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Mobile Internet and the Rise of Communitarian Politics

Abstract

We study the political effects of the diffusion of mobile Internet between 2007 and 2017 using administrative data on electoral outcomes and on mobile Internet signal across the 82,094 municipalities of twenty European countries, which we complement with individual survey data on voters' values and positions. In line with literature in social psychology claiming that social media promote tribalism and make individuals particularly permeable to messages of intolerance that prime the insiders at the expense of the outsiders, we show that this technology led to an increase in voters' support for communitarian parties campaigning on nationalism and dislike of strangers and minorities. Our estimates suggest that between one third and one half of the remarkable success of communitarian parties, which roughly doubled their support over the period, can be ascribed to enhanced access to mobile Internet technology.

JEL-Codes: D720, D910, L860.

Keywords: communitarianism, mobile internet.

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1. Introduction

The cleavage between communitarian versus universalistic views of the world is increasingly recognized as a fundamental dimension of political conflict in modern democracies. Communitarian points of view emphasize loyalty to traditional communities and distrust of strangers, while universalist positions reflect generalized altruism and openness towards strangers. This cleavage is systematically reflected in opposite political opinions and policy positions about immigration, nationalism, supranational institutions, ethnic minorities, and the composition of government spending (Bornschier, 2010; Cappelen et al., 2022; Enke, 2020; Enke et al., 2023; Haidt, 2012). In Europe, support for communitarian parties, favoring insiders (the nation, the native-born and those sharing prevalent cultural traits) at the expenses of outsiders (supranational institutions, foreigners, migrants and minorities) roughly doubled between the mid-late 2000s and the mid-late 2010s, peaking at over 10 percent at the end of the period.

This period also saw a rapid diffusion of 3G and 4G mobile technologies, accompanied by the spread in the use of social media, which are by and large accessed through mobile devices.[1] While in 2007, the year Apple's iPhone first came on the market, around one third of European citizens were not yet in reach of mobile Internet signal, by the second half of the 2010s, mobile Internet coverage was effectively universal. A natural question is whether increased access to mobile Internet is responsible for the success of communitarian parties and, if so, why.

This paper argues that this is the case. Building on insights from social psychology that social media promote enhanced sense of, and make users particularly responsive to messages that prime, in-group identity and increased derogation of the out-groups, we argue that access to mobile Internet made voters more communitarian in their policy views, increasing their distrust and intolerance of strangers and enhancing nationalist tendencies. By exacerbating communitarian attitudes in the population, and by making voters more responsive to nationalist, anti-immigration, anti EU-integration propaganda, this technology contributed to the electoral success of communitarian parties locating on the right of the political spectrum.

A priori, the effect of mobile Internet and social media on views and opinions is ambiguous. By enabling individuals to communicate and be exposed to physically and culturally distant individuals and communities, online technologies have the potential to enhance universalism and the sense of belonging to a wider community (Rheingold, 2000). This would likely translate into voters adopting more liberal views and increasing their support for universalistic parties. On the other hand, an influential literature in social psychology argues that social media promote in-group bias and out-group animosity, especially when individuals and communities feel under threat. Indeed, there is extensive evidence

[1] According to the "Digital 2021 Global Report" by the media agency "We are Social", for example, 81 percent of Facebook users accessed the platform exclusively via a mobile phone in 2021, while only 1.7 percent did so via a laptop or desktop computer. In the same year, people spent an average of 3 hours 39 minutes on mobile phones daily, of which 50.1 percent was spent on social media.

that online social networks exhibit a large degree of political homophyly (D'Amico and Tabellini, 2022; Halberstam and Knight, 2016), especially among conservatives (Barberá et al., 2015), which is likely to strengthen in-group bias. This does not necessarily imply that individuals are unaware of the ideas of others, but undermining opposite points of view is often a feature of the online political discourse (Bright et al., 2020).

In particular, an influential body of work in social psychology shows that social media promote online "tribalism", i.e., in-group favoritism and out-group animosity. Evidence from this literature shows that content characterized by moral outrage, fear and animosity is particularly effective at capturing users' attention and creating engagement (Berger and Milkman, 2012; Crockett, 2017; Rathje et al., 2021; Vosoughi et al., 2018), which in turn creates incentives for both users and platforms to produce and spread such content.[2] Online animosity is best directed towards out-group members, both because the return from producing and sharing derogatory content is higher when directed to the out-group relative to the in-group (Rathje et al., 2021), and because the cost is lower, as out-groups pose a lower risk of offline retaliation (Crockett, 2017).[3] In addition, theories of social identity suggest that when the in-group versus out-group distinction becomes hyper-salient, as it is the case in an online environment, individuals have an incentive to subsume their individual identity into the in-group, and adopt its norms and prescriptions, at the expense of the out-group (Tajfel and Turner, 1979).

In light of this evidence, it seems reasonable to speculate that social media might have increased support for nationalistic policy platforms and intolerance towards immigrants and minorities. This might happen because social media exacerbate communitarian tendencies, or because political messages promoting communitarian positions are particularly effective in persuading voters through social media.

In order to substantiate our claim, we exploit granular data on mobile signal availability and administrative data on electoral outcomes in national parliamentary elections, combined with data on party platforms, between 2007 and 2017. In particular, we focus on several dimensions of party policies and ideologies that subsume the cleavage between universalism and communitarianism, such as support for traditional values, minority rights and multiculturalism, as well as position towards immigration and European integration. Our sample includes twenty major European countries, accounting for around 450 million people and ninety-six percent of the EU27 population. The novel data that we have assembled for this exercise come at the level of municipality, the lowest administrative unit according to the standard statistical nomenclature of territorial units. The data cover more than 80,000 municipalities, each accounting for roughly 5,500 individuals on average. We complement the analysis with individual-level survey data that allow us to provide direct

[2] Emotionally charged Tweets, for example, tend to be re-shared about 20 percent more than neutral Tweets on the same topic (Brady et al., 2017; Stieglitz and Dang-Xuan, 2013), while on Facebook people engage disproportionately with more sensationalist and provocative content (Zuckerberg, 2018). There is also evidence that exposure to counter-attitudinal views that reduce affective polarization is discouraged by the Facebook algorithm (Levy, 2021).

[3] Indeed, over 70 percent of online hate speech is directed towards geographically and socially distant minorities (United Nations, 2021).

evidence on the effect of mobile Internet access on voters' attitudes and policy views.

For identification, we exploit the gradual rollout of mobile Internet signal across municipalities in the spirit of a diff-in-diff analysis. We first present evidence based on an event-study, which exploits the differential timing of large local increases in mobile Internet coverage across municipalities. We show that greater access to this technology is systematically associated to an increase in the vote share of parties characterized by extreme policy platforms in dimensions that are nationalistic and communitarian, such as opposition to minority rights, immigration, multiculturalism and European integration. OLS regression estimates, which include all municipalities in the sample and control for an array of area characteristics, confirm these findings. In sum, this evidence lends strong support to the hypothesis that improved access to mobile Internet was responsible for the electoral success of communitarian parties in Europe.

An obvious concern about the OLS estimates stems from the non-random allocation of coverage across municipalities, which would lead to biased estimates of impact. For this reason, in our main analysis, we focus on 2SLS estimates based on a novel identification strategy relying on insights from the corporate finance literature. A classical body of work, rooted in the agency theory of the firm (Jensen, 1986; Jensen and Meckling, 1976), argues that managers have considerable discretion to engage in projects on behalf of the company that yield personal benefits (see Shleifer and Vishny, 1997, for a review) and there is evidence that CEOs promote investment in areas close to their residence (Decaire and Sosyura, 2022). Closely related, an influential body of research shows that managers extract personal rents when the firm or the sector is performing well for reasons beyond the managers' control, due to shareholders' inattention which creates room for managers' slack (Bertrand and Mullainathan, 2000, 2001). We thus instrument mobile Internet coverage with the interaction between the log distance of each municipality from the closest birthplace of a Telecommunication manager in office in the preceding years and the country's growth rate in mobile phone coverage. In light of the literature in corporate finance, we expect areas closer to managers' birthplaces to receive greater coverage and this effect to be particularly pronounced in periods of higher sectoral growth, something which we find strong evidence for. Of course, 2SLS estimates could capture simultaneous trends in coverage and electoral outcomes along dimensions associated to a municipality distance from managers' birthplaces, as the latter tend to be larger and more affluent than the average country municipality. We take this concern at heart and we provide a wealth of evidence corroborating our identification assumption.

2SLS results confirm the positive effect of mobile Internet on the electoral success of communitarian parties in Europe. In particular, our estimates imply that the increase in mobile Internet coverage in our sample period (from 68 to 97 percent of the population) is responsible for an increase in the vote share of right-wing communitarian parties of 2 to 3.4 percentage points, approximately one third to one half of the observed increase, depending on the measure of communitarianism used.

The effect is amplified by local economic deprivation, measured in terms of the unem-

ployment rate, income growth or share of poorly educated individuals. This finding is consistent with the literature on scapegoating, arguing that in-group bias rises when individuals and communities are under threat, and evidence that ostracism of outsiders and minorities becomes more widespread during economic crises (Gelfand et al., 2011; Jackson et al., 2019; Stephan and Stephan, 2013). This is because, during bad times, people seek someone to blame for their misfortunes, and outsiders are obvious scapegoats. Thus bad times provide rationales for intolerance of minorities and distrust of strangers, making such behavior socially more acceptable (Allport et al., 1954; Bursztyn et al., 2022). We also find that the effects are smaller in areas with an ageing population, consistent with elderly voters being less exposed to social media than younger voters.

In order to delve on mechanisms, we study the effects of mobile Internet coverage on individual policy opinions and voting intentions from the Integrated Value Surveys (IVS) (Gedeshi et al., 2021; Haerpfer et al., 2021). We show that access to mobile Internet made respondents more opposed to immigration, more nationalistic, more intolerant of minorities and less supportive of EU institutions, all dimensions that we find being significant predictors of electoral support for communitarian parties. This effect is primarily due to respondents with stronger baseline communitarian attitudes (and more likely to vote for communitarian parties) becoming more extreme in their views. Consistent with the literature in social psychology discussed above, we interpret these findings as suggesting that, by fostering fear, outrage and animosity towards out-group members, mobile Internet and social media exacerbated conservative extremism in voters with communitarian tendencies, increasing their support for policy positions and ideologies demanding closed rather than open societies and making them more susceptible to conservative political propaganda.

We also investigate and discard a variety of widely discussed alternative mechanisms for our findings. We find no evidence that mobile Internet increased turnout or that it affected voting outcomes due to changes in the composition of those casting their vote. We also do not find evidence that mobile Internet favored new parties *per se*. The latter suggests that the effect that we estimate is not due simply to the circumstance that communitarian parties were newer than other parties, and hence more capable of capitalizing on new technologies or more appealing to voters when exposed to social media. Due to our sample period preceding that of widespread circulation of fake news on social media, we also rule out that the effects we uncover are due to online misinformation.

Our paper is related to several lines of research. First, we contribute to the literature on the political effects of the media, and in particular social media and the Internet (for all, see Tucker et al., 2018; Zhuravskaya et al., 2020).[4] A large body of research has

[4] An established body of literature in economics finds effects of TV on political outcomes, such as reduced turnout and lower political knowledge as voters substitute away from newspapers (Gentzkow, 2006); political persuasion of ideologically biased media (DellaVigna and Kaplan, 2007; Enikolopov et al., 2011); persistent political effects of entertainment TV (Durante et al., 2019). See Strömberg (2015) for a review of this literature. Manacorda and Tesei (2020) show that mobile phones increase political mobilization and protests in Africa but only when sufficient reasons for grievance exist.

argued that fixed broadband availability has led to a decline in political participation and - via this - reduced government accountability (Falck et al., 2014; Gavazza et al., 2019), although there is also evidence that in the long-term this generates opportunities to reach out to disenfranchised voters (Campante et al., 2018).

