percentage of respondents that attend a given GP practice who respond with a given categorization. The available responses include "very good", "good", "neither good nor poor", "fairly poor", and "very poor". With the intention of maintaining individuals' privacy, the GP

Patient Survey does not provide individual-level data. Instead, the survey aggregates responses to the GP practice level. We therefore estimate the average treatment effect (ATT) of GP practice closures on practice-level patient experiences in neighboring GP practices.

Fixed effects for GP practice and the year of the survey are included in all estimations and account for time-invariant unobserved heterogeneity at the practice level. We present the results as an event series in Figure 5 and provide further details about the results in Appendix A.

**Figure 5:** Effect of GP Practice Closures on Patient Satisfaction in Neighboring Practices




**Note:** Matrix Completion estimates for the effect of GP practice closures on patient satisfaction in a neighbouring GP practice in the same postcode as a closed practice. The outcome variables are the percentage of individuals that respond with *very good* (left) or *very poor* (right).

Figure 5 suggests that the closure of a GP practice is followed by a decline in patient experiences. In the case of the first subplot in which the outcome variable is the percentage of patients at a practice who report a 'very good' overall experience at the practice, a closure in the same postcode leads to approximately a 3-5% reduction over the following five years. The second subplot captures the estimates for the effects of closures on patients who report a 'very poor' experience making an appointment at the practice. In this case, the estimates suggest that the closures increase the proportion of individuals reporting the most negative experiences of making an appointment by about 1-1.5%.

In both cases, the effects are observable almost immediately following the closure and level off after 2-3 years. Importantly, the figure also suggests relative stability in patient satisfaction as recorded by both measures in the time leading up to the closures, which is consistent with the parallel trends assumption of a difference-in-differences design.

These results suggest that individuals who are forced to switch to a new GP practice following the closure of their original practice—or who attend a practice that has been forced to absorb the patients from a closing practice, experience a significant decline in patient satisfaction. This is consistent with the idea that the closure of GP practices has negative consequences for patient experiences in neighboring practices. We next turn to the effects of GP practice closures on support for the populist right.

# 4 The Electoral Consequences of GP Practices Closures

## 4.1 Data

We now turn to the effects of GP practice closures on support for the populist right. We argue that the closure of GP practices is likely to increase support for the populist right among affected voters. We expect that the closure of GP practices will create grievances about the state's ability to provide for its citizens, validating the populist sentiment that the political establishment cannot deliver on its side of the bargain and thus increasing the appeal of populist political forces. We test this expectation using several sources of data. Our main source comes from the Understanding Society Panel Study (USOC) (University of Essex, Institute for Social and Economic Research 2023). The USOC panel is a large-scale annual panel survey of nearly 50k British households. We gain access to the secure-access version of the dataset which includes detailed geographic information of respondents which allows for the linkage of the data to the GP practice closures.

To link the USOC and GP practice data, we match the easting and northing grid references of the GP practices and the respondents. We round the easting and northing values to the nearest 3rd digit to ensure that the data are not too granular.[3] We include in the analysis all thirteen waves of the panel, which goes from 2009 to 2022.

In addition, we match the data using the first five digits of the postcode of the respondent. We first convert the easting and northing values in the USOC data to postcodes using data from the Office of National Statistics (ONS). We then match the postcode of the respondent to the postcode of the

3. For example, an easting value of 451528 would be rounded to 452000. Each 1000 units in the easting and northing values corresponds to approximately 1 km.

GP practice. The results are nearly identical to the results using the easting and northing values.

As a second source of data, we rely on the British Election Study Internet Panel (Fieldhouse et al. 2023). This panel includes 25 waves in which the same respondents are asked a wide range of questions about their political attitudes and beliefs. Unlike the USOC data, respondents are surveyed more frequently than once per year, allowing for greater precision when considering the times at which GP practices close. Additionally, the BES data include several other variables that are not available in the USOC data, such as feelings of closeness to different political parties, as well as attitudes about immigration and public services.

Although the BES data does not provide the postcode of the respondent, the data include the Middle-Layer Super Output Areas code (MSOA). There are about 7,000 MSOAs in England, which amount to between 5,000 and 15,000 persons in each area. This provides a relatively small geographic area, which we use to match to the GP practice closures data. We additionally narrow the dataset to include only respondents for whom data are available between 2014 and 2020 in order to capture changes within the same individuals. This leaves us with 3,255 respondents.

Our primary outcome variable of interest using both sources of data is self-described voting for populist right parties. Specifically, we construct a variable that captures whether an individual voted for the British National Party (BNP), the UK Independence Party (UKIP), the Brexit Party or the Reform UK party (the successor to the Brexit Party). Each of these parties are commonly classified as both populist and right-wing parties. They share an anti-establishment, anti-immigration and Euroskeptic policy platform, common of the populist radical right in Europe (Mudde 2007). They are all challenger parties (De Vries and Hobolt 2020b) with no, or only limited, parliamentary representation in the House of Commons.[4] Their lack of parliamentary representation is partly due to Britain's first-past-the-post electoral system that disadvantages smaller challenger parties with geographically diffuse support. In the European Parliament election in 2019, where proportional representation (PR) was used, the Brexit Party topped the poll in the UK with 30 percent of the national vote, and UKIP came first in the 2014 UK European Parliament election with 27 percent of the national vote. This illustrates that in second-order national elections using PR, electoral support for these populist right parties can be substantial in the UK.

4. UKIP currently has no MP in Parliament, and while they have had representation previously, Douglas Carswell is the only person so far to win a seat for UKIP in a general election, but he left UKIP to sit as an independent MP in 2017.

## 4.2 Identification Strategy

Given that GP practices closed at different times and in different places, we rely on a staggered difference-in-differences design to identify the effects of the closures on self-described vote intention for populist right parties. A staggered difference-in-differences design allows us to compare changes in voting behavior in a narrow geographic areas that experienced a closure to changes in voting behavior in other areas that did not *yet* experience a closure. This suggests that our control group – the counterfactual against which the observed outcomes can be compared – is composed of areas that are similar to the treated areas except for the fact that they have not yet experienced a GP practice closure.

There are several key assumptions that are necessary to make in order to recover causal estimates from this design. The first assumption is that in the absence of a closure, the areas that experienced closures and the areas that did not would follow parallel trends in voting behavior. The parallel trends assumption is crucial for identification and we take several steps to ensure that the treated and control groups follow parallel trends until they are exposed to a practice closure. First, we empirically examine pre-treatment trends in voting behavior in the years leading up to the closures. In Liu, Wang, and Xu (2022), the authors outline pre-treatment trends tests in which the null hypothesis is that there are differences in the outcome variable in the pre-treatment period. The test rejects the null using our data at a p-value of $< 0.000$, suggesting that no significant differences in voting behavior in the years leading up to the closures exist.[5]

A second assumption we make is that there is no anticipation of the treatment. In other words, individuals do not respond to the practice closures by changing their behavior *before* the date of the actual closure itself. While this assumption is conceptually obvious, it is possible that individuals who hear about a practice closure ahead of the practice formally closing may, in effect, become 'treated'. We address this possibility in two ways. First, in our empirical specifications, the hold-out period is 1 year before the actual closure, which reduces the possibility that early news of the closure could drive changes in the outcome variable. Second, we conduct placebo tests in which observations are removed three periods before the practice closure. The ATT is then estimated in these three periods, which allows for understanding the extent to which our identification strategy (mis-)identifies an effect (see Liu, Wang, and Xu (2022) for additional details on this method of placebo tests). The results, presented in section 6, suggest that our identification strategy does not lead to ATT estimates that are statistically differentiable from zero in the three periods before a GP practice closure.

5. Results of pre-trends tests are provided in Appendix B.

Finally, we model several alternative scenarios using different estimators (interactive fixed effects, Mahalanobis matching, covariate-balanced propensity score matching) and measurements of the closures and related outcomes. The results are reassuringly similar across multiple datasets, outcome measures, estimators and alternative scenarios. We further detail these procedures in section 6.

### 4.3 Estimation Strategy

For estimation, we rely on matrix completion methods (Athey et al. 2021) with individual and time fixed effects. Matrix completion methods treat the treated outcomes as missing values and then uses a low-rank matrix completion approach to estimate the missing counterfactual voting behavior in geographic areas that experienced a GP practice closure using the voting behavior of individuals in postcodes that did not, effectively estimating a counterfactual outcome against which the observed outcomes can be compared to derive an average treatment effect on the individuals experiencing the closures (ATT). An advantage of this approach is that it allows for visualization of the estimated effects of the GP practice closures on self-described voting for populist right parties over time. Specifically, we can plot the estimated effects of the closures in relation to the timing of the closures, which allows for a visual assessment of the parallel trends assumption as well as providing a greater understanding of the development of the treatment over time.