A recent set of papers focus on mobile Internet and the role of social media on political outcomes. The paper most closely related to ours is Guriev et al. (2021), which, using data for a large number of low- and high-income countries around the world, shows that, by exposing misgovernance and corruption, 3G mobile availability reduces voters' confidence in government and reduces the incumbent's chances of re-election. The authors also provide evidence for Europe that this mechanism is able to explain reduced support for traditional parties to the advantage of anti-establishment populist parties both on the left and on the right. Relative to this paper, our paper contributes to the debate on the electoral consequences of mobile Internet technology in Europe in at least two key dimensions. First, we focus on parties' communitarian platforms rather than their populist rhetoric or ideology. In particular, we show that, albeit correlated, communitarianism and populism are two distinct phenomena and, more important, we provide evidence that the effect of mobile Internet is found for all communitarian parties, irrespective of whether classified as populist on not. Instead, we find no evidence that increased mobile Internet coverage is correlated with greater support for left-wing populist parties. Second, we focus on a novel mechanism of impact that is related to changes in voters' policy preferences and ideology and that is rooted in the tendency of this technology to promote tribalistic attitudes among users. In this sense, our work is also closely related to that of Müller and Schwarz (2021), Bursztyn et al. (2019) and Bursztyn et al. (2020), who argue that exposure to social media may fan the flames of hate towards minorities, both by changing individual attitudes and by increasing individuals' willingness to publicly express previously untenable social norm positions.

A separate literature in political science claims that Internet and social media lead to "echo chambers", i.e., citizens' tendency to engage in conversation with and draw information from similarly politically-oriented audiences. This has been proposed as an explanation for the increase in political polarization in the USA (Sunstein, 2018). Evidence in economics, though, seems to find mixed support for this hypothesis (Boxell et al., 2017), and our evidence also seems to run counter it. Although admittedly our results refer to Europe, with markedly different political institutions and electoral rules compared to the USA, increased polarization would imply a greater mass of voters in both tails of the distribution, while we only find a positive effect of mobile Internet on communitarianism but not on universalism.

Finally, our work relates to a body of literature that points to the emergence of new political cleavages and emphasizes voters' realignment across dimensions of social identity rather than traditional class conflict (Besley and Persson, 2021; Bonomi et al., 2021; Danieli et al., 2022; Grossman and Helpman, 2021; Hooghe and Marks, 2018; Shayo, 2009, 2020). None of this work, though, draws a link between the so-called ICT revolution - arguably

the most relevant cultural change of our times - and the rise of identity politics, or focuses on a mechanism working through increased tribalism.

The rest of the paper is organized as follows. Section 2 discusses the data and descriptive statistics associated to electoral outcomes and diffusion of mobile Internet coverage. Section 3 lays out the empirical strategy. Section 4 presents the empirical results on administrative-level voting outcomes. Section 5 presents direct evidence on mechanisms of impact using individual-level data. Section 6 discusses and rules out alternative mechanisms. Section 7 concludes.

2. Data Sources and Descriptive Trends

In this section we introduce data on electoral outcomes and mobile Internet penetration that we use in the rest of the analysis, and we characterize their levels and trends both within and across countries, as well as for the continent as a whole.

2.1. Electoral Outcomes

Starting from information produced by national electoral commissions, we have assembled novel data on the number of votes by party between 2007 (the first year for which we have information on mobile Internet coverage) and 2017 (when coverage was effectively universal) across the 82,094 municipalities of twenty major European countries, accounting for almost half a billion people.[5,6] The data refer to voting outcomes in all national lower house parliamentary elections held over the period, with the exception of France, for which the data refer to the first-round Presidential elections, and typically cover three elections per country. For thirteen of these countries, we were also able to collect information on the number of eligible voters by municipality, which allows us to compute measures of local turnout.

In order to characterize trends in support for communitarian and universalistic parties, we use data from the Chapel Hill Expert Survey (CHES, Jolly et al., 2022), which provides a consistent source across space and time on parties' policy positions and ideologies. We focus on measures that, broadly speaking, refer to support for a closed as opposed to an open society.[7] In particular, we first consider (1) the variable GAL-TAN (Hooghe et al.,

[5] Countries in the sample are: Austria, Belgium, Bulgaria, Czech Republic, Denmark, Finland, France, Germany, Greece, Hungary, Italy, Luxembourg, Netherlands, Poland, Portugal, Romania, Slovakia, Spain, Sweden, and United Kingdom. These include all major EU27 countries (with the exception of the following small countries: Croatia, Cyprus, Estonia, Ireland, Latvia, Lithuania, Malta).

[6] Local Administrative Units (LAUs) are the lowest administrative units according to the EU nomenclature of territorial units for statistics and, in most countries, they correspond to municipalities. In the rest of the paper, we refer to LAUs as municipalities. Appendix Table B.1 provides details on the number of municipalities per country.

[7] The CHES database is based on experts' assessment of parties' platforms and ideologies and it covers the majority of European parties, providing a consistent source across space and time. We use CHES data from waves 2006, 2010, 2014 and 2017. A list of the precise questions in CHES is provided in Appendix Table B.2.

2002; Hooghe and Marks, 2009) - literally, Green, Alternative, Libertarian vs. Traditionalist, Authoritarian, Nationalist - a widely used measure of the cultural cleavage between universalism (support for open borders, individual and minority rights and acceptance of global authorities) and communitarianism (support for traditional values, defense of the national community against competing sources of identity and support for the sovereignty of states). Second, we focus on parties' positions on immigration, in particular on (2) positions in favor of restrictive immigration policies, and (3) on support for migrants' integration as opposed to multiculturalism. Immigration often features as one of the major sources of concern among European citizens, and it is a central area of disagreement between communitarians and universalists (e.g., Cappelen et al., 2022). There is also evidence that opposition to immigration in Europe is mostly driven by compositional amenities - those who oppose immigrants mostly do so because they want neighbors and co-workers who share their language, ethnicity, culture, and religion - rather than because of economic concerns (Card et al., 2012). Relatedly, we consider parties' (4) support for ethnic minorities' rights as well as their (5) position towards European integration. The latter has been an extremely divisive issue in Europe since the great recession, with several parties - both on the right and on the left - opposing the process of integration, on the grounds that it dispossesses national states of their sovereign authority. We also consider the CHES classification of parties in terms of broad ideological leaning, namely (6) a traditional measure of left-right ideological orientation. We rescale all variables in CHES so that higher values correspond to more communitarian positions. For each variable, we define communitarian (universalistic) parties as those in the top (bottom) deciles of the respective continent-wide distribution.[8] The list of communitarian parties according to these definitions is reported in Appendix Table A.1.

Table 1 characterizes continent-wide trends in support for communitarian and universalistic parties. Each observation is a municipality X election year. The Table reports results from regressions of the vote share for these parties by year of election and municipality on a linear year trend (divided by eleven, i.e., the implied trend over the period 2007-2017) and municipality fixed effects. This also accounts for compositional changes due to elections not being synchronized across countries. Regressions are weighted by municipality population and standard errors are clustered at the country level.

The results in the upper panel show a marked increase in support for communitarian parties, which more than doubled their initial voting share over the period. In particular, parties characterized by extreme positions on the defense of traditional values and strongly opposed to individual and minority freedoms (column 1) increased their electoral support by 4.2 percentage points. An even greater electoral success, of between 5.6 and 6.8

[8] For each party, we use averages of these measures across all surveys over the period for which this information is available. We do so because data on party platforms are not available in all years when a party was in existence, and because experts' assessment varies discretely over time - an artificial result of the survey being run every three to four years - and the latter might mis-measure position at the time of elections. Ultimately, this makes virtually no difference to our results: a regression of time-varying measures of party positions in CHES on party fixed effects yields an R^2 or 0.95, implying that there is very little within-party variation in positions over time.

percentage points, was enjoyed by parties advocating extremely restrictive immigration policies and strongly opposing multiculturalism and ethnic minority rights (columns 2 to 4), as well as opposing the process of EU integration (9.1 percentage points, column 5). The overall shift in support for communitarian parties is mirrored by a 7.3 percentage points increase in the vote share of far-right parties (column 6). These trends capture the success of well-known extremely conservative parties such as the French *National Rally*, the Italian *League*, the *Alternative for Germany* and the Hungarian *Fidesz*, as well as of less well-known parties such as the Slovak *National Party* and the Bulgarian *Attack*.

By contrast, results in the bottom panel of the Table show that, despite notable and well-known exceptions such as *Podemos* in Spain and *Syriza* in Greece, there was only a modest increase in support for parties characterized by universalistic policy platforms and ideologies. In sum, Table 1 shows that, over the eleven years of observation, the European political landscape underwent a major transformation, with an unprecedented success of parties holding communitarian positions, with no corresponding change in support for parties holding universalistic positions.

Although Table 1 provides clear evidence of continent-wide trends in voting outcomes, these trends mask substantial heterogeneity both across and within countries. Figure 1 presents the shares of votes for communitarian parties - defined based on GAL-TAN - across European municipalities at two different points in time, 2010 and 2017.[9] Results are very similar if we focus on other dimensions of communitarianism. The data refer to the vote share in the closest preceding election. We also show the boundaries of the 264 NUTS2 European regions. Redder (bluer) areas denote higher (lower) vote shares for communitarian parties.

Focusing on the upper panel, one can observe considerable support for communitarian parties, on the order of 20 percent or more of the vote share, in Central and Eastern European countries such as Austria, Poland and Hungary, already in 2010. At the end of the sample period, in 2017 (lower panel), support for communitarian parties is further consolidated in these countries. In addition, a number of large and mid-sized European countries, where communitarian parties previously had little or no representation, also witness a marked increase. These include France (from 5 to 12 percent), Germany (from 0 to 7 percent), Sweden (from 6 to 13 percent), Greece (from 4 to 10 percent) and the Czech Republic (from 0 to 11 percent). Figure 1 also shows pronounced intra-country variation in vote for communitarian parties. Notable trends include rises in support for *Alternative For Germany* in former East Germany, for *National Rally* in peripheral areas in the South and Northeast of France and for the *Sweden Democrats* in the country's Southern regions.

In order to characterize trends across municipalities, we integrate electoral data with information on municipality characteristics from the European Spatial Planning Observation Network (ESPON).[10] In Appendix Table A.2 we report regressions of municipality-level

[9] We report data for 2010 because this is the first year in which all countries in the sample had held at least one election since 2007.

[10] Descriptive statistics are reported in Appendix Table B.3.

support for communitarian and universalistic parties on the interaction between a set of baseline municipality characteristics and a linear year trend.[11] Regressions include municipality and year fixed effects and standard errors are clustered at the level of NUTS2 regions. The results show that, as a whole across Europe, the rise in support for communitarian parties was particularly pronounced in poorer municipalities, with high unemployment, low population density and a younger population. Broadly speaking, trends in support for universalistic parties as a function of baseline characteristics, display opposite patterns, with the notable exception of local unemployment, which predicts a rise in both communitarianism and universalism.

2.2. Mobile Internet Coverage

In order to investigate the effect of mobile Internet on voting outcomes we use proprietary data on the availability of mobile phone signal across the twenty European countries in our sample. The data are collected by the GSMA (the association representing the interests of the mobile phone industry worldwide) in partnership with Collins Bartholomew (a digital mapping provider) and they come from submissions made directly by mobile operators for the purposes of constructing roaming coverage maps for end users. For all years starting in 2007, the data provide geo-located information on mobile phone coverage at the level of precision of between 1 (for high-quality submissions based on GIS vector format) and 15-23 squared kilometers on the ground (for submissions based on the location of antennas and their corresponding radius of coverage) (GSMA, 2012). We focus on 3G and 4G technologies, which allow for data transfer through mobile devices and hence access to e-mail, Internet content and a variety of social media. We aggregate mobile phone coverage at the municipality-level. Our measure of coverage is the fraction of the municipality's area in reach of the signal.[12,13]

Figure 2 reports the spatial distribution of coverage by municipality at the beginning (top panel) and the end (bottom panel) of the period. As of 2007, when the Apple iPhone first reached the European market, a large share of municipalities in most Eastern European countries, as well as in large Western European countries, such as France and Spain

[11] The availability of municipal-level information in ESPON varies depending on the variable considered. While for virtually all municipalities in the sample we have information on area, population, per capita GDP, urban/rural status, fraction of population below 15 and above 60 years old, information on a wider set of characteristics (employment structure by one digit industry and unemployment to working age population ratio) is missing for up to 25 percent of the (population weighted) observations, with a few countries missing entirely. Education is missing for around 60 percent of the population and for this reason we do not use it.

[12] For each municipality, we take the maximum between 3G and 4G coverage. As this is typically an incremental technology (i.e., 4G signal allows for 3G reception), de facto, this is equivalent to taking the fraction of municipality area that is covered at least by 3G signal.

[13] Obviously, these data do not refer to actual mobile Internet usage, for which data for the whole of Europe at this level of geographical disaggregation are not readily available. However, signal availability is strongly correlated with actual subscriptions across countries and time, suggesting that supply-side constraints are significant predictors of take-up. Using aggregate data at the country-year level from the International Telecommunication Union, we estimate an elasticity of mobile broadband take-up to 3G/4G coverage of 0.47, statistically significant at conventional levels.

was still uncovered. Of course, the Figure does not account for the spatial distribution of the population. Hence, we compute country- and continent-level coverage by taking weighted averages of coverage across municipalities with weights equal to their population. This shows that in 2007 around 32 percent of the overall European population, roughly 144 million individuals, were not yet in reach of the signal. Specifically, this number was over 75 percent for countries in Eastern Europe, and between roughly 15 and 40 percent in Western Europe, depending on the country. While, for example, 2007 coverage in Germany and Italy was on the order of 86 percent, in countries such as Belgium, France, Denmark and Sweden this stood at 65 percent or less. Yet in other countries like Greece, the fraction of the population in reach of mobile Internet signal was less than 50 percent. By 2017, virtually all of the European population was covered by the signal, with only 3 percent of the population still uncovered.

The Figure also illustrates considerable variation in coverage at baseline, as well as differential trends, across municipalities within the same country. Appendix Table A.3 shows that most of the rise in coverage over the period happened in poorer, less densely populated municipalities and with an ageing population. We do not find other significant predictors of coverage. Given that coverage was almost universal by the end of the sample period, this implies that these areas were also underserved at baseline.

3. Empirical Model

In this section we discuss the specification and the identification of our empirical model. As we are interested in identifying the effect of the availability of mobile Internet on voting outcomes, we estimate the following model:

$$y_{mct} = \beta\ Cov_{mct} + X'_{mc}\theta_t + \ f_m\ + f_t + u_{mct} \tag{1}$$

where mct denotes a generic municipality m in country c at year t, y_{mct} are the electoral outcomes or measures of voters' positions described in the previous section and Cov_{mct} is mobile Internet coverage.

In the model we include both municipality (f_m) and year (f_t) fixed effects, hence exploiting for identification the within municipality variation net of generalized continent trends. We also increasingly include municipality baseline characteristics, X_{mc}, which we interact with unrestricted year effects to account for latent trends in outcomes that might be correlated with coverage. Below, we also experiment with more saturated specifications that include the interaction of country X year effects as well as the three-way interaction between baseline controls, country and year effects.

Also note that, although in model (1) we restrict to variation across narrowly defined administrative areas, one may still be concerned about the endogenous location of mobile Internet coverage. If areas with faster growth in coverage over the period also experienced lower (greater) increase in support for communitarian parties, then simple OLS will provide

downward (upward) biased estimates of the parameter β. In addition, coverage is likely to be measured with error, potentially leading to attenuation bias in the OLS estimates. This is because the data are reported by operators, with varying levels of geographical detail and possibly some delay. An additional source of measurement error comes from the data providing no information on the strength of the signal and hence actual signal availability. Both sources of measurement error are likely to be particularly relevant when focusing on very fine geographies such as municipalities.

In order to address such sources of potential bias, we build on a classical literature in corporate finance on "pet projects". This body of work, rooted in the agency theory of the firm (Jensen, 1986; Jensen and Meckling, 1976), argues that managers have considerable discretion to engage in projects on behalf of the company that yield personal benefits without increasing the value of the firm (see Shleifer and Vishny, 1997, for a review). Recent empirical evidence for the oil and gas industry in the USA indeed shows that CEOs promote investment in areas very close to their (and their relatives') residential properties, a mechanism that the authors precisely ascribe to direct returns from benefitting those areas - e.g., in terms of property value appreciation - or to lower effort (Decaire and Sosyura, 2022). A closely related and influential body of research documents that such agency problem is more acute when managers face loose monitoring. In particular, Bertrand and Mullainathan (2000, 2001) show that managers extract personal rents when the firm or the sector is performing well for reasons beyond the managers' control, due to shareholders' inattention, which creates room for managers' slack.[14]

In light of this literature, one will expect managers of Telecommunication (TLC) companies to over-invest in areas they have personal knowledge of or derive personal benefits from, and in particular for this effect to be more pronounced in periods of high sectoral growth, and hence greater shareholders' inattention. Building on Decaire and Sosyura (2022), we proxy such areas with those close to managers' birthplaces. We operationalize this approach by instrumenting coverage with the interaction between municipality's log distance from the nearest birthplace of a TLC manager (D_{mct}) and the country's annual growth rate in mobile phone coverage ($\Delta lnCov_{ct}$), a measure of sectoral demand growth. Since infrastructural investment is likely to take time to materialize, we take average log distance to the closest birthplaces of managers in office at any time over the three years preceding t. Of course, in the model we also include the main effect for log distance to a manager's birthplace D_{mct}.[15]

In formulas, our first stage equation is:

$$Cov_{mct} = \gamma\ Z_{mct} + X'_{mc}\lambda_t +\ f_m\ + f_t + v_{mct} \tag{2}$$

[14] Brollo et al. (2013) provide evidence of a related mechanism in public finance, with voters being less able to monitor misallocation of resources on a larger budget.

[15] In practice, as this variable is highly persistent over time due to low managers' turnover, results are unchanged if we include this as an additional instrument or if we further control for it in the main equation.

where $Z_{mct} = D_{mct}\,\Delta lnCov_{ct}$, and γ captures the gradient in coverage as a function of the interaction of the distance to managers' birthplaces and sectoral growth. If proximity to a manager's birthplace matters for investment and this effect is enhanced when the sector is growing rapidly, one will expect γ to be negative.

The identification assumption behind the consistency of the 2SLS estimates relies on the lack of correlation between changes over time in latent voting patterns and changes over time in mobile Internet coverage across municipalities at different distance from managers' birthplaces. Of course, a concern might still exist that distance from managers' birthplaces possibly correlates with other determinants of trends in vote, which would invalidate the identification assumption. In particular, if managers are born in larger or more affluent cities, and nearby areas also happen to be on different latent trends in voting compared to more remote areas, our identification assumption will fail. We explicitly address this issue below using a variety of alternative strategies.

4. Empirical Results

In this section we present estimates of our regression model. We first present evidence based on an event-study design, we then move to the OLS estimates and we finally focus on the 2SLS estimates.

4.1. OLS Estimates

Before presenting the regression results, and to add transparency to the analysis, Figure 3 presents graphical evidence based on an event-study design. As municipalities experience multiple increases in coverage over the period, we focus on the first year when a municipality experienced an increase in coverage of at least 25 percentage points over two consecutive years.[16] We present coefficients from regressions of each outcome variable on indicators for different lags and leads (from -4 to +7) since the time when the change occurred. Regressions include municipality and year fixed effects and are weighted by municipality population. As we include municipality fixed effects in the regressions and we restrict to municipalities that are treated at some point during the period, we are short of two degrees of freedom for identification, hence we constrain the coefficients at lags -1 (as customary in event-study graphs) and -4 (the longest lag) to zero. De facto, we identify treatment effects net of deviations from trends between these two points in time. Point estimates, alongside 95 percent confidence intervals based on clustering at the NUTS2 region level, are reported in Figure 3. Independent of the outcome variable used, one can clearly see modest, and by and large statistically insignificant, off-trend estimates up to lag - 1. One can also observe an increase in communitarianism occurring precisely in the year when the discrete increase in coverage occurs, with a positive gradient as time

[16] Overall, around 70 percent of municipalities in our sample experience at least one year-on-year increase of at least 25 percentage points over the period, and of these more than 50 percent experience only one such increase.

goes by. Results for universalistic parties in Appendix Figure A.1 show no evidence of pre-trends and a flat or declining support for such parties following the rollout of mobile Internet coverage.[17]

While we revert to the precise magnitude of the effects below, when we present regression results that include controls and exploit the entire range of variation in coverage, we emphasize that the data lend strong support to the common trend assumption and provide evidence consistent with coverage leading to an increase in support for communitarian parties, with effects that magnify over time.

In Table 2 we report OLS estimates of equation (1). We use as dependent variable the fraction of municipality votes accruing to communitarian (top panel) and universalistic (bottom panel) parties, along the various dimensions in CHES. Because we have shown that the effect of Internet coverage on political outcomes manifests with some lag, we use average coverage over the previous three years as a measure of treatment. In addition to municipality and year effects, the model also includes a set of baseline municipality characteristics (log population, log area, log income per capita, a dummy for urban and the fraction of the population below age 15 and above age 60) interacted with unrestricted year effects. Regressions are weighted by municipality population and standard errors are clustered by NUTS2 regions.

Consistent with the event-study analysis and independent of the measure used (and with the exception of multiculturalism), we find a positive effect of mobile Internet access on support for communitarian parties, with estimates that are statistically significant at conventional levels and on the order of 1 to 4 percentage points. To put these numbers in context, they imply that the rise in continent-wide coverage in our sample period (from 68 to 97 percent) is responsible for an increase in communitarian vote of between 0.4 (=0.013 X 0.29, for opposition to ethnic minorities) and 1.3 (=0.44 X 0.29, for GAL-TAN) percentage points, depending on the measured used. This is between 7 and 31 percent of the observed increase in these parties' vote share.

Corresponding estimates for the effect on support for universalistic parties in the bottom Panel of Table 2 are negative, typically statistically significant and not dissimilar in absolute value from the estimated effects on support for communitarian parties. This suggests that the ideological distribution of European voters along the communitarian/universalistic dimension shifted overall to the right in response to increased mobile Internet coverage. These results also point to a highly asymmetric effect of mobile Internet on support for communitarian versus universalistic parties in Europe over the period

[17] Given that the magnitude of the effects appears to vary depending on the time since treatment, one concern is that already treated units do not serve as a valid counterfactual for units that change their treatment status and hence that a TWFE estimator fails to identify the causal parameter of interest (for all, see Roth et al., 2022). For this reason, we have also experimented with the estimator in De Chaisemartin and D'Haultfoeuille (2022). This estimator allows to deal with a staggered continuous treatment, like in the case under analysis. Although attractive in theory, this estimator relies on the existence of control units that happen to be untreated for a very long number of periods. Unfortunately, and irrespective of the number of leads and lags or the definition of the threshold, this condition is not met in our data and the estimator (which we implement via the command did_multiplegt in Stata) systematically fails to converge.

considered, which is inconsistent with theories of technology-induced political polarization that some authors (e.g., Sunstein, 2018) have claimed having been at play in the USA.