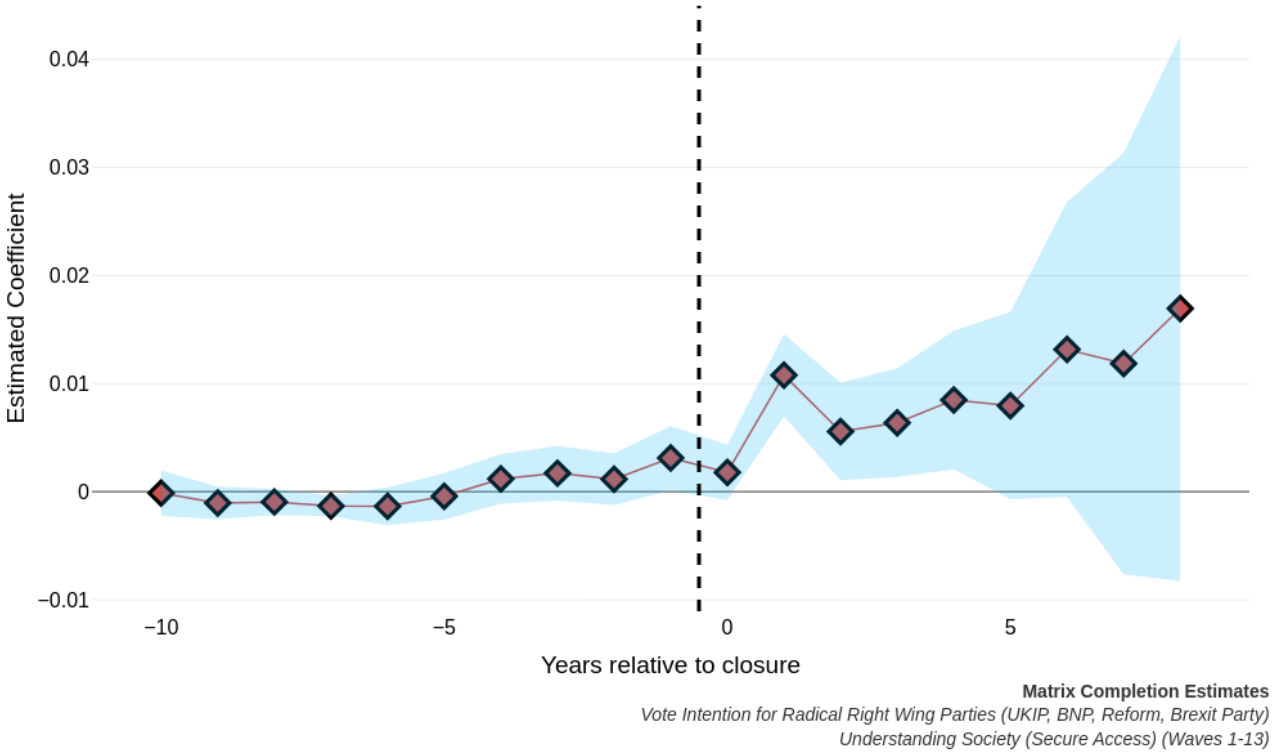
## 5 Results

We first present results for the effects of the GP practice closures on intention to vote for the populist right using the USOC panel. Figure 6 presents the dynamic effects of the closures, suggesting that the closures lead to an immediate and sharp increase in intention to support the populist right. Importantly, the figure demonstrates relative stability in the time leading up to the closures, which provides further support for the parallel trends assumption.

Substantively, the effects of the closures on propensity to support the populist right amount to an increase of about 1%. While this effect may appear small at first glance, it is worth noting that vote switching in first-past-the-post systems is costly – especially in cases in which votes go to parties with no real chance of governing. Consequently, the fact that closures create grievances that motivate individuals to switch their vote intention at all indicates a significant change.

Figure 7 shows the estimated effects of the GP practice closures on self-described voting for populist right parties using the BES panel. The results indicate a larger effect than the USOC analysis,

**Figure 6:** Estimated Effects of Practice Closures on Intention to Vote for Populist Right Parties - USOC Data

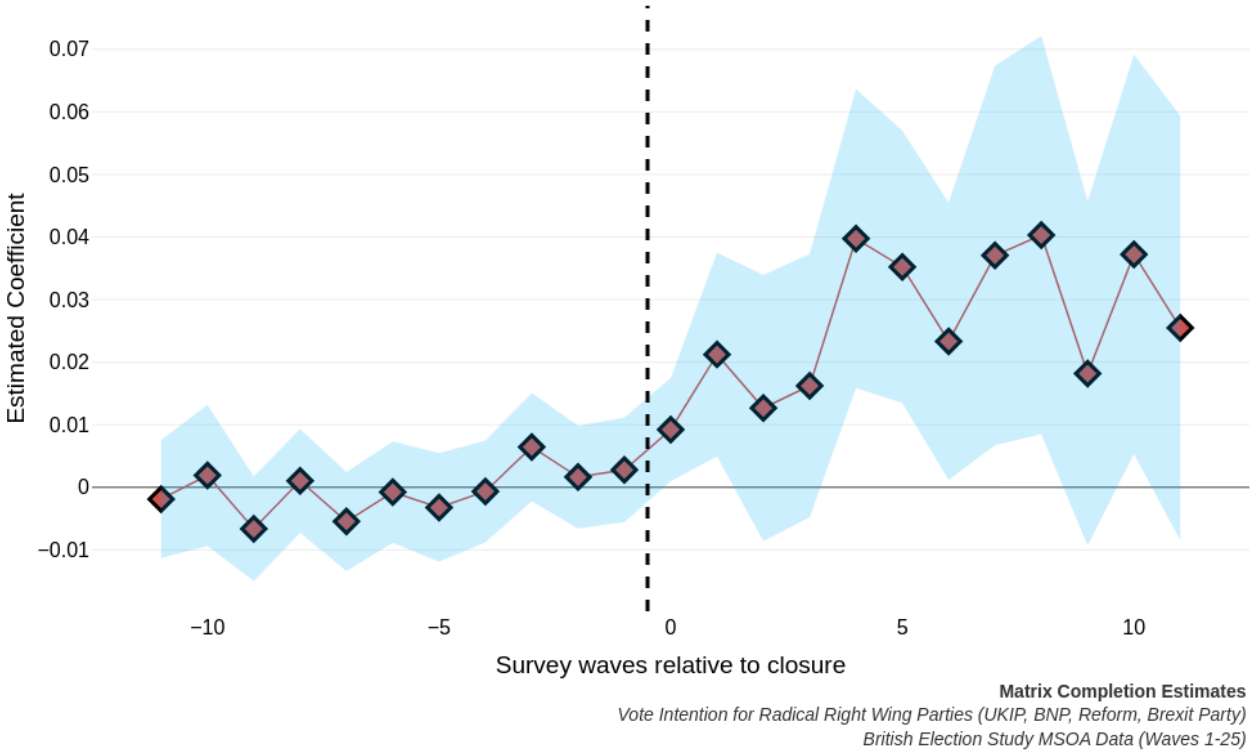



**Note:** Matrix Completion estimates for the effect of GP practice closures on vote intention for populist right parties. Parties include the British National Party, Reform UK, the UK Independence Party and the Brexit Party.

suggesting that the closure of GP practices increases support for radical right-wing parties by approximately 2-4 percentage points. The estimates using the British Election Study also appear to be noisier than the estimates using the Understanding Society Panel. This is likely due to the fact that we only know the location of BES respondents at the MSOA level, while we have much greater geographic accuracy in the USOC data. While the approach with the USOC data provides greater accuracy when ensuring that everyone is 'treated' in a small area, it is likely that individuals who were exposed to closures but do not share the same 5-digit post code were still affected. In this regard, the USOC estimates are smaller and more precise, while the BES estimates are larger and slightly noisier. Both sets of estimates, however, are similar in that they meet the parallel trends assumption and indicate a small but consistent increase of 1-4 percentage points in vote intention for the populist right. We provide further details about the results in Appendix B.

In addition to asking respondent which party they would vote for in the case that a general election

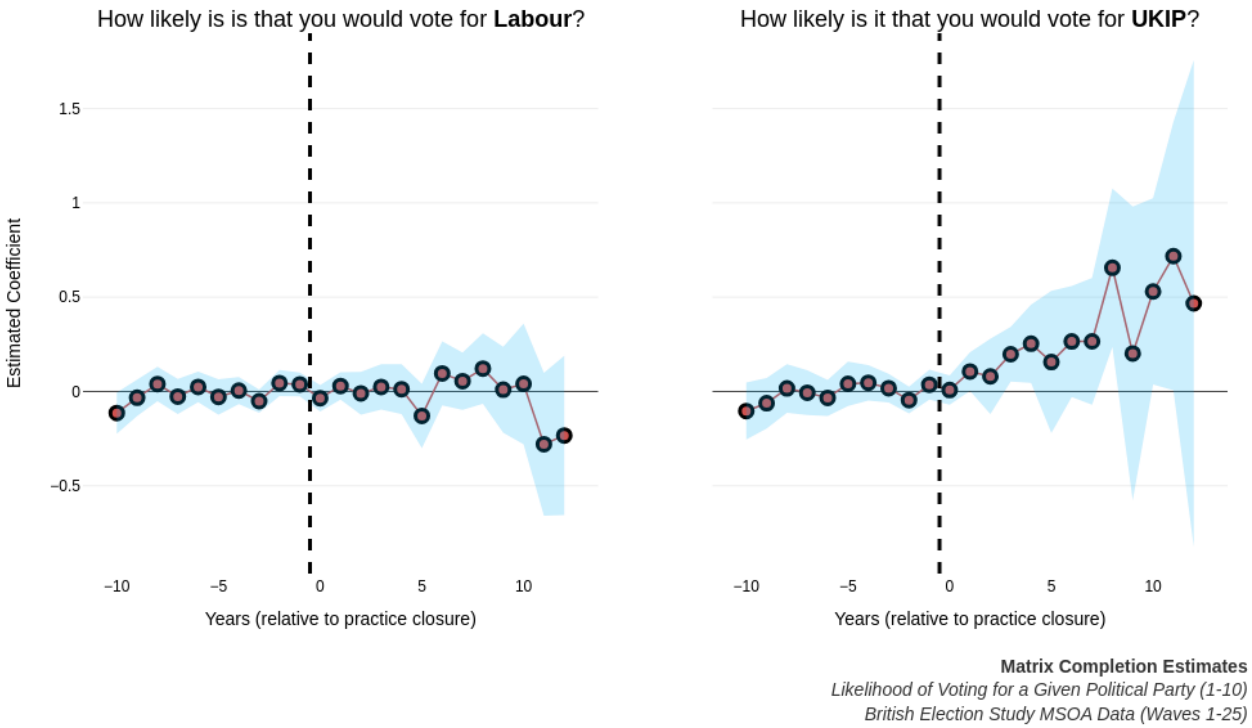
**Figure 7:** Estimated Effects of GP Practice Closures on Intention to Vote for Populist Right Parties - BES Data




**Note:** Matrix Completion estimates and 95% confidence intervals for the effects of GP practice closures on self-reported voting for populist right parties. Parties include the British National Party, Reform UK, the UK Independence Party and the Brexit Party.

was held, there are several other questions that capture attitudes and preferences for the populist right. To ensure the robustness of our findings, we further examine the effects of GP practice closures on self-reported likelihood of voting for the populist right, which provides an opportunity to compare the effects of the closures on shifting to the right and shifting to the Labour Party. Specifically, we examine responses to "How likely is it that you would ever vote for each of the following parties?". Respondents are able to respond on a 0-10 scale to indicate the likelihood of voting for each of the political parties in the UK. Using the same design as above, we estimates the effects of the GP practice closures on likelihood of ever voting for UKIP compared to Labour. We present these results in Figure 8. The results indicate that closures have virtually no effect on likelihood of voting for the Labour Party. In contrast, the closures appear to drive voters closer to UKIP, demonstrated by a gradual increase in likelihood of supporting the party over the following years. We provide further details of these results in Appendix D.