In sum, and consistent with the event-study evidence, the OLS estimates provide strong support for our hypothesis that increased mobile Internet access was associated to a rise in communitarianism among European voters.

4.2. 2SLS Estimates

Despite the granular variation in the data and the inclusion of controls and fixed effects, a concern still remains that the OLS estimates capture a spurious correlation between coverage and communitarianism. For this reason, in the rest of the paper, we focus on 2SLS estimates. As a first step, in this section, we present estimates of our first stage model (2). As said, our identification strategy relies on differential variation in coverage across areas at different distance from the birthplaces of TLC managers as the sector evolves. In order to perform this exercise, we rely on information on the identity of the 219 managers of the 69 main European TLC companies operating during the period 2007-2017. The data come from BoardEx (www.boardex.com), that collects biographical information on corporate directors and top managers in executive positions in publicly listed firms (and hence all large TLC companies in Europe) since 1999.[18] The data provide information on these managers' years of entry in and exit from the position, as well as their date of birth. For each of these individuals, we integrate this dataset with information on their municipality of birth.[19]

First stage estimates of model (2) are presented in Table A.4. In practice, we regress municipality coverage on the instrument, namely municipality's log distance from the closest manager's birthplace in office interacted with the growth rate in the country's coverage. Consistent with the regressions in the previous section, we include in the model municipality and year fixed effects. As said, since investment decisions might take time to materialize, we use average log distance to managers in office in the three preceding years. The estimate of the coefficient γ on the instrument in column (1), where we use the same specification as in Table 2, namely with the inclusion of baseline controls interacted with year dummies, is negative and statistically significant at conventional levels. At -0.068, this implies that, as a country moves from high sectoral growth (on average 12 percent, i.e., what is observed in the early years) to zero growth (towards the end of the sample period), the gap in coverage between two municipalities one standard deviation apart in terms of log distance from a manager's birthplace (2.16) reduces by around 1.8 percentage points (=-0.068 X 0.12 X 2.16). At the bottom of the table we report the associated F-statistic. At 114.7, the value of the statistics indicates that we can safely reject that the instrument is weak. In sum, consistent with the corporate finance literature discussed

[18] Collectively over 90 percent of the observations refer to CEOs, CFOs, Presidents, Vice Presidents and Chairmans, as well as top Executive and Managing Directors and Chief Officers in a range of key functions (e.g., marketing, strategy, legal, sales, etc.).

[19] We do so by using a combination of publicly available sources and proprietary data from the consulting firm Korn Ferry.

above, the data provide strong evidence in support of distance to managers' birthplaces being predictive of investment in infrastructures and more so in periods of high vis à vis low sectoral growth.

We now turn to the 2SLS estimates of equation (1), reported in Table 3. Here we present the same specification as in Table 2 and column (1) of Table A.4. These estimates confirm our conclusions based on OLS: we find a positive effect of mobile Internet coverage on support for communitarian parties (top panel), with estimates that are statistically significant at conventional levels and on the order of 0.078 (for opposition to multiculturalism) to 0.115 (for left-right ideology). To put these numbers in context, these estimates imply that the rise in continent-wide coverage from 68 to 97 percent was responsible for an increase in communitarianism of between 2 (=0.29 X 0.078, for opposition to multiculturalism) to 3.4 (=0.29 X 0.115, for left-right ideology) percentage points, depending on the measure used. This is up to approximately one half of the observed increase in these parties' vote share. 2SLS estimates of the effect of 3G and 4G coverage on support for universalistic parties (in the bottom Panel of Table 3) are of the opposite sign and of similar magnitude compared to those found for communitarian parties.

Compared to the OLS estimates, 2SLS are qualitatively similar although approximately two to five times larger in magnitude. This is consistent with measurement error in coverage leading to substantially attenuated estimates. A second potential source of bias in the OLS is due to unobserved heterogeneity, whereby places on a steeper gradient in terms of support for communitarian parties experienced lower increase in coverage. Evidence based on observable characteristics in Tables A.2 and A.3, though, is overall inconclusive, as some of these characteristics (e.g., population density) predict equally signed trends in both communitarianism and mobile Internet, while others (e.g., the fraction of older individuals) predict the opposite.

A third plausible explanation for the difference between the OLS and the 2SLS estimates rests on the set of municipalities affected by our instrument (i.e., the compliers). Appendix Figure A.3 reports first stage estimates of the parameter γ in equation (2), separately by municipality population vingtiles. The Figure shows that the estimates of the first stage coefficient are larger in magnitude in medium-sized relative to small or very large municipalities.[20] For the 2SLS to be larger than the OLS, one will hence expect the effects of coverage on the population of compliers to be stronger than in the population at large. Indeed, previous literature (e.g., Storper, 2018) has argued that medium-sized cities and peri-urban centres in Europe have experienced a considerable worsening of economic prospects over the past decades and this explains them turning to communitarian parties (Dijkstra et al., 2020). This suggests that such areas may be particularly responsive to the rise in mobile Internet. Consistent with this, we show below that the effect of mobile Internet on support for communitarian parties was the strongest in locally economic

[20] This is consistent with a simple model where managers may incur a cost if caught favoring their birthplace, but can disguise their decision by appealing to market demand forces. This would suggest that an effect should not be expected in very small cities, where the ability to conceal favoritism is limited, nor in large cities, which are likely to be covered regardless of managers' favoritism.

deprived areas.

A remaining concern with the 2SLS estimates is that the instrument may not be excludable, i.e., it may capture latent trends in voting outcomes in areas at different distance from managers' birthplaces. Given that managers are not born at random across municipalities, and specifically are more likely to be born in large cities, one might be in particular concerned that the instrument captures the differential increase in support for communitarian parties in municipalities at different distance from large urban centres, and that these municipalities also happened to be on a systematically different trend in coverage during the period.

In an attempt to probe our exclusion restriction, we first augment our baseline specification as in Table 3 with the inclusion of controls for log distance to the largest municipality in the country, in the NUTS2 region and in the NUTS3 province, all interacted with year dummies. If distance to large urban centres drives our results, one will expect the estimates to be affected by the inclusion of such controls. However, results reported in Appendix Table A.5 are essentially unaffected by the inclusion of such measures of proximity to large cities, supporting our claim that distance to large cities is not driving our 2SLS results.

As a complementary test, we also present regression results where we increasingly restrict to municipalities that gravitate around - i.e., for which the closest manager's birthplace is - a small city. If our instrument simply captures distance to large urban centres, then one will expect 2SLS estimates in these restricted samples to be smaller in magnitude compared to those in Table 3. As shown in Appendix Figure A.2 and discussed in Appendix C, while managers are more likely to originate from large cities, still a significant fraction (around 50 percent) come from municipalities ranked below the top fifteen in the country based on population. These are small municipalities, with an average population of around 4,000 individuals. Evidence in Appendix C shows that, once we restrict the sample to municipalities that gravitate around smaller managers' birthplaces, observable municipality characteristics become increasingly less predictive of distance. For example, once we exclude birthplaces that rank among the top fifteen in each country in terms of population, out of eight municipality characteristics, only two (population density and share of the population aged less than 15) enter significantly in the regressions. Appendix Table A.6 report 2SLS estimates of model (1), where we restrict the sample to municipalities for which the closest managers' birthplace is not one of the top five (top panel), ten (middle panel) or fifteen (bottom panel) largest municipalities in the country. If anything, point estimates are larger than those in Table 3 and statistically significant at conventional levels for all measures of communitarianism. At the same time, results in the bottom panel show no significant effect of mobile Internet on support for universalistic parties. This provides further evidence in favor of our identification assumption.

We have performed a variety of robustness checks for our results. First, the estimates remain statistically significant at conventional levels if instead of clustering standard errors by NUTS2 region, we use Conley (1999) standard errors to allow for arbitrary spatial correlation, with thresholds of 50 or 100 km (higher thresholds lead to estimates that

are only marginally significant) or if we cluster standard errors by country. Results are reported in Appendix Table A.7.

Second, we have experimented with alternative definitions of the dependent variable. In the regressions above, for each dimension in CHES, we have used the fraction of votes accruing to parties in the top or bottom decile of the continent-wide distribution. In Appendix Table A.8 we define communitarianism/universalism based on the top and bottom quartiles (what we define as moderate communitarianism/universalism) of the respective continent-wide distribution. In Appendix Table A.9 we define communitarian and universalistic parties as those in the top and bottom deciles of the national, as opposed to the continental, distribution. In Appendix Table A.10 we use as dependent variable the weighted average (as opposed to the fraction in the tails) of each variable in CHES, with weights given by the fraction of municipality votes accruing to each party. Irrespective of the measure used, the results remain in line with those in Table 3, showing, if anything, that the latter provide conservative estimates of impact.

Third, results reported in Panel A of Appendix Table A.11 show that our estimates remain quantitatively unchanged, although they are less precise, if we include in the model an additional set of municipality controls that are missing for a large share of observations (employment structure by one digit industry and unemployment to working age population ratio) also interacted with year dummies (and we include in the model dummies for missing values of these variables to preserve the sample size). Corresponding first stage estimates are reported in column (2) of Table A.4 and are very similar to those in column (1).

Fourth, results are qualitatively unchanged if we include in the model country X year fixed effects as well as the triple interaction between baseline controls, country and year effects. 2SLS estimates are reported in Panel B of Appendix Table A.11. Corresponding first stage estimates are reported in column (3) of Table A.4: the coefficient on the instrument roughly halves relative to column (1) but remains highly statistically significant, with an F-test of 47.12. 2SLS estimates from this highly saturated model show an effect that is loaded exclusively on communitarianism, with estimates smaller in magnitude compared to Table 3 (by an order of roughly two to four) but still positive and statistically significant at conventional levels.

In sum, 2SLS estimates corroborate the findings based on the OLS that access to mobile Internet caused voters to increase their support for communitarian parties. If anything, it appears that, due to a combination of measurement error and heterogeneous responses to increased access, the OLS provide conservative estimates of impact. A number of additional tests lend support to the exclusion restriction and show the robustness of our empirical results.

4.3. Heterogeneous Effects by Area Characteristics

Model (1) assumes that the effect of mobile Internet availability is the same across municipalities, irrespective of their characteristics or underlying economic conditions. The literature reviewed in the Introduction, though, emphasizes that tribalism is enhanced when individuals feel under threat or face economic hardship. Hence, a natural conjecture is that economic insecurity, that others have found to be a direct driver of voting patterns (e.g., Algan et al., 2017; Dustmann et al., 2017), amplifies voters' responses to mobile Internet access. In order to investigate this, we augment model (1) to allow for the interaction of mobile Internet coverage with municipality characteristics from ESPON.