**Figure 8:** Effects of GP Practice Closures on Likelihood of Voting UKIP vis-à-vis Labour




**Note:** Matrix Completion estimates and 95% confidence intervals for the effects of GP practice closures on likelihood of voting for UKIP compared to Labour. Estimates include all respondents in the BES data that responded to at least 10 of the 25 waves of the panel.

## 5.1 Mechanisms

We argue that declining public service delivery – GP practice closures in our case – can increase support for populist right parties by creating grievances among voters. Voters who are inconvenienced by changes in public services or experience a decline in services may blame the government for the decline, which can reduce trust in political institutions and increase the appeal of populist right parties. We demonstrate causal evidence for this argument in our primary analysis using two sources of fine-grained panel data. We now turn to examining the mechanisms that condition the effects of GP practice closures on political attitudes and behaviors.

We focus primarily on changes in migration and registrations with local public services, since we expect voters to be more likely to turn to the populist right if they perceive foreign populations as direct competition for public services (Cavaillé and Van Der Straeten 2023; Cavaillé and Ferwerda 2023). Populist right parties, such as UKIP, have tried to exploit these fears by pointing to immigration as a key reason for the deterioration in NHS services. We therefore collect additional data from two

sources to understand the degree to which the effects of GP practice closures on populist right voting are conditioned by exposure to immigrant populations.

### 5.1.1 New Migrant GP Registrations

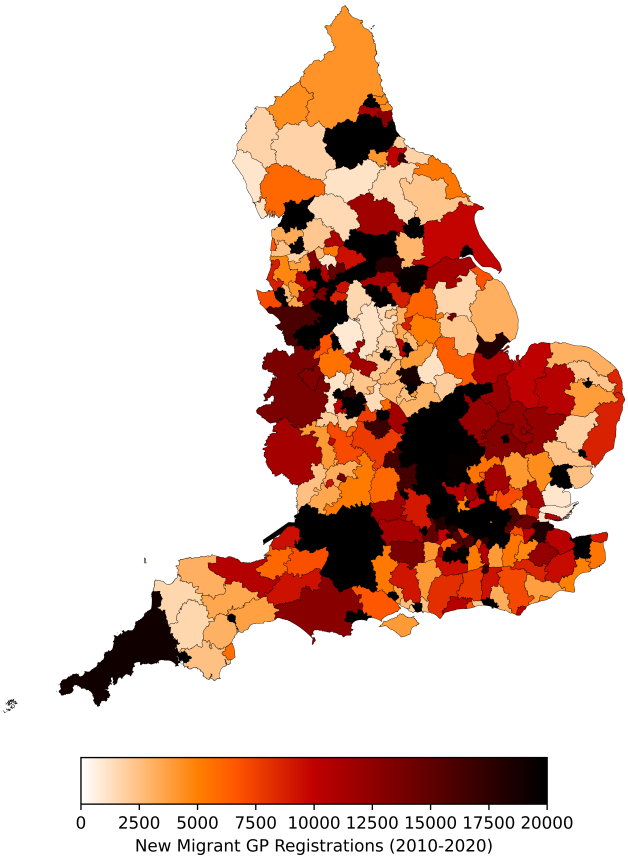
To examine whether the an increased inflow of migrants enhances the effect of GP closures on the support for the populist right, we collect and combine data on the number of migrants who register at a GP practice for the first time in order to capture the potential interaction between changes in NHS services and exposure to migrant populations when using such services. We rely on data made available by the Office of National Statistics (Office for National Statistics 2023). These data are available yearly from 2010-2020 at the local authority level. Local authority districts are larger than the geographical areas used in the previous analysis, with an average population of around 190,000 per local authority. We match the migrant GP registrations data with the British Election Study panel data at the local authority level for the analysis. Figure 9 presents the number of new migrant GP registrations between 2010 and 2020, indicating significant variation in geographic distribution.

### 5.1.2 Migration Flows

In addition to considering migrant GP registrations as a potential mechanism conditioning the effect of the closures, we also consider the degree to which migration flows may also influence the magnitude of the effects. Recent work finds that that migration flows – in the form of both immigration *and* emigration – create local grievances on which populist right parties can capitalize (Dancygier et al. 2024). We therefore consider the degree to which international and domestic migration flows condition the effects of the closures on populist right vote intention. For the analysis, we collect yearly data from the UK Office of National Statistics on migration flows in and out of each local authority and according to whether the individual is migrating from within the UK or a non-UK (e.g. international) location. We match these data which were available from 2010-2020 with the British Election Study panel data.

We rely on the random forests to estimate conditional average treatment effects (CATE) using the BES data combined with data on migration flows and local migrant registrations at GP practices. Specifically, we rely on Wager and Athey (2018)'s causal forests procedure (`grf`) for estimation. The results, presented in Figure 10, suggest that in-migration indeed magnifies the effects of the closures on propensity to vote for the populist right. Specifically, in-migration from non-UK born individuals intensifies the effects, while the opposite also appears to be the case: out-migration from non-UK born individuals significantly diminishes the effects of the closures.

**Figure 9:** New Migrant GP Registrations



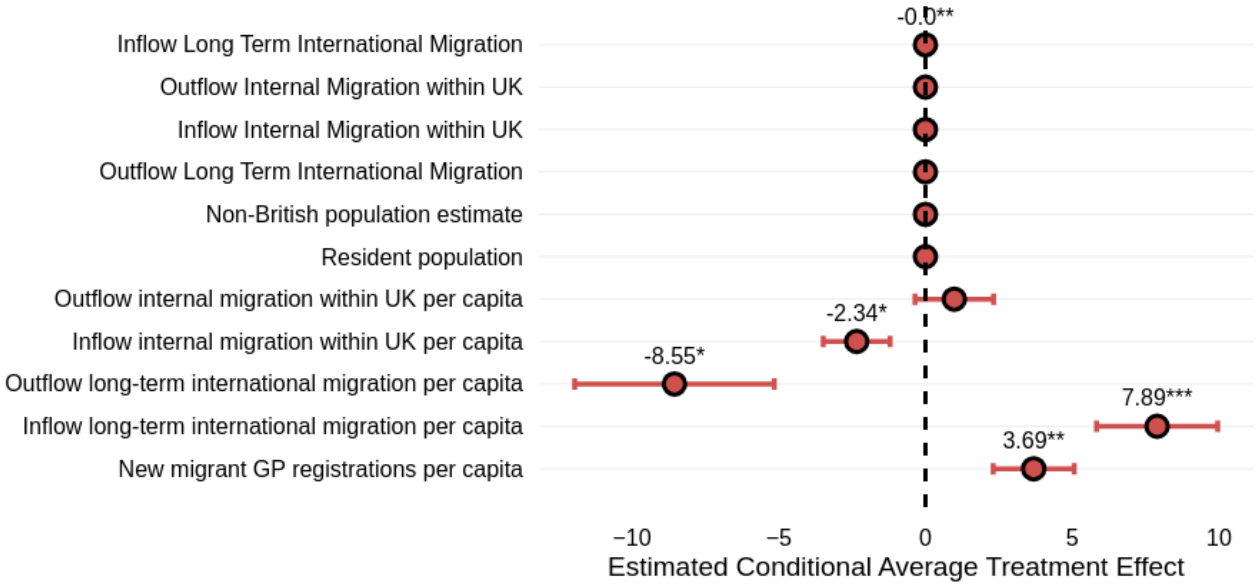

**Note:** Figure includes all new GP registrations by non-UK born individuals between 2010 and 2020 at the local authority level. Data source: Office for National Statistics (2023).

New migrant GP registrations also increase the magnitude of the effects. Although not to the same degree as immigration, the interaction between migrant GP registrations and diminished service delivery pushes voters toward the populist right. Finally, in-migration by UK-born individuals into areas that have lost NHS facilities to closures appears to minimize the propensity to turn to the populist right. In this regard, an increase in British-born individuals migrating to another location within Britain serves to reduce the impact of the closures. Further details on the results are presented in Appendix C.

# 6 Alternative Explanations and Robustness Checks

To ensure that our results are robust, we consider a number of potential scenarios and empirical procedures that might raise questions about the results we report. To briefly summarize, we show that our results are insensitive to estimation strategies, model specifications, measurement decisions,

**Figure 10:** Conditional Average Treatment Effect Estimates




**Note:** Conditional Average Treatment effects estimated with random forests (Wager and Athey 2018) and HC3 standard errors clustered by MSOA and BES survey wave. The outcome variable is voting for a populist right party using imputation (see *Imputing Missing Data Section*. Results presented in table form in Appendix C. Estimates use `grf` library in R.

data sample and imputation strategies.