2SLS regression results are reported in Appendix Table A.12, where we interact coverage with a specific local trait. Here, we standardize each trait to the continental average, so that the coefficient on the main effect captures the effect of mobile Internet coverage at the average value of the trait (as in Table 3). Consistent with our conjecture that economic grievances amplify the effect of mobile Internet on communitarianism, the data show that the effects are larger in areas with higher unemployment, lower regional income growth and lower share of highly educated individuals. To put these results in context, a one standard deviation increase in the local unemployment to population ratio (approximately 0.021) leads to an additional effect of coverage on support for parties holding communitarian position as measured by GAL-TAN of 0.033 (=0.021 X 1.589). This is half of the effect at the mean (0.066). We find similar gradients in terms of regional GDP growth and share of highly educated individuals. We also find that the effects are smaller in areas with an ageing population, consistent with elderly voters being less exposed to mobile Internet and social media than younger voters. There is no clear gradient in terms of urban status: while urban municipalities happen to respond more to the availability of mobile Internet compared to rural municipalities, the interaction coefficient is statistically insignificant at conventional levels for all outcomes. Results for universalistic parties, in Appendix Table A.13, are mixed in sign and often statistically insignificant at conventional levels. Overall, these results suggest that the positive effect of mobile Internet on communitarianism is amplified by economic discontent, lower education and a large pool of users, as proxied by a greater share of younger individuals.

5. Individual-Level Evidence on Mechanisms: Changes in Voters' Attitudes

In the previous section we have shown that a substantial fraction of the increase in the vote shares of communitarian parties in Europe can be ascribed to the spread of mobile Internet. Consistent with claims in the social psychology literature discussed in the Introduction, our hypothesis is that voters exposed to mobile Internet and social media became more communitarian in their opinions and policy preferences and that these media increased the effectiveness and persuasiveness of political propaganda directed against immigrants,

outsiders or European institutions. In this section we discuss several pieces of evidence that support this interpretation.

To measure individual opinions, we use survey data from three waves of the Integrated Values Surveys (IVS) over the period 2008-2017.[21] A major advantage of these data is that, alongside a wide set of individual socio-demographic characteristics, they report information on respondents' ideological stance on a variety of policy issues, as well as their voting intentions. In an attempt to mimic the information in CHES, we analyze several dimensions of voters' ideology and attitudes in IVS that proxy for the divide between Green, Alternative, Libertarians (GAL) and Traditionalists, Nationalists and Authoritarians (TAN). In particular, we focus on measures of (1) nationalism, (2) attitudes towards individual freedoms and civil rights and (3) identification with the local as opposed to the global community. Similar to the information in CHES, we also consider variables capturing (4) voters' attitudes towards migration, (5) intolerance towards minorities, (6) opposition to EU enlargement (as opposed to integration, which is recorded in CHES but not in the IVS) and (7) ideological leaning on the left-right scale. As these indicators are often derived from multiple questions in IVS, when applicable, we first perform a principal component analysis on the various dimensions' sub-components and we use the predictions based on the first principal component as an outcome variable. We also compute a synthetic measure of communitarianism that is the principal component of all the above variables in IVS. Like for party platforms, we express all variables so that higher values correspond to higher communitarianism, and we express them in terms of their standard deviation for ease of interpretation. Appendix Table B.5 reports the exact definition of such variables based on the questions in IVS.

The IVS data also provide information on respondents' place of residence, although only at the level of regions (NUTS2 or sometimes NUTS1) as opposed to municipalities. For each country, hence, we define consistent regions across surveys and we assign geographical variables (e.g., mobile Internet coverage, as well as local baseline characteristics) to each individual based on the region of residence. The data allow us to identify respondents across 245 regions in nineteen countries (all countries in the main analysis with the exception of Luxembourg).

As a preliminary exercise, we study whether voters' preferences on the issues listed above are predictive of their vote. If so, this would confirm that the communitarian dimension of these parties was salient to voters and explained how they voted. In order to do so, for each individual in IVS, we construct indicator variables equal to one if the individual's closest party is labelled communitarian or universalist according to the definitions in CHES and we regress these variables on voters' attitudes. Results in Appendix Table A.14 show that, irrespective of the variables used, there is a strong congruence between voters' preferences and party platforms. For example, column (1), rows 1 and 2, illustrate that supporters

[21] This dataset combines information from two large-scale cross-national surveys, the European Values Study (EVS, Gedeshi et al., 2021) and the World Values Survey (WVS, Haerpfer et al., 2021). The waves cover the following periods: 2008-2009; 2010-2014; 2017-2018.

of communitarian parties (defined based on such parties locating in the top decile of the distribution of the variable GAL-TAN) display a level of nationalism that is 0.439 of a standard deviation higher than supporters of moderate parties and 1.125 (0.439+0.686) of a standard deviation higher than supporters of universalistic parties.

As a second step, we study the direct effect of exposure to mobile Internet on voters' opinions. To add transparency to the analysis, we start by providing descriptive evidence that voters' opinions moved in the direction of voters becoming more communitarian precisely in areas where mobile Internet coverage increased more. Figure 4, top panel, reports the probability density function of the synthetic measure of voters' communitarian attitudes in IVS, separately for areas with low (below the first quartile, top panel) and high (above the first quartile, bottom panel) levels of baseline coverage at the beginning and at the end of the period. Two observations emerge. First, at baseline, areas with low coverage were more communitarian than those with high coverage. Second, areas with low initial coverage became even more communitarian at the end of the period, while the reverse was true in areas with high initial coverage. Since initial coverage is inversely related to coverage growth, this suggests that the rise in communitarian attitudes happened precisely in areas that experienced greater growth in coverage. These areas also happened to be more communitarian to begin with.

We now turn to a more formal regression analysis. The level of geographical detail in the IVS data (regional, instead of municipal) prevents us from exploiting variation in coverage induced by the instrument. The latter relies on precise location of municipalities relative to managers' birthplaces, and we find little evidence that this variation is able to predict differential coverage across regions. For this reason, we revert to the OLS estimates. It is reassuring, however, that evidence in Section 4.2 shows that the OLS provide conservative estimates of the effect of mobile Internet on communitarianism. We investigate the effect of 3G and 4G coverage on opinions using the same specification as in model (1), where now the dependent variable varies at the level of individual. Similar to Table 2, we include in the model region and year fixed effects, and the interaction between baseline area characteristics and year dummies. We also control for an array of individual controls.[22] We weight the regressions by sampling weights and we cluster standard errors at the level of regions. Consistent with the suggestive evidence in Figure 4, regression results reported in Table 5 reveal remarkably strong shifts in opinions among voters experiencing a rise in access to mobile Internet. In particular, we find sizeable and statistically significant effects on levels of communitarian attitudes, with an implied effect of the rise in coverage over the period (from 68 to 97 percent) that varies between 0.09 (=0.311 X 0.29, for self-reported left-right ideology) to 0.28 (=0.963 X 29, for dislike of minority neighbors) of a standard deviation, depending on the measure used. Unsurprisingly, we also find positive and precisely estimated effect of mobile Internet on our synthetic measure of

[22] Individual controls include: age, marital status, a dummy for low education, gender, working-class status (defined based on occupation), and residence in a city with population of at least 100,000. We also include a dummy for whether the data come from the EVS or the WVS.

communitarianism in column (8).[23,24]

The finding that mobile Internet exposure made voters on average more communitarian, by itself, need not fully explain the positive effect on vote shares of communitarian parties. What happens to vote shares depends on which part of the voters' distribution is mostly affected by exposure. An average rise of communitarianism among voters could benefit moderate and centrist parties more than extreme communitarian parties, if it was due to a dampening of universalist tendencies (i.e., the left tail of the distribution moving to the centre). To shed light on this, we investigate which voters are most affected by exposure to the new technologies, both in their opinions and in their voting intentions.[26] We perform this exercise in Figure 5 that reports the estimated effect of access to mobile Internet on both outcome variables (opinions and voting) separately by vingtiles of voters' predicted baseline communitarianism.[27] We also interpolate across groups using a smoothed kernel regression. Two results stand out. First, differential changes in voting outcomes across groups closely mimic differential changes in opinions. In the spirit of an overidentification test, this reinforces our claim that changes in opinions induced by the new technology caused a shift in voting patterns. Second, the rise in both communitarian attitudes and in support for communitarian parties is larger the larger the level of baseline communitarianism.[28] This explains why extreme communitarian parties were the main beneficiaries of changes in voters' preferences. Since most of the rise in communitarian attitudes was concentrated at the top of the distribution, with marginally communitarian voters embracing extreme positions, extreme communitarian parties were better positioned than their more moderate rivals to intercept these new extremist tendencies in the electorate.

[23] To validate the OLS regression results on voting outcomes reported in Table 2, we also estimate the effect of mobile Internet on self-reported support for communitarian parties (defined according to different CHES variables) among IVS respondents. Results are reported in Appendix Table A.15. Since extremist parties' voters may be unwilling to report how they voted, we also show results on support for moderate communitarian and universalistic parties (in the top and bottom quartiles, respectively). Although we find mixed evidence of an effect of mobile Internet on support for extreme communitarian parties, with estimates changing in sign depending on the outcome variable, we find a consistent positive effect of mobile Internet on support for moderate communitarian parties, and no effect on universalistic parties, whether extreme or moderate.

[24] Given our data, we cannot rule out that, either directly or through party propaganda, exposure to mobile Internet additionally increased the salience of cultural and identity issues related to the communitarian versus universalistic divide, making voters more responsive to party positions on these issues. We note, however, that, if the salience of cultural issues increased for all voters, one would expect voters who strongly opposed communitarian positions to be more attracted to universalistic parties, which is the opposite of what we find.

[26] Our analysis combines the effect of differential access to mobile Internet across voter types, and of differential effects of access on individual opinions, without enabling us to separate the two.

[27] We use the first IVS wave available for each country to regress voters' level of communitarianism (as proxied by the synthetic index of communitarianism) on a rich set of individual characteristics (age, marital status, education, working class status, residence in a big city, foreign born, number of children, religious affiliation, employment status, all interacted with a gender dummy) plus country fixed effects and we use the estimated coefficients from this regression to assign to each individual - whether in the first or subsequent surveys - their baseline level of communitarian attitudes.

[28] Results in Appendix Table A.16 in particular show that the effect of exposure to mobile Internet on communitarian attitudes is the largest among male, old, poorly educated, working-class, married individuals and those residing in cities with population less than 100,000 individuals, all traits that are often found to be predictive of more conservative cultural attitudes (e.g., Golder, 2016).

6. Alternative Mechanisms

In this section, we discuss a number of alternative explanations for our findings.

6.1. Communitarianism versus Populism

Several authors (e.g., Guriev and Papaioannou, 2020; Rodrik, 2018) have documented a rise in support for populist parties in Europe since at least the Great Recession,[29] and others before us (Guriev et al., 2021) have provided evidence that 3G and 4G technologies have contributed to this rise, a phenomenon that these authors ascribe to voters' disillusionment with traditional parties, as mobile Internet helps inform the public about episodes of government corruption. We show below that the phenomenon we uncover is of a different nature.

The notion of populism commonly used in the literature is somewhat ambiguous because, unlike our definition of communitarian parties, it is not precisely linked to well defined policy positions. Nevertheless, to shed light on this issue, we rely on two widely used classifications of populism, respectively by Rooduijn et al. (2019) and Norris (2020). While the former defines populism as a political ideology and the latter as a form of political rhetoric, both classifications identify the distinction between "the pure people" versus "the corrupt elite" and the idea that legitimate authority flows directly from the will of the people as defining features of populist parties.

Appendix Figure A.4 reports kernel density estimates of the distribution of the variables in CHES separately for populist and all other parties. We use a restrictive definition of populism that is based on a party being classified as populist according to both classifications. Three observations are in order. First, populist parties are markedly more communitarian than other parties, with the mass of the distribution significantly shifted to the right. Second, there is large variation in communitarianism even among populist parties, with some of these parties holding moderate views in a variety of dimensions. Third, even among non-populist parties, there is a non-negligible fraction holding communitarian views. In sum, communitarianism and populism are two highly correlated phenomena, although the correlation is far from perfect. This allows us to separately examine the effect of mobile Internet on communitarianism and populism.