## 6.1 Matching with Refinement

Our primary specification relies on matrix completion methods, which estimates a counterfactual outcome using a weighted combination of the control units. While this is the preferred estimator throughout, it requires the strict assumption that the closures are exogenous. We take steps to ensure this assumption is more credible by comparing only treated and 'not-yet-treated' areas in order to account for potential confounders that might cause both the closures and vote intention. However, we can further relax this assumption by re-examining our primary findings using matching with refinement estimators (Imai, Kim, and Wang 2023; Ho et al. 2007). Specifically, we construct matched sets of treated and control units using lagged covariates that may cause an increase in propensity to support the populist right. Each matched set contains individuals with identical treatment histories and similar trends in pre-specified covariates *before* experiencing a practice closure. After the matched sets are created, we use refinement methods to adjust for pre-treatment trends in variables that are likely to influence the propensity to vote for the populist right.

This approach is especially relevant to our analysis because it allows us to include individual characteristics such as education and household income as well as geographic characteristics such as

migration inflows, migrant registrations at GP practices, and the number of new National Insurance registrations in a given local authority.[6]

After creating matched sets, we employ two different weighting and refinement methods to improve balance and adjust for potential time-varying confounders. In the first strategy, we use Mahalanobis distance to adjust for temporal differences in exposure to immigration levels in the treated and control units. In the second strategy, we refine the matched sets using a robust covariate balancing propensity score (CBPS) technique which takes into consideration treatment assignment while optimizing covariate balance (Imai and Ratkovic 2014). For both strategies, we match using two periods before the treatment period and we use the `PanelMatch` library (Imai, Kim, and Wang 2023) for all estimations.

The results, presented as dynamic estimates below in Figure 11, reveal a similar pattern as the matrix completion specifications. Namely, GP practice closures increase vote intention for a populist right party. The effects of the closures peaks about six survey waves after a closure at a mean of 0.06 (e.g. a 6% increase in vote intention for a populist right party); however, the bootstrapped confidence intervals are wide and suggest that the effects are only significant at conventional levels for a few periods. Nonetheless, the results are consistent with the primary analysis and suggest that the effects of the closures on vote intention for the populist right are robust to alternative estimation procedures.

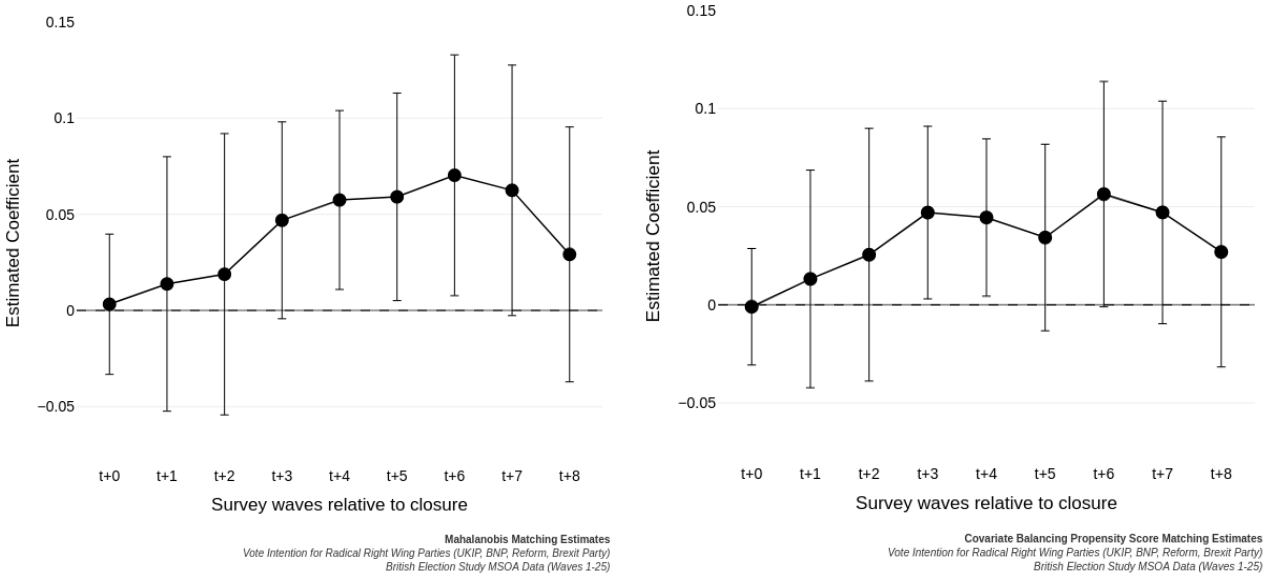
## 6.2 Interactive Fixed Effects Specifications

Although matrix completion methods have been shown to be robust to treatment effect heterogeneity and tend to perform better than two-way fixed effects specifications (Liu, Wang, and Xu 2022; Athey et al. 2021), there are certain scenarios – such as when factors are sparse – in which factor-augmented estimators may perform better (Bai 2009). We therefore replicated the primary results in which we show that GP practice closures increase vote intention for the populist right using both the Understanding Society Panel and the British Election Study Panel using interactive fixed effects (IFE) specifications. Similar to matrix completion methods, IFE is a counterfactual estimator in which "missing" treated outcomes are estimated and then compared to the observed outcomes. As with MC, the primary causal quantity of interest is the average treatment effect on the treated; however, IFE has been shown to perform better when factors are sparse (Liu, Wang, and Xu 2022), which makes it a strong contender for estimating the effects of the closures given prior expectations of magnitude.

We estimated models using interactive fixed effects using different configurations of the outcome

6. Each of the geographic variables are measured at the local authority level. National Insurance is a state social security program that is required for various state benefits. Individuals are registered at age 16 automatically by HMRC but non-UK individuals who become residents must register when moving to the UK.

**Figure 11:** Effects of GP Practice Closures on Vote Intention for a Populist Right Party Using Matching Estimators




**(a)** Mahalanobis Distance **(b)** Covariate-balancing Propensity Score

**Note:** Estimated coefficient estimates and 95% confidence intervals for the effects of GP practice closures on vote intention for a populist right party using Mahalanobis distance (*left*) and Covariate-balancing propensity scores (*right*) to match on education, income, migration inflows, national insurance registrations and new GP practice registrations two periods before the treatment. Vote intention measured using BES Data. Estimates made using the `PanelMatch` library in R.

variable (imputed vs no missing data) and when taking into consideration both sources of data (BES and USOC). The results, presented in Appendix F, confirm the substantive conclusions drawn in the primary analysis.

## 6.3 An Alternative Measurement of Closures

In the primary analysis, we rely on the practice closure dates provided by NHS Digital (NHS England 2023). However, in several cases a practice may close and be immediately replaced by another practice in the same location and facility. Despite being registered as a 'closure' in such a scenario, patients may not necessarily be affected, which raises the question of whether a different measurement of the closures may yield different results. We therefore measure closures (and hence the "treatment variable") by creating a balanced panel dataset of the number of open practices in every MSOA and year between 2014 and 2023 (the time-period covered in the BES data). After identifying every case in which there is a reduction in the number of open practices for a given MSOA/year, we create a treatment indicator that takes the value of 1 in an MSOA from the point of the reduction in the

number of GP practices onwards for the duration of the panel.[7]

Using this operationalization of the GP practice closures, we estimate the effects of the closures on vote intention for the populist right using matrix completion methods. The results, which are further detailed in Appendix G, indicate nearly-identical effects from the reduction of the number of GP practices on intention to vote for the populist right.

### 6.4 Imputing Missing Data

Throughout the analysis, we estimate models using imputed data alongside data where we simply drop missing observations. In many cases in both panel studies, data are missing for respondents when it comes to vote choice. However, the same respondents share their views and attitudes on other issues and in other domains. We believe that we can reliable predict whether these individuals will vote for a populist right party with a high degree of accuracy. We borrow from advanced machine learning methods to create a model that predicts vote choice based on a number of characteristics that are likely to be correlated with vote choice. We use gradient boosted tree algorithms (Chen and Guestrin 2016), which, after optimizing hyperparameters using a grid search, achieves an accuracy score of 96.3% in predicting vote choice for one of the four populist right parties (BNP, UKIP, Brexit Party, Reform UK). We use the model to impute missing data on vote choice in the case that the observation contains other relevant covariates. We provide further details on the training and validation procedures in Appendix E.

## 7 Conclusion

In this paper, we have argued that declining public service delivery is an important factor shaping support for the populist right. When the state falls short in upholding its obligations to the public, allowing core public services to decline without making other concessions, voters may be swayed by the anti-establishment rhetoric of populist right parties who are quick to point to the failings of a political elite that is disconnected from the people. Furthermore, when these shortcomings in public service delivery are combined with the fears about resource shortages and heightened competition with immigrants, voters are more likely to hold establishment parties to account by turning to the populist right.

Our findings demonstrate robust support for this argument. We document deteriorating assess-

7. The treatment distribution using this measurement of closures is displayed in Figure A4 in Appendix G.

ments of NHS services and show that the public wants the government to spend more in order to better deliver health services. Our study focuses on the effects of the widespread closures of GP practices – the primary point of contact for individuals attempting to access medical care in the UK and the face of the nation's public health service – showing that more than 1 in 4 practices have been affected since 2013. We demonstrate that these closures have led to reductions in the perceived quality of patient experiences. In the case of a GP closure, patients at neighboring practices reported decreased satisfaction and increased negative experiences with making an appointment. Importantly, our findings reveal that the grievances created by these declines in public service delivery translate into increased support for anti-establishment and populist right parties. Populist right parties speak directly to the anger voters feel about a state that has not upheld its end of the social contract, blaming the establishment and immigrants for degraded public services. Moreover, we show that the growing presence of immigrants in turn moderate the effects of the decline in public service delivery. This suggests that an influx of migrants into a local area increases the appeal of the populist right's rhetoric, positioning immigrants in direct competition with "native" Brits for public services.

This paper thus contributes to the literature on the drivers of support for populism. Despite numerous important studies that have tied increased support for populism to declining economic conditions (Colantone and Stanig 2019; Rodrik 2021), migration (Dancygier et al. 2024), cultural change (Norris and Inglehart 2019; Margalit 2019) and fiscal austerity measures (Fetzer 2019), the extent to which direct experiences with declining public service delivery influences voters' support for the populist right has largely remained unclear. We therefore contribute to this important body of literature by demonstrating that public service delivery is indeed an important factor that can fuel grievances and increase support for the populist right.

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# Part I
# Appendix

## Table of Contents

# A MC Estimation - GP Patient Survey Outcomes

**Table A1:** Effects of Closures on Overall Experience at Practice

| Time | Estimated Coefficient | Standard Error | Lower Bound | Upper Bound | P-value |
|---|---|---|---|---|---|
| -8 | -0.013853 | 0.007287 | -0.028136 | 0.000429 | 0.057291 |
| -7 | 0.009221 | 0.006217 | -0.002964 | 0.021406 | 0.138031 |
| -6 | 0.003906 | 0.003640 | -0.003228 | 0.011039 | 0.283273 |
| -5 | 0.005337 | 0.003148 | -0.000833 | 0.011507 | 0.090014 |
| -4 | -0.000106 | 0.002993 | -0.005972 | 0.005761 | 0.971797 |
| -3 | 0.005961 | 0.002167 | 0.001713 | 0.010209 | 0.005954 |
| -2 | 0.001049 | 0.002077 | -0.003022 | 0.005119 | 0.613627 |
| -1 | 0.000711 | 0.002020 | -0.003248 | 0.004670 | 0.724778 |
| 0 | -0.010563 | 0.002411 | -0.015288 | -0.005838 | 0.000012 |
| 1 | -0.035280 | 0.004982 | -0.045045 | -0.025515 | 0.000000 |
| 2 | -0.040950 | 0.006284 | -0.053265 | -0.028634 | 0.000000 |
| 3 | -0.036301 | 0.007915 | -0.051815 | -0.020787 | 0.000005 |
| 4 | -0.041981 | 0.008546 | -0.058730 | -0.025232 | 0.000001 |
| 5 | -0.037700 | 0.009956 | -0.057214 | -0.018186 | 0.000153 |
| 6 | -0.035198 | 0.012015 | -0.058748 | -0.011648 | 0.003396 |
| 7 | -0.039503 | 0.015730 | -0.070333 | -0.008673 | 0.012028 |
| 8 | -0.030747 | 0.025859 | -0.081430 | 0.019936 | 0.234437 |
| 9 | -0.093278 | 0.031424 | -0.154867 | -0.031689 | 0.002994 |

**Note:** Dynamic matrix completion ATT estimates for the effects of practice closures on patient attitudes. The outcome variable is the percentage of patients who report that their overall experience at the GP practice is *very good*. Estimates are made using the `Fect` library in R (Liu, Wang, and Xu 2022).

**Table A2:** Effects of Closures on Overall Experience Making an Appointment at Practice

| Time | Estimated Coefficient | Standard Error | Lower Bound | Upper Bound | P-value |
|---|---|---|---|---|---|
| -8 | 0.003043 | 0.002429 | -0.001719 | 0.007804 | 0.210399 |
| -7 | -0.004947 | 0.002729 | -0.010296 | 0.000401 | 0.069829 |
| -6 | -0.001268 | 0.001971 | -0.005131 | 0.002595 | 0.519993 |
| -5 | -0.001304 | 0.001414 | -0.004075 | 0.001467 | 0.356500 |
| -4 | -0.000724 | 0.001172 | -0.003022 | 0.001573 | 0.536614 |
| -3 | -0.002301 | 0.000954 | -0.004170 | -0.000432 | 0.015847 |
| -2 | 0.000966 | 0.000948 | -0.000891 | 0.002823 | 0.308096 |
| -1 | -0.001137 | 0.000689 | -0.002488 | 0.000213 | 0.098822 |
| 0 | 0.003635 | 0.000930 | 0.001812 | 0.005458 | 0.000093 |
| 1 | 0.009903 | 0.002095 | 0.005797 | 0.014009 | 0.000002 |
| 2 | 0.015397 | 0.002572 | 0.010356 | 0.020439 | 0.000000 |
| 3 | 0.009033 | 0.002809 | 0.003527 | 0.014540 | 0.001303 |
| 4 | 0.012779 | 0.003149 | 0.006607 | 0.018950 | 0.000049 |
| 5 | 0.011032 | 0.003618 | 0.003941 | 0.018122 | 0.002293 |
| 6 | 0.013188 | 0.004734 | 0.003909 | 0.022466 | 0.005342 |
| 7 | 0.013854 | 0.006557 | 0.001001 | 0.026706 | 0.034627 |
| 8 | 0.007477 | 0.008368 | -0.008923 | 0.023878 | 0.371540 |
| 9 | 0.025592 | 0.018632 | -0.010927 | 0.062111 | 0.169588 |

**Note:** Dynamic matrix completion ATT estimates for the effects of practice closures on patient attitudes. The outcome variable is the percentage of patients who report that their experience making an appointment at the practice is *very poor*. Estimates are made using the `Fect` library in R (Liu, Wang, and Xu 2022).

# B BES Data - Vote Intention for the Radical Right

**Table A3:** Effects of Closures on Vote Intention for Radical Right Parties

| Time | ATT | S.E. | p.value | CI.lower | CI.upper |
|---|---|---|---|---|---|
| -11 | -0.001883 | 0.004809 | 0.695440 | -0.011307 | 0.007542 |
| -10 | 0.001911 | 0.005744 | 0.739408 | -0.009348 | 0.013169 |
| -9 | -0.006622 | 0.004258 | 0.119894 | -0.014966 | 0.001723 |
| -8 | 0.001037 | 0.004234 | 0.806455 | -0.007261 | 0.009335 |
| -7 | -0.005456 | 0.004031 | 0.175823 | -0.013356 | 0.002444 |
| -6 | -0.000773 | 0.004122 | 0.851222 | -0.008851 | 0.007305 |
| -5 | -0.003222 | 0.004421 | 0.466054 | -0.011887 | 0.005442 |
| -4 | -0.000647 | 0.004154 | 0.876147 | -0.008789 | 0.007494 |
| -3 | 0.006449 | 0.004421 | 0.144574 | -0.002215 | 0.015113 |
| -2 | 0.001639 | 0.004187 | 0.695396 | -0.006567 | 0.009845 |
| -1 | 0.002785 | 0.004254 | 0.512767 | -0.005554 | 0.011123 |
| 0 | 0.009224 | 0.004190 | 0.027695 | 0.001012 | 0.017435 |
| 1 | 0.021235 | 0.008299 | 0.010504 | 0.004969 | 0.037500 |
| 2 | 0.012669 | 0.010839 | 0.242479 | -0.008575 | 0.033912 |
| 3 | 0.016233 | 0.010724 | 0.130101 | -0.004786 | 0.037252 |
| 4 | 0.039731 | 0.012189 | 0.001116 | 0.015841 | 0.063620 |
| 5 | 0.035219 | 0.011092 | 0.001498 | 0.013479 | 0.056960 |
| 6 | 0.023321 | 0.011284 | 0.038751 | 0.001206 | 0.045437 |
| 7 | 0.037053 | 0.015461 | 0.016548 | 0.006751 | 0.067356 |
| 8 | 0.040310 | 0.016227 | 0.012985 | 0.008506 | 0.072114 |
| 9 | 0.018183 | 0.014020 | 0.194649 | -0.009295 | 0.045662 |
| 10 | 0.037228 | 0.016264 | 0.022079 | 0.005352 | 0.069105 |
| 11 | 0.025474 | 0.017291 | 0.140688 | -0.008416 | 0.059364 |

**Note:** Dynamic matrix completion ATT estimates for the effects of practice closures on vote intention for the British National Party, UKIP, Reform UK and the Brexit Party. BES data includes respondents available for 20 waves of the panel (N = 3,255). Estimates are made using the `Fect` library in R (Liu, Wang, and Xu 2022).

## B.1 Estimation Diagnostic tests

Figure A1 presents tests for pre-trends in the BES panel data. Figure A2 presents the placebo tests for the BES panel data. The tests are completed using the `FEct` library in R (Liu, Wang, and Xu 2022). In the pre-trends test, the null hypothesis is that pre-treatment trends are equivalent between treated and control groups. The null is rejected if the p-value is less than 0.05, which is the case presented in Figure A1.

In the placebo test, three pre-treatment periods are held out and the ATT is estimated for these periods. The null hypothesis is that the estimated ATT is significantly different from zero. The null is rejected if the p-value is less than 0.05. The results in Figure A2 show that the null is rejected for the placebo tests.

In both tests, we use the fixed-effects counterfactual estimator which does not make weighted adjustments (e.g. the estimator does not artificially balance the pre-treatment trends). For both tests, the outcome variable is a binary indicator for voting for a populist right party.