We do so in Table 4, where we reports 2SLS estimates of the effect of mobile Internet on support for three mutually exclusive groups of parties: communitarian populist, communitarian non-populist and non-communitarian populist parties. Two main observations

[29] A burgeoning literature in economics and political science, reviewed by Guriev and Papaioannou (2020), investigates the economic and cultural determinants of the rise in populism. Key economic drivers range from austerity measures (Fetzer, 2019), technological change (Anelli et al., 2021), exposure to international competition (Autor et al., 2020; Colantone and Stanig, 2018), immigration (Dustmann et al., 2019; Halla et al., 2017), globalization (Rodrik, 2018), unemployment and economic grievances (Algan et al., 2017; Dustmann et al., 2017) and associated economic insecurity (Guiso et al., 2020). An alternative explanation, championed by Norris and Inglehart (2019) suggests that this phenomenon is ascribable to the gradual backlash of previous dominant groups, who felt threatened in their identity by liberal elites embracing universalistic positions.

emerge from the Table. First, we find a positive and significant increase in support for communitarian parties, irrespective of whether populist or not (see rows 1 and 2). Point estimates are remarkably similar across the two groups, statistically significant at conventional levels, and on the order of 0.03 to 0.06, implying that around half of the increase in support for communitarian parties induced by mobile Internet is due to the success of parties that are not classified as populist. This suggests that the effect of mobile Internet on voting goes beyond specific features of populism, such as its ideology or rhetoric. Second, we also find an increase in support for non-communitarian populist parties (row 3). The estimated effects are still positive and not very dissimilar in magnitude from the effects found for the other groups, but they are statistically insignificant. This suggests that there may be features of populist parties - other than their communitarianism - that possibly become attractive to voters when exposed to mobile Internet, but these effects are not precisely estimated.

Taking stock, while we confirm that the effects highlighted by Guriev et al. (2021) are at play, i.e., that mobile Internet led to a rise in support for populist parties in Europe, we uncover an effect on support for communitarian parties, irrespective of whether populist or not. This is a novel finding in the literature.

6.2. New Parties

A related explanation for the systemic change in European politics over the last decade is that voters disillusioned with traditional parties turned en masse to new and untested parties (e.g., Hobolt and Tilley, 2016). Newer parties may have been better equipped at communicating on the Internet than traditional parties and particularly effective at using social media to promote their political platforms. This could explain the effect of mobile Internet on the success of communitarian parties, as these parties are on average younger than traditional parties (by between 12 and 23 years, depending on the measure used).

However, we find little evidence in support of this mechanism in the data. Appendix Table A.18 presents results from regressions where the dependent variable is now the fraction of votes for new parties, defined as parties created during our period of observation, i.e. starting in 2007, which collectively account for 25 percent of parties in our data. Row 1 refers to the overall vote share received by new parties, while rows 2 and 3 distinguish between the share of votes received by new communitarian parties and new non-communitarian parties, respectively. The estimates in row 1 show that mobile Internet access was not associated with an increase in the overall vote share of new parties, suggesting that the technology did not favor newly created parties *per se*. Instead, we see clear evidence that new communitarian parties benefited from the introduction of mobile Internet (row 2). If anything, this increase in support came at the expense of support for newly created non-communitarian parties (row 3), although these estimates are not statistically significant at conventional levels. In sum, there is no evidence that new parties gained support irrespective of their communitarian views. Instead, the results suggest that

it was not their being new, but rather the values they promoted, that made communitarian parties particularly well-suited to benefit from the introduction of mobile Internet.[31] This also allows us to discard that the change in voters' attitudes that we document in section 5 is a by-product of the attractiveness that these parties exerted on voters due to their novelty or media savviness.

6.3. Voters' Turnout

Others have shown that Internet can increase grass-root participation and ultimately mobilize voters, especially in support of anti-elite parties (Campante et al., 2018) and there is an argument that the success of populist parties is ascribable to increased participation of disaffected voters (Mudde and Kaltwasser, 2017). An alternative hypothesis is that this technology discouraged voters supporting moderate, non-extreme parties. This is consistent with evidence that Internet reduced turnout (Gavazza et al., 2019), although this evidence refers specifically to fixed broadband and to a period prior to the widespread availability of social media.

In order to directly analyze the role of selection in driving our results, we focus on the thirteen out of the twenty countries for which we have municipality-level information on number of eligible voters. This allows us to express the fraction of votes for communitarian parties in relation to the total number of such voters, as opposed to total votes cast. It also allows us to compute measures of turnout at the local level. Results are reported in Appendix Table A.17, where we revert to the same specification as in Table 3 and where the last column refers to a regression with turnout as dependent variable. Even with this measure of vote shares, our results remain unchanged compared to Table 3. Although, admittedly, we cannot rule out that a combination of increased turnout among supporters of communitarian parties and reduced turnout among supporters of non-communitarian parties explain our results, that these two forces perfectly cancel each other seems overall unlikely, and it appears that compositional changes induced by variation in participation are unable to account for our main results. Consistent with this, we find a precisely estimated zero effect (0.018) of mobile Internet on turnout. This evidence allows us to rule out that the effects we uncover are ascribable to voters' de/mobilization as opposed to changes in preferences.

6.4. Fake News

It is well documented that fake news circulate widely on social media, and that they spread faster and more widely than true news (Vosoughi et al., 2018). There is also evidence that algorithmic amplification on Twitter favors the right compared the left (Huszár et al.,

[31] It is possible that higher demand by voters for more communitarian policies induced the entry of new communitarian parties in some countries. This would be one way in which political supply adapts to changes in voters' demands. But this phenomenon would not detract from our argument that the causal mechanism that led to the rise in the vote share of communitarian parties originates in the effect of mobile internet on voters' preferences.

2022), although this finding refers to moderate as opposed to extreme parties. Moreover, right-wing voters appear to have less trust in traditional media, and hence are more permeable to fake news, than left-wing voters (Swift, 2016). These arguments might in principle suggest that one of the reasons why mobile Internet promoted the success of communitarian parties is via misinformation. However, existing credible evidence on the electoral consequences of exposure to fake news suggests that their effect is overall negligible (Allcott and Gentzkow, 2017). Independent of the political effects of fake news, and although we have no data to directly investigate their role, the timing of effects seems to definitely rule out this as a candidate explanation for our findings. This is because widespread fake news circulation did not happen until the mid-2010s (Vosoughi et al., 2018), so only towards the end of our period of observation.

7. Conclusions

Mobile Internet has transformed social interactions, contributing to the diffusion of social media and changing the mode and content of political communication. In this paper we have shown that an important political effect of these new technologies has been to increase support for parties with extreme right-wing and communitarian positions on social and cultural issues, a shift that we trace back to changes in voters' attitudes towards extreme positions when exposed to mobile Internet and social media. This is consistent with a large body of evidence in social psychology about the effects of social media, arguing that these strengthen in-group bias and animosity against out-groups and make political messages that capitalize on distrust of others particularly palatable to users. It is therefore not surprising that the diffusion of these media has exacerbated communitarian perspectives and enhanced the effectiveness of protectionist and nationalist propaganda by right-wing politically extremist parties.

We close with a few words of caution about the generalizability of our results. Our analysis refers to a period of very rapid growth in the availability of mobile Internet and the associated use of social media. It is possible that the effects we uncover are associated to the very fast transition to these technologies and that such effects will not persist over time. Online platforms' moderation of content in particular might offset the tendency of these technologies to promote communitarian attitudes. In addition, the decade 2007-2017 is special in many respects, and not just because of the rise of social media. Many other phenomena, such as pressure from immigration, globalization and labor-saving technologies fuelled discontent and appear to have contributed to changes in voting patterns (Autor et al., 2020; Guriev and Papaioannou, 2020). Consistent with our findings that the effect of mobile Internet and social media is larger in more economically and socially deprived areas, it is possible that our results capture the effect of these new technologies at this specific economic juncture and that their impact would have been different in the absence of such major economic transformations.