**Figure A1:** Pre-Trends Equivalence Tests

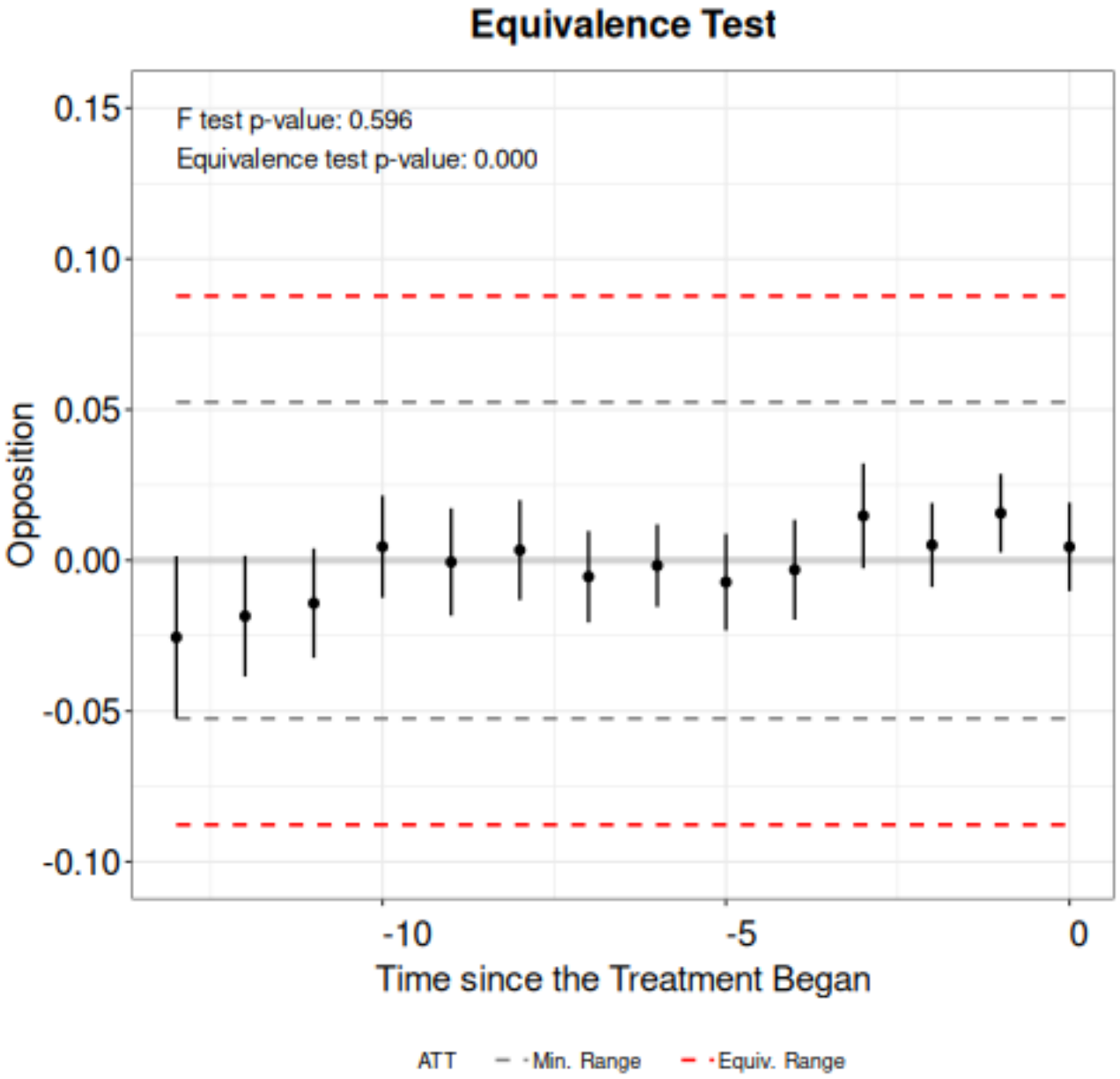
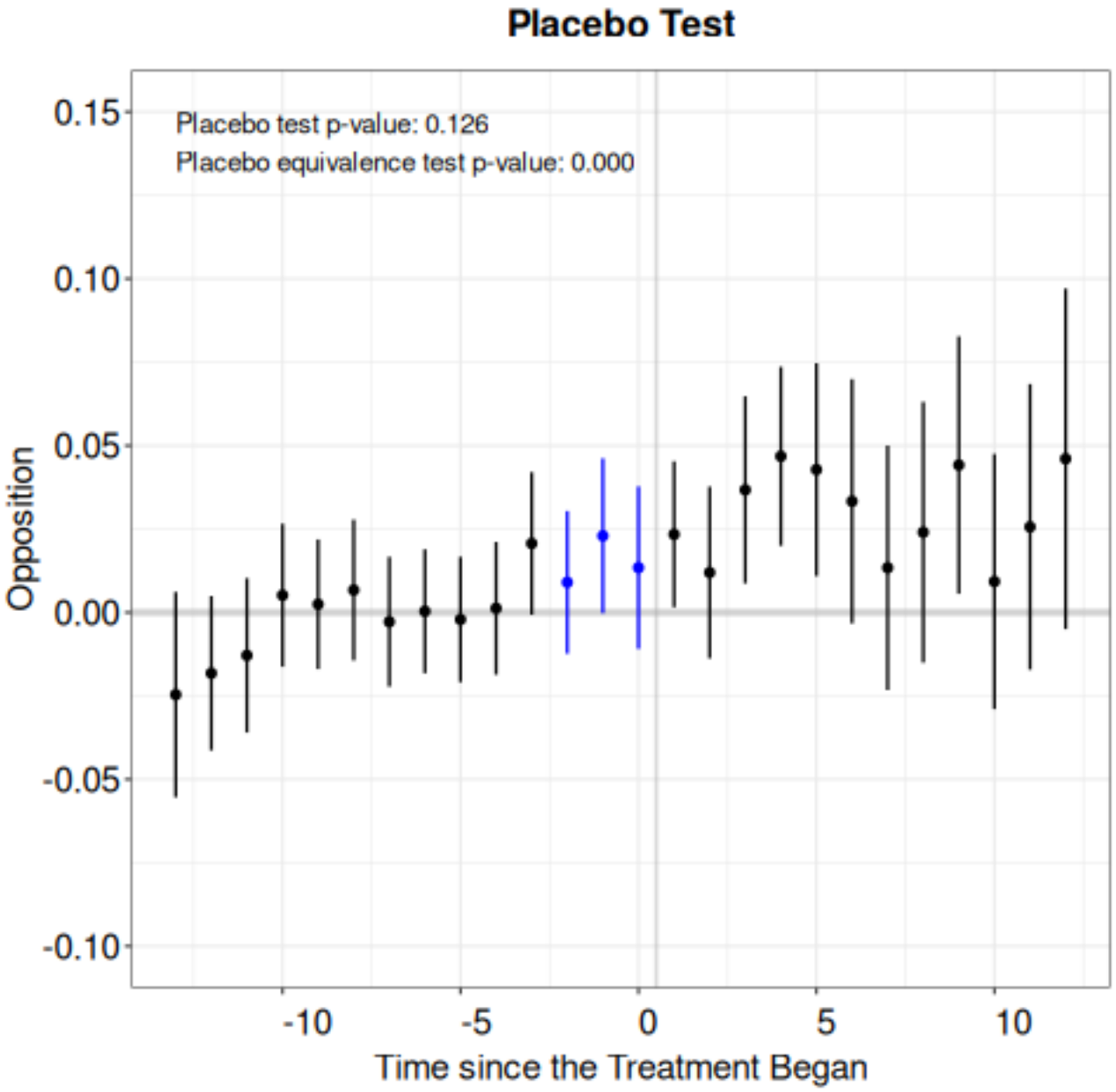


**Figure A2:** Placebo Tests



# C CATE Estimation - Migration - BES Data

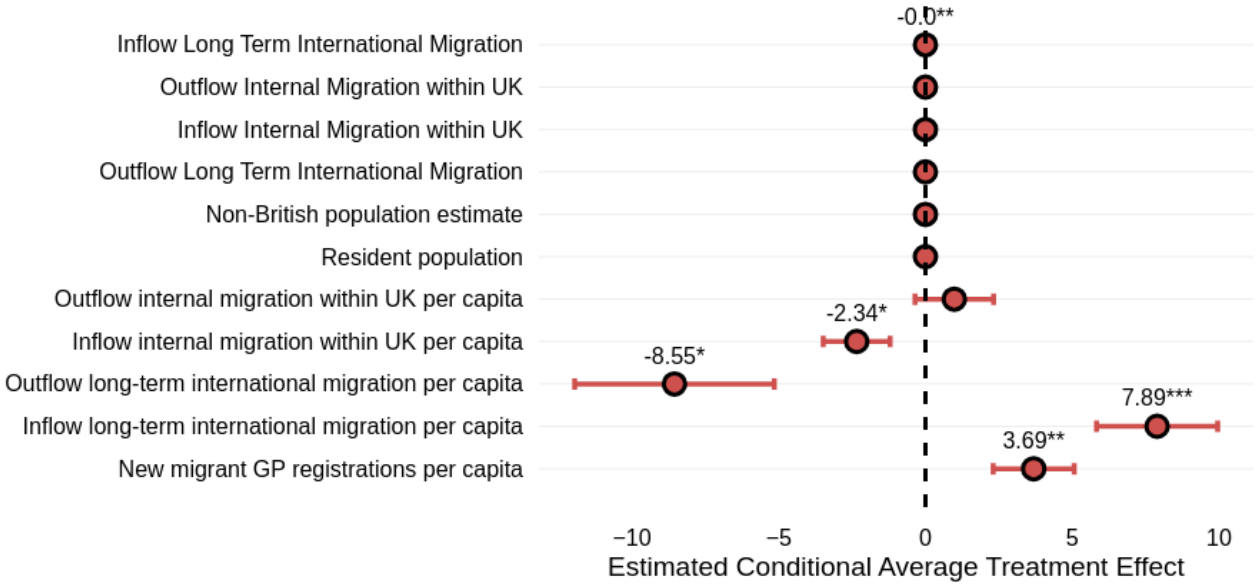
Table A4 presents the Conditional Average Treatment effects for the variables collected on migration. All variables are measured annually from 2010-2020 at the local authority level using ONS data (Office for National Statistics 2023). Data Models are as follows: Populist right vote intention (Imputed; All closures); Populist right vote intention (All closures). BES panel data includes individuals who responded to the panel 20 or more times, (as with the primary analysis).

**Table A4:** Conditional Average Treatment Effects – Migration & BES Data

| | Model 1 | Model 2 |
|---|---|---|
| New migrant GP registrations per capita (LAD) | 3.69** | 3.17* |
| | (1.38) | (1.34) |
| Inflow long-term international migration per capita (LAD) | 7.89*** | 6.86*** |
| | (2.06) | (1.97) |
| Outflow long-term international migration per capita (LAD) | -8.55* | -7.45* |
| | (3.40) | (3.22) |
| Inflow internal migration within UK per capita (LAD) | -2.34* | -1.83 |
| | (1.14) | (1.12) |
| Outflow internal migration within UK per capita (LAD) | 0.98 | 0.95 |
| | (1.34) | (1.31) |
| Resident population (LAD) | 0.00 | 0.00 |
| | (0.00) | (0.00) |
| Non-British population estimate (LAD) | 0.00 | 0.00 |
| | (0.00) | (0.00) |
| Outflow Long Term International Migration | 0.00 | 0.00 |
| | (0.00) | (0.00) |
| Inflow Internal Migration within UK | 0.00 | 0.00 |
| | (0.00) | (0.00) |
| Outflow Internal Migration within UK | 0.00 | 0.00 |
| | (0.00) | (0.00) |
| Inflow Long Term International Migration | 0.00** | 0.00* |
| | (0.00) | (0.00) |
| Num.Obs. | 52877 | 52877 |
| AIC | 258589.2 | 255993.2 |
| BIC | 727795.5 | 725199.5 |

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

**Figure A3:** CATE Estimates for New Migrant GP Registrations




**Note:** Conditional Average Treatment effects estimated with random forests (Wager and Athey 2018) and HC3 standard errors clustered by MSOA and BES survey wave. The outcome variable is voting for a populist right party using imputation (see *Imputing Missing Data Section*. Results presented in table form in Appendix C. Estimates use `grf` library in R.

# D Likelihood of Voting for Labour and UKIP - BES Data

Table A5 and Table A6 present the dynamic estimates for the likelihood of voting for the Labour Party and the UK Independence Party, respectively.

**Table A5:** Effects of Closures on Likelihood of Voting for Labour - BES Data

| Time | Estimated Coefficient | Standard Error | Lower Bound | Upper Bound | P-value |
|---|---|---|---|---|---|
| -10 | -0.114233 | 0.051179 | -0.214542 | -0.013923 | 0.025614 |
| -9 | -0.033123 | 0.046128 | -0.123532 | 0.057286 | 0.472714 |
| -8 | 0.039258 | 0.048787 | -0.056364 | 0.134880 | 0.421008 |
| -7 | -0.027107 | 0.045870 | -0.117010 | 0.062795 | 0.554545 |
| -6 | 0.024260 | 0.041216 | -0.056522 | 0.105042 | 0.556125 |
| -5 | -0.028780 | 0.046068 | -0.119072 | 0.061511 | 0.532143 |
| -4 | 0.004884 | 0.036386 | -0.066432 | 0.076199 | 0.893226 |
| -3 | -0.051509 | 0.034392 | -0.118916 | 0.015898 | 0.134213 |
| -2 | 0.044742 | 0.032381 | -0.018724 | 0.108207 | 0.167058 |
| -1 | 0.037846 | 0.033392 | -0.027602 | 0.103294 | 0.257058 |
| 0 | -0.035824 | 0.038501 | -0.111284 | 0.039636 | 0.352126 |
| 1 | 0.029061 | 0.037678 | -0.044787 | 0.102908 | 0.440535 |
| 2 | -0.009631 | 0.055530 | -0.118467 | 0.099205 | 0.862310 |
| 3 | 0.024306 | 0.055057 | -0.083603 | 0.132215 | 0.658869 |
| 4 | 0.011987 | 0.067951 | -0.121194 | 0.145168 | 0.859972 |
| 5 | -0.129259 | 0.085106 | -0.296063 | 0.037546 | 0.128813 |
| 6 | 0.096099 | 0.086938 | -0.074295 | 0.266494 | 0.268994 |
| 7 | 0.054834 | 0.087034 | -0.115750 | 0.225418 | 0.528677 |
| 8 | 0.121470 | 0.096152 | -0.066985 | 0.309925 | 0.206479 |
| 9 | 0.009443 | 0.109228 | -0.204640 | 0.223527 | 0.931104 |
| 10 | 0.040031 | 0.143487 | -0.241197 | 0.321260 | 0.780253 |

**Note:** Dynamic matrix completion ATT estimates for the effects of practice closures on likelihood of voting for the Labour Party. Estimates are made using the `Fect` library in R (Liu, Wang, and Xu 2022).

**Table A6:** Effects of Closures on Likelihood of Voting for UKIP - BES Data

| Time | Estimated Coefficient | Standard Error | Lower Bound | Upper Bound | P-value |
|---|---|---|---|---|---|
| -10 | -0.103901 | 0.075956 | -0.252771 | 0.044969 | 0.171338 |
| -9 | -0.061942 | 0.064200 | -0.187771 | 0.063887 | 0.334629 |
| -8 | 0.016004 | 0.067751 | -0.116785 | 0.148793 | 0.813266 |
| -7 | -0.006243 | 0.054896 | -0.113837 | 0.101351 | 0.909463 |
| -6 | -0.033899 | 0.047222 | -0.126451 | 0.058654 | 0.472839 |
| -5 | 0.040678 | 0.055608 | -0.068311 | 0.149668 | 0.464460 |
| -4 | 0.046033 | 0.042997 | -0.038240 | 0.130305 | 0.284345 |
| -3 | 0.017577 | 0.035539 | -0.052078 | 0.087232 | 0.620891 |
| -2 | -0.045535 | 0.036860 | -0.117780 | 0.026709 | 0.216701 |
| -1 | 0.036277 | 0.042505 | -0.047030 | 0.119585 | 0.393387 |
| 0 | 0.007455 | 0.043531 | -0.077863 | 0.092773 | 0.864019 |
| 1 | 0.105842 | 0.046377 | 0.014945 | 0.196738 | 0.022476 |
| 2 | 0.080009 | 0.095013 | -0.106212 | 0.266231 | 0.399737 |
| 3 | 0.197744 | 0.072140 | 0.056352 | 0.339137 | 0.006123 |
| 4 | 0.253401 | 0.104402 | 0.048777 | 0.458026 | 0.015217 |
| 5 | 0.156282 | 0.192244 | -0.220509 | 0.533073 | 0.416255 |
| 6 | 0.265041 | 0.140896 | -0.011110 | 0.541193 | 0.059957 |
| 7 | 0.265815 | 0.163297 | -0.054242 | 0.585872 | 0.103568 |
| 8 | 0.656139 | 0.207376 | 0.249689 | 1.062588 | 0.001556 |
| 9 | 0.201634 | 0.369715 | -0.522994 | 0.926262 | 0.585495 |
| 10 | 0.530348 | 0.235966 | 0.067863 | 0.992833 | 0.024604 |

**Note:** Dynamic matrix completion ATT estimates for the effects of practice closures on likelihood of voting for UKIP. Estimates are made using the `Fect` library in R (Liu, Wang, and Xu 2022).

# E Data Imputation using Gradient Boosted Trees

We predict propensity to vote for a populist right party using gradient boosted trees (Chen and Guestrin 2016). The model uses a grid search to optimize hyperparameters and achieves a mean accuracy score of 96.11% in predicting propensity to vote for a populist radical right party. We validate the model using a held-out test set (20%) of non-missing data and use 523,057 values of complete data to train the model.

We use the following variables as predictor variables to train the model.

1. "Do you generally think of yourself as a little closer to one of the parties than the others? If yes, which party?"
2. "Do you think that each of the following are getting better, getting worse or staying about the same? (The NHS)"
3. "Do you think that each of the following are getting higher, getting lower or staying about the same? (Immigration)"
4. "Which party did you vote for in the local elections?"
5. "What is the highest educational or work-related qualification you have?"
6. Ethnicity
7. Household income
8. "Which daily newspaper do you read most often?"
9. Housing situation (i.e. rent or own)
10. Social Grade
11. "Do you think that each of the following are getting higher, getting lower or staying about the same? (Crime)"
12. "Do you think immigration is good or bad for Britain's economy?"
13. "How much do you agree or disagree with the following statements?" (I'd rather put my trust in the wisdom of ordinary people than the opinions of experts)
14. "And do you think that immigration undermines or enriches Britain's cultural life?"
15. "Where would you place yourself on these scales?" (Englishness)
16. "In politics people sometimes talk of left and right. Where would you place yourself on the following scale?"
17. Country (e.g. Scotland, England etc.)
18. "How much trust do you have in Members of Parliament in general?"
19. "How much trust do you have in the MP in your local constituency?"
20. "During the next 12 months, how likely or unlikely is it that..." (There will be times when you don't have enough money to cover your day to day living costs)
21. "During the next 12 months, how likely or unlikely is it that..." (You will be out of a job and looking for work)
22. "How do you think the *general economic situation in this country* has changed over the *last 12 months*?"