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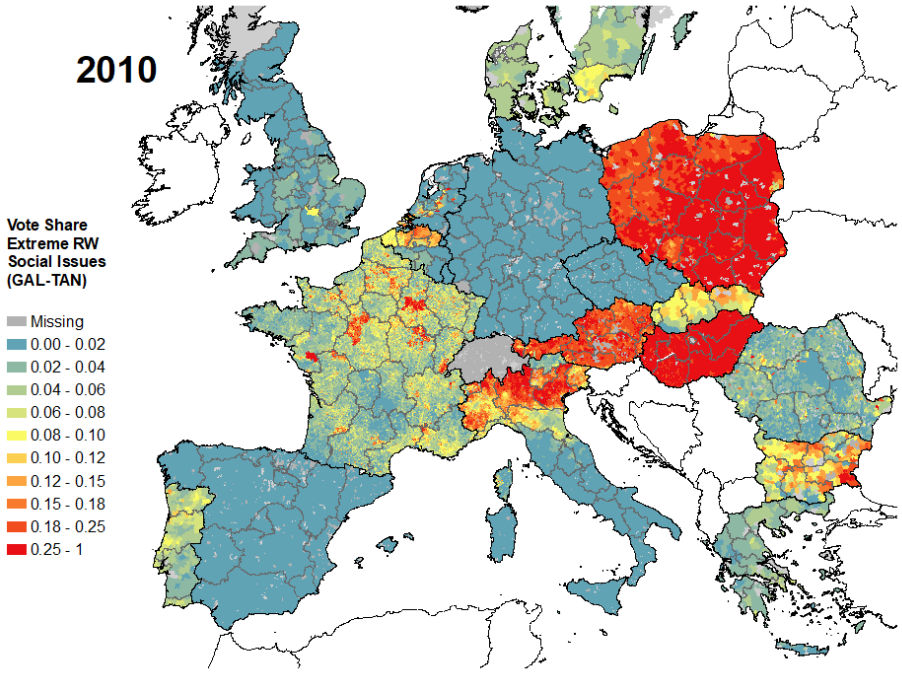
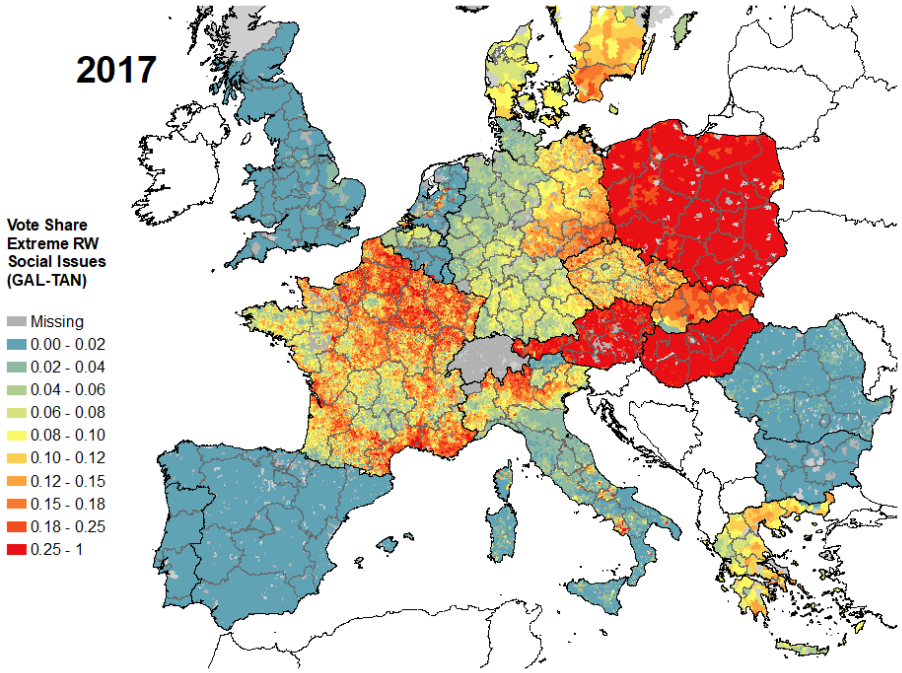
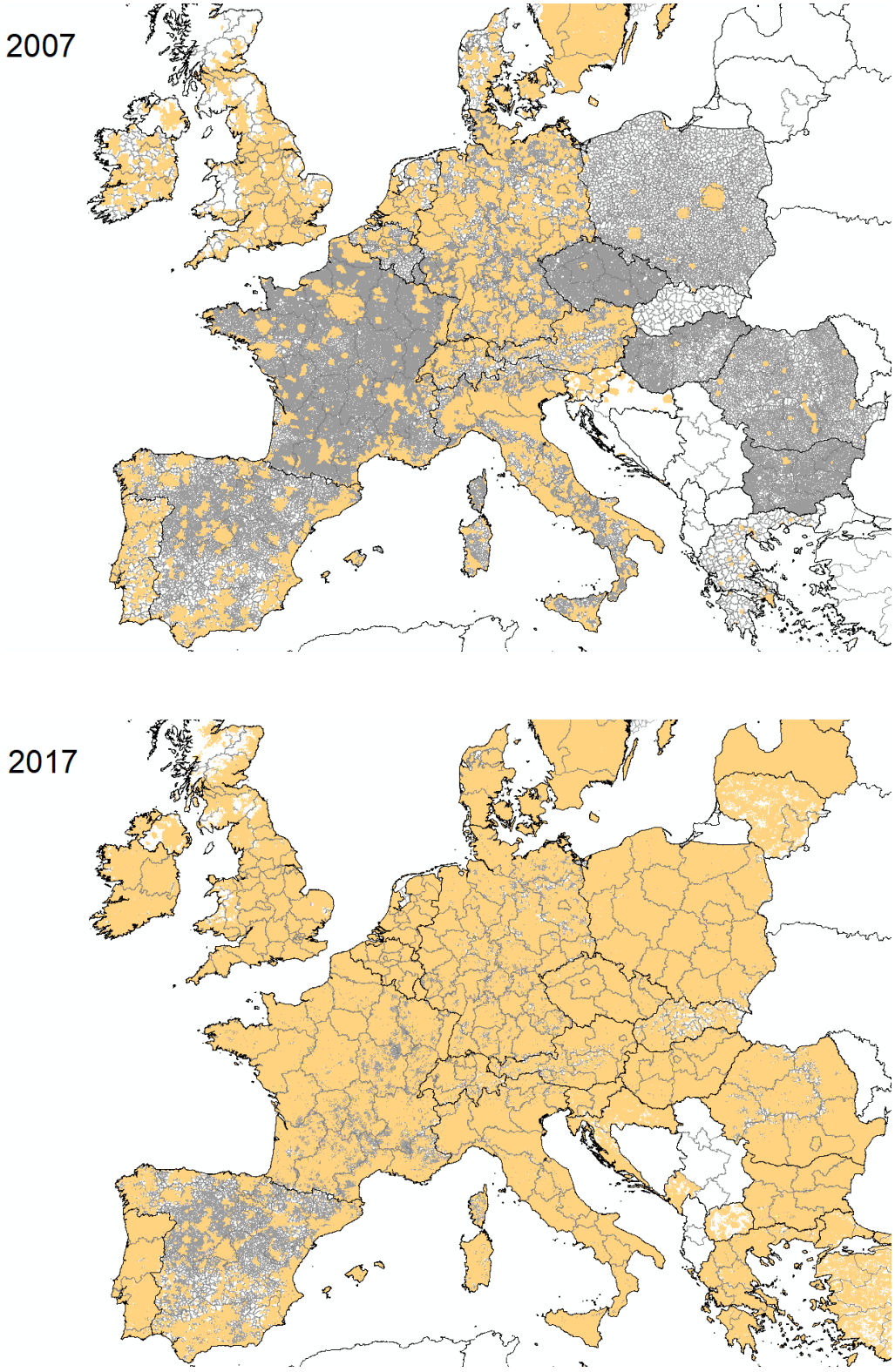
Figure 1 Trends in Support for Communitarian Parties across European Municipalities





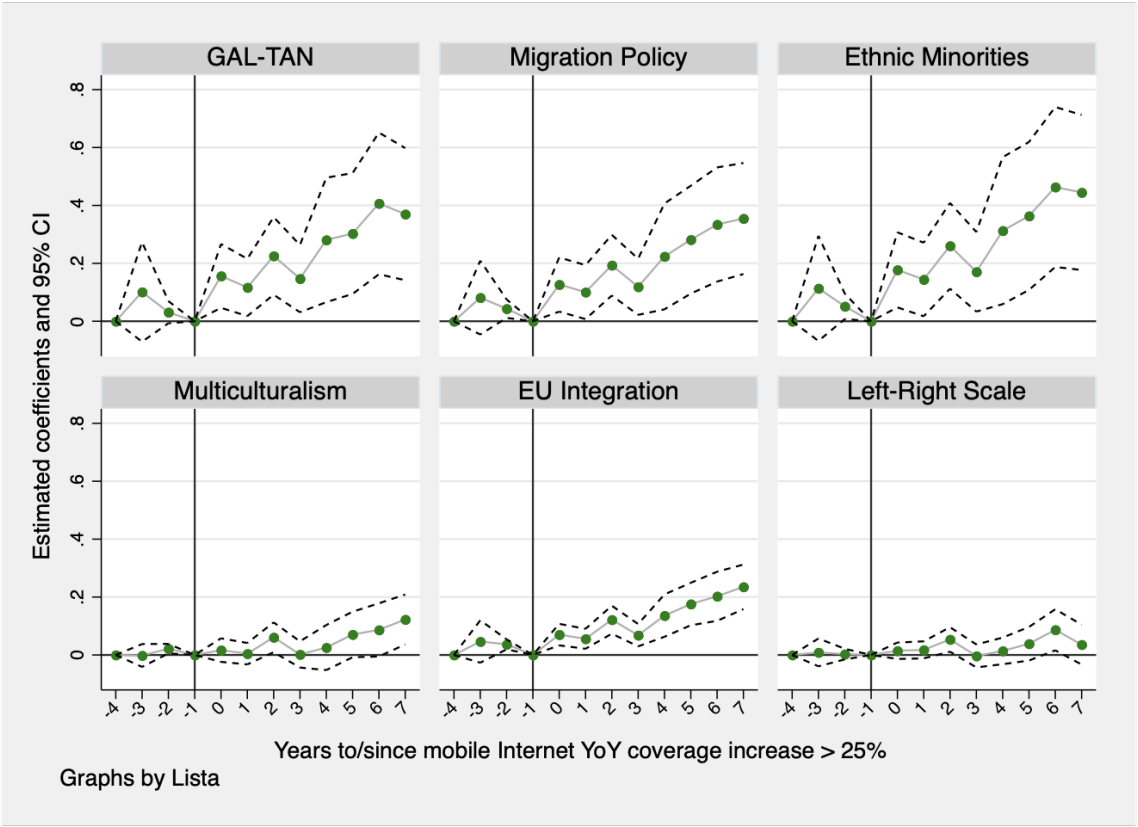
Notes. The Figure reports the vote share of communitarian parties defined as those with a value of GAL-TAN in the top decile of the continent-wide distribution. The data refer to the closest preceding election at two points in time: 2010 and 2017.

Figure 2 Trends in 3G/4G Mobile Internet Coverage across European Municipalities



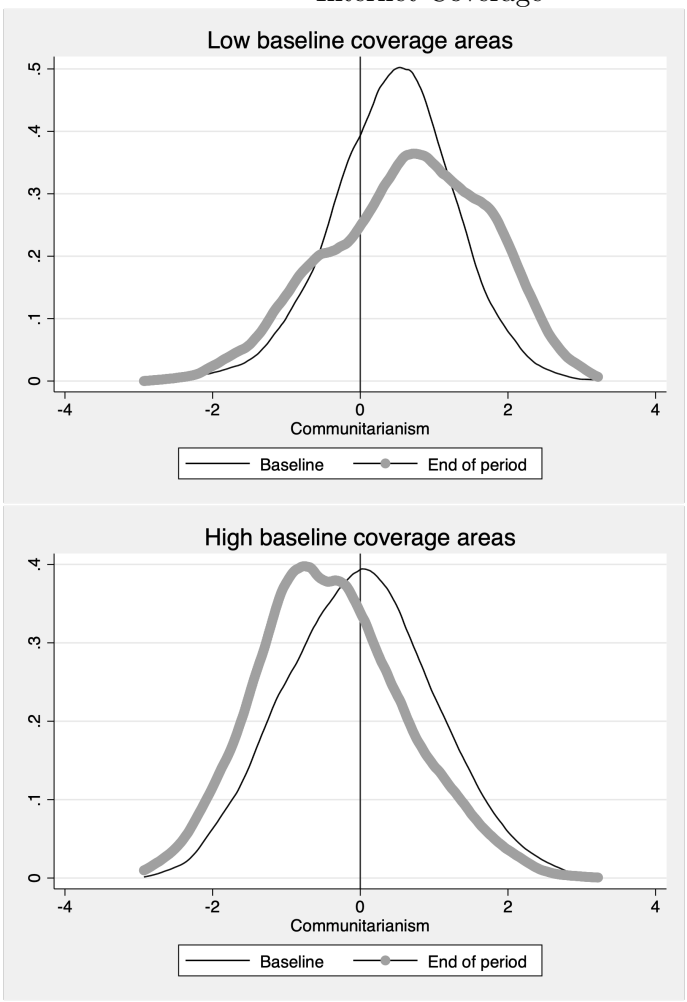
Notes. The Figure reports the area of each municipality covered by 3G or 4G signal in 2007 and 2017.

Figure 3 Event-Study Analysis: Changes in Support for Communitarian Parties in Response to an Increase in Mobile Internet Coverage



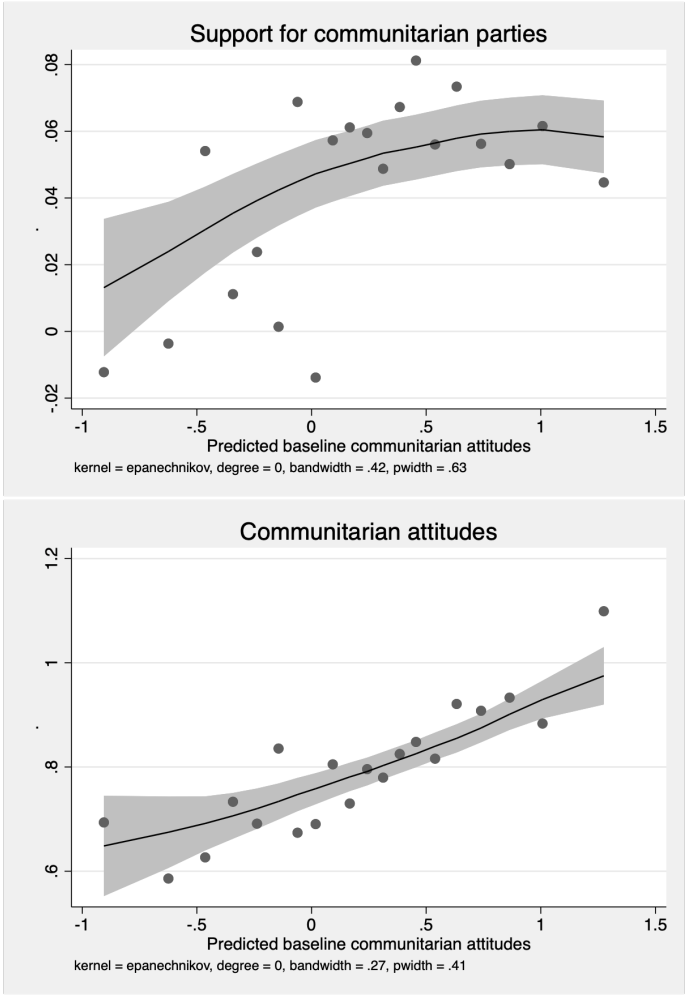
Notes. The Figure reports event-study graphs for the fractions of votes accruing to communitarian parties defined as those with a value of each CHES variable in the top decile of the continent-wide distribution. The event is defined as the first year during the period when a municipality experienced an increase in coverage of at least 25 percentage points over two consecutive years. Estimates at different leads and lags are derived from regressions that include municipality and year fixed effects and are weighted by municipality population. Coefficients at lags -1 and -4 are constrained to zero. 95 percent confidence intervals based on clustering at the NUTS2 level region also reported. See also notes to Table 1.

Figure 4 Trends in Communitarian Attitudes - Overall and by Level of Baseline Mobile Internet Coverage



Notes. The figure reports kernel density estimates of the distribution of communitarian attitudes, as measured by the synthetic index based on the principal component of all dimensions in IVS, at the beginning and end of the period, separately for individuals in IVS residing in areas below (top panel) and above (bottom panel) the first quartile of the distribution of baseline mobile Internet coverage.

Figure 5 The effect of Mobile Internet on Support for Communitarian Parties and Communitarian Attitudes - Heterogeneous Effects by Baseline Level of Communitarianism



Notes. The figure reports OLS estimates of the effects of mobile Internet on vote for communitarian parties (defined based on GAL-TAN, top panel) and communitarian attitudes (measured by the synthetic index based on the principal component of all dimensions in IVS), separately by vingtiles of individuals' baseline predicted levels of communitarianism. The latter is obtained based on a regression of the synthetic index on age, marital status, education, working class status, residence in a big city, foreign born, number of children, religious affiliation, employment status (all interacted with a gender dummy) plus country fixed effects. A smoothed kernel regression, where each observation is weighted by the inverse of the square of the coefficient standard error, is superimposed to the data.

Table 1 Trends in Communitarianism and Universalism across Europe, 2007-2017

	Social Issues (GAL-TAN) (1)	Restrictive Migration Policy (2)	Opposition Ethnic Minorities (3)	Opposition Multi-culturalism (4)	Opposition EU Integration (5)	Left-Right Ideology (6)
			Communitarian Parties (top decile)			
Trend	0.042**	0.068**	0.056**	0.059*	0.091***	0.073***
	(0.018)	(0.024)	(0.025)	(0.032)	(0.024)	(0.024)
Baseline value	0.062	0.043	0.044	0.054	0.034	0.042
			Universalistic Parties (bottom decile)			
Trend	0.015	0.034	0.020	0.020	0.005	0.034
	(0.016)	(0.034)	(0.022)	(0.021)	(0.073)	(0.026)
Baseline value	0.036	0.037	0.032	0.039	0.172	0.059

Notes. The Table reports estimated coefficients from regressions of the municipality-level fraction of votes accruing to parties with specific ideologies/positions as defined in CHES on a linear year trend (divided by 11). All regressions include municipality fixed effects and are weighted by population. Each column refers to a separate dimension defined in CHES, with higher values corresponding to more communitarian ideologies/positions. The top (bottom) panel refers to votes for parties holding positions in the top (bottom) decile of the respective continent-wide distribution. Clustered standard errors at the country level in brackets. ***,**,*: statistically significant at 1%, 5% and 10%, respectively.

Table 2 Mobile Internet and Vote for Communitarian/Universalistic Parties (OLS)

	Social Issues (GAL-TAN) (1)	Restrictive Migration Policy (2)	Opposition Ethnic Minorities (3)	Opposition Multi-culturalism (4)	Opposition EU Integration (5)	Left-Right Ideology (6)
			Communitarian Parties (top decile)			
Mobile Internet	0.044***	0.018***	0.013**	0.001	0.020***	0.031***
	[0.007]	[0.006]	[0.007]	[0.007]	[0.007]	[0.006]
			Universalistic Parties (bottom decile)			
Mobile Internet	-0.021***	-0.035***	-0.016**	-0.017***	-0.015*	-0.003
	[0.007]	[0.009]	[0.006]	[0.005]	[0.009]	[0.006]
Municipality FE	✓	✓	✓	✓	✓	✓
Year FE	✓	✓	✓	✓	✓	✓
Municipality controls × Year FE	✓	✓	✓	✓	✓	✓
Observations	197,966	197,966	197,966	197,966	197,966	197,966

Notes. The Table reports OLS estimates of equation (1). Each column refers to a separate dependent variable, namely the fraction of votes accruing to parties holding communitarian (top panel) and universalistic (bottom panel) positions along dimensions identified in CHES. Regressions include municipality and year fixed effects and the interaction between year fixed effects and the following baseline municipality characteristics: log population, log area, log income per capita, a dummy for urban and the fraction of the population below age 15 and above age 60. All regressions are weighted by municipality size and standard errors are clustered at the level of NUTS2 regions. See also notes to Table 1. ***,**,*: statistically significant at 1%, 5% and 10%, respectively.

Table 3 Mobile Internet and Vote for Communitarian/Universalistic Parties (2SLS)

	Social Issues (GAL-TAN) (1)	Restrictive Migration Policy (2)	Opposition Ethnic Minorities (3)	Opposition Multi-culturalism (4)	Opposition EU Integration (5)	Left-Right Ideology (6)
			Communitarian Parties (top decile)			
Mobile Internet	0.095***	0.096***	0.093***	0.078***	0.097***	0.115***
	[0.017]	[0.029]	[0.030]	[0.030]	[0.019]	[0.023]
			Universalistic Parties (bottom decile)			
Mobile Internet	-0.050*	-0.145***	-0.079***	-0.089***	-0.148***	-0.094***
	[0.026]	[0.038]	[0.023]	[0.020]	[0.037]	[0.018]
Municipality FE	✓	✓	✓	✓	✓	✓
Year FE	✓	✓	✓	✓	✓	✓
Municipality controls × Year FE	✓	✓	✓	✓	✓	✓
F-statistic	114.7	114.7	114.7	114.7	114.7	114.7
Observations	197,966	197,966	197,966	197,966	197,966	197,966

Notes. The Table reports 2SLS estimates of equation (1). See also notes to Tables 2 and A.4. ***,**,*: statistically significant at 1%, 5% and 10%, respectively.

Table 4 Mobile Internet and Vote for Communitarian and Populist Parties (2SLS)

	Social Issues (GAL-TAN) (1)	Restrictive Migration Policy (2)	Opposition Ethnic Minorities (3)	Opposition Multi-culturalism (4)	Opposition EU Integration (5)	Left-Right Ideology (6)
			Communitarian Populist			
Mobile Internet	0.064***	0.044***	0.039***	0.032***	0.049***	0.058***
	[0.013]	[0.011]	[0.011]	[0.010]	[0.015]	[0.012]
			Communitarian Non-Populist			
Mobile Internet	0.032**	0.052*	0.054**	0.046*	0.049**	0.057***
	[0.016]	[0.026]	[0.027]	[0.027]	[0.022]	[0.021]
			Non-Communitarian Populist			
Mobile Internet	0.012	0.031	0.036	0.043	0.026	0.018
	[0.086]	[0.082]	[0.081]	[0.080]	[0.088]	[0.083]

Notes. The Table reports results from 2SLS regressions similar to those in Table 3, where the dependent variable in row 1 is the fraction of votes for parties simultaneously classified as communitarian and populists, as defined by both Rooduijn et al. (2019) and Norris (2020). The dependent variable in row 2 is the fraction of votes for parties classified as communitarian but not populist. The dependent variable in row 3 refers instead to parties classified as populist but not communitarian. See also notes to Table 3. ***,**,*: statistically significant at 1%, 5% and 10%, respectively.

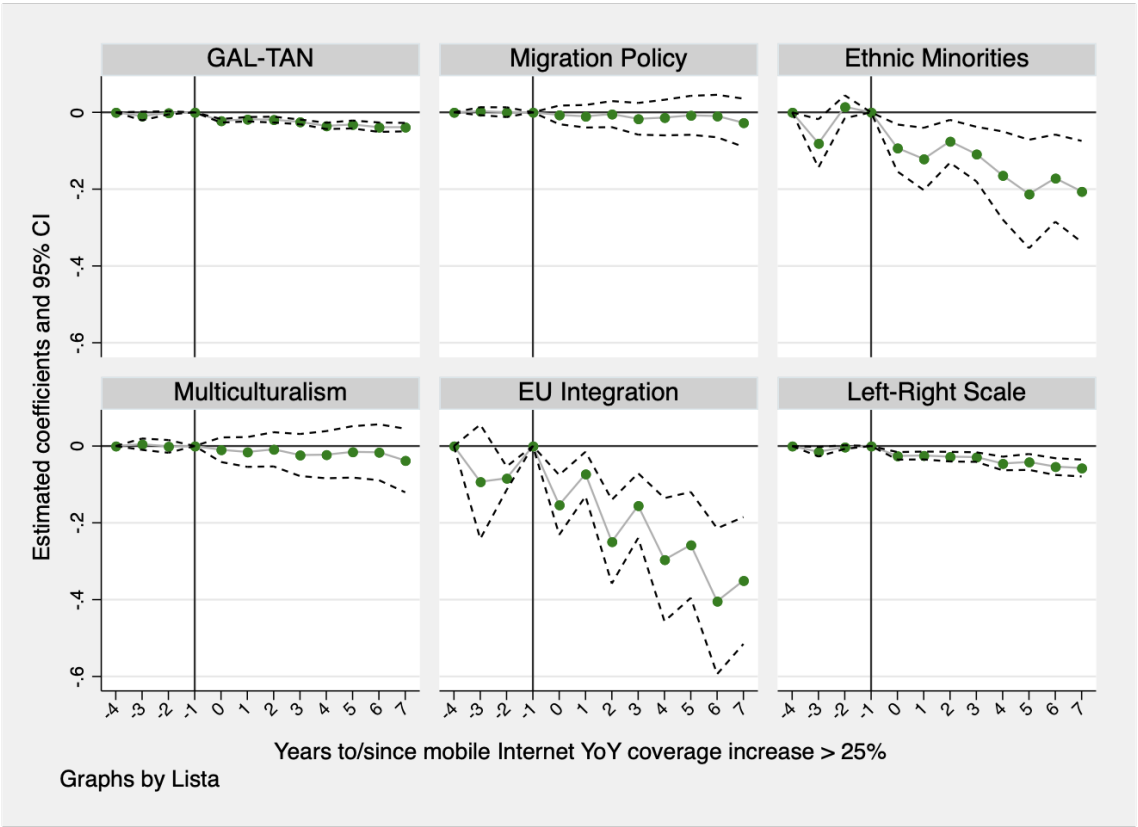
Table 5 Mobile Internet and Individual Attitudes (IVS Data)

	Nationalism	Individual freedoms	Local vs. Global	Opposition to Immigration	Dislike Minority Neighbors	Opposition to EU Enlargement	Left-Right Ideology	Synthetic Index
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Mobile