23. "How much do you like or dislike each of the following parties?" (Conservatives)
24. "How much do you like or dislike each of the following parties? (Labour Party)
25. "How much do you like or dislike each of the following parties?" (UKIP)
26. "How much do you like or dislike each of the following parties?" (Brexit Party)
27. "How much do you like or dislike each of the following parties?" (British National Party)
28. "How likely is it that you would ever vote for each of the following parties?" (UKIP)
29. "How likely is it that you would ever vote for each of the following parties?" (Brexit Party)
30. "How likely is it that you would ever vote for each of the following parties?" (Conservative Party)
31. "How likely is it that you would ever vote for each of the following parties?" (Labour Party)
32. "As far as you're concerned, what is the SINGLE MOST important issue facing the country at the present time?"

# F Robustness Check - Interactive Fixed Effects Estimation

Table A7 presents the cumulative effects estimates of the closures on populist right voting using interactive fixed effects specifications (Bai 2009; Liu, Wang, and Xu 2022).

**Table A7:** Cumulative effects (ATT) of GP Closures on Vote Intention for the Populist Right

| | Imputed; all closures | All closures | Imputed; GP only | GP only |
|---|---|---|---|---|
| ATT.avg | 0.032** | 0.032** | 0.028** | 0.025* |
| S.E. | 0.010 | 0.010 | 0.012 | 0.012 |
| CI.lower | 0.013 | 0.013 | 0.005 | 0.002 |
| CI.upper | 0.051 | 0.051 | 0.051 | 0.048 |
| p.value | 0.001 | 0.001 | 0.016 | 0.031 |
| Observations | 65,443 | 65,443 | 65,443 | 65,443 |

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

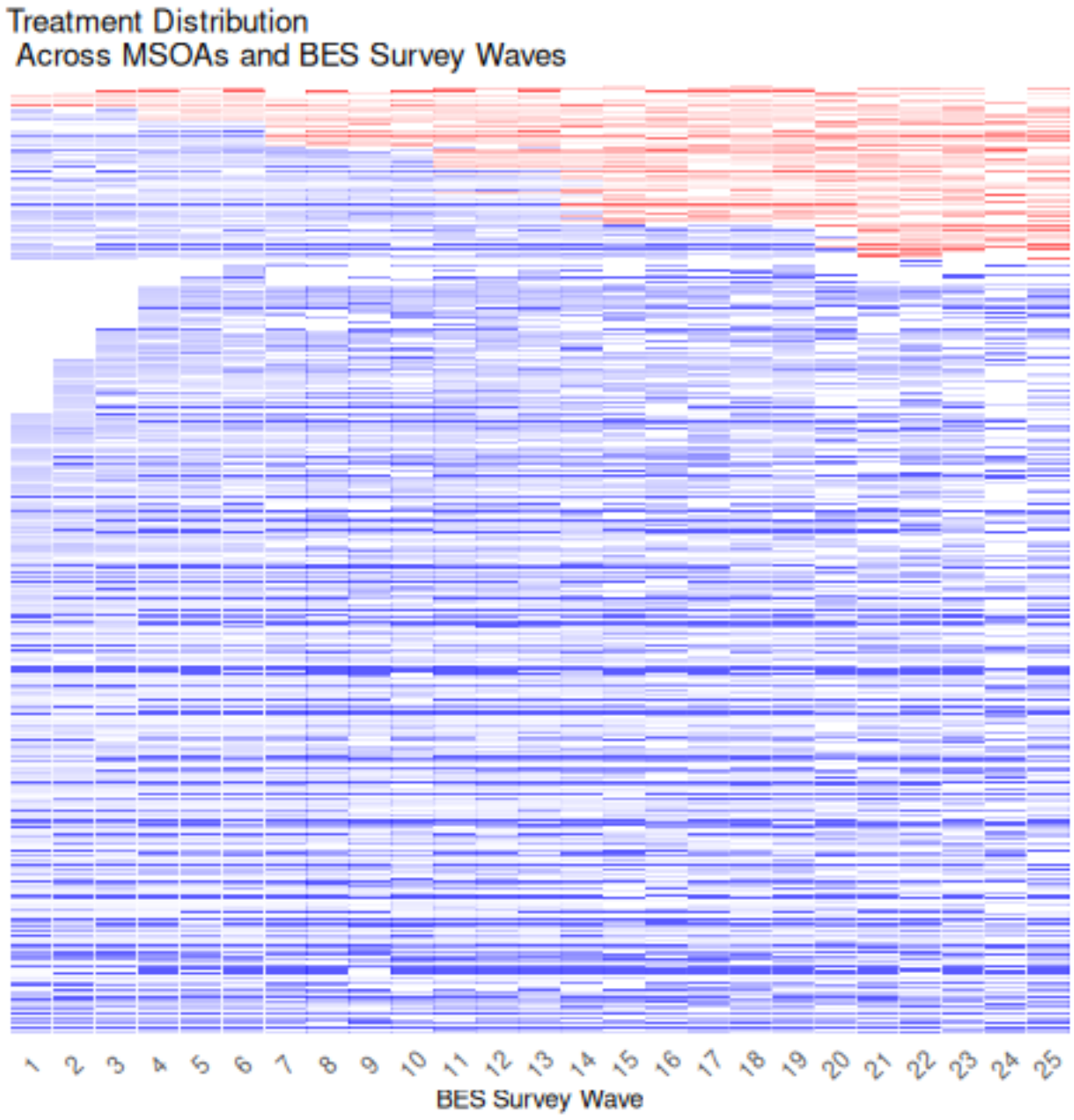
**Note:** Standard errors are presented in parentheses. Models use interactive fixed effects to estimate the effects of closures on intention to vote for a populist right party. All models estimated in `Fect` library in R (Liu, Wang, and Xu 2022).

# G Alternative GP Practice Closures Measurement

Figure A4 presents the alternative measure of GP practice closures. In the figure, each line indicates a different MSOA geographic area, and the line becomes red in the case that there is a reduction in the number of practices in a given MSOA (and from that point onwards).

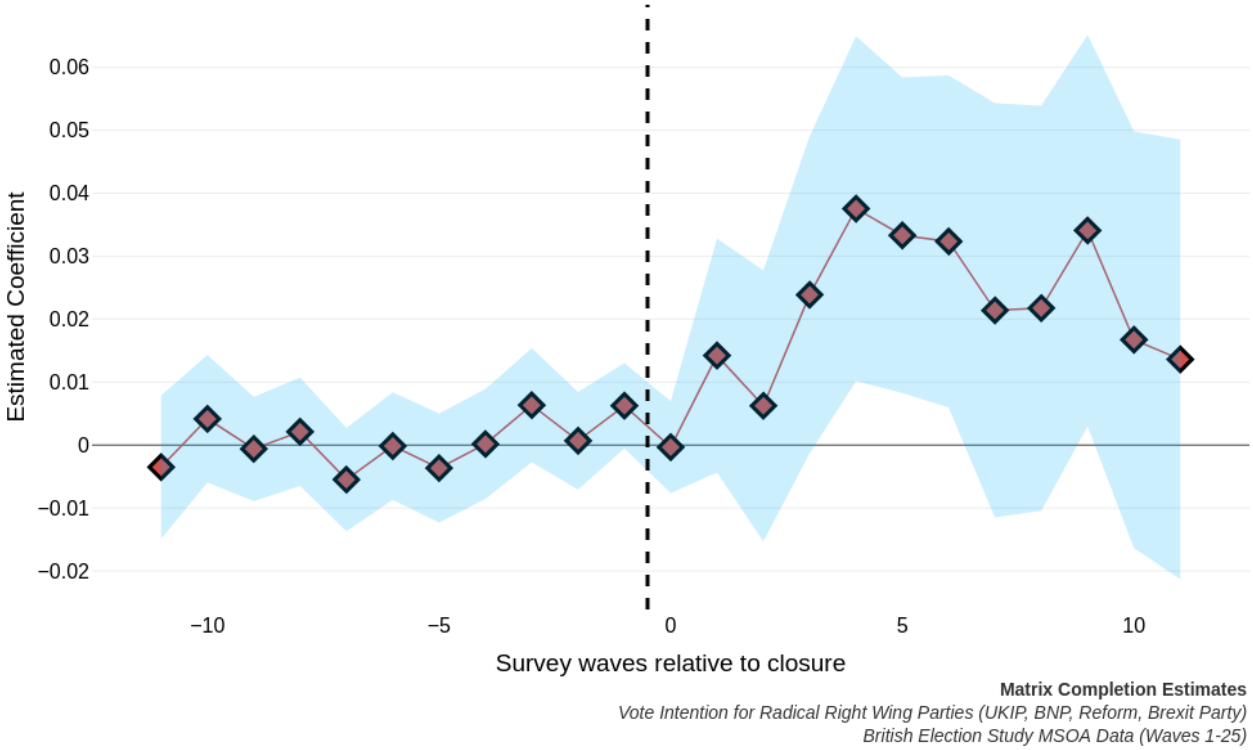
Figure A5 shows the dynamic effects of the reduction of the number of GP practices in a given MSOA on vote intention for the populist right in the same MSOA.

**Figure A4:** Treatment Schedule - Alternative Measure of GP Practice Closures




**Note:** Each line represents a Middle-Layer Super Output Area (MSOA) with the red lines indicating the year in which the number of practices decreased (and onward).

**Figure A5:** Estimated Effects of GP Practice Closures on Intention to Vote for Populist Right Parties - BES Data - Alternative Measurement




**Note:** Matrix Completion estimates and 95% confidence intervals for the effects of GP practice closures on self-reported voting for populist right parties. Parties include the British National Party, Reform UK, the UK Independence Party and the Brexit Party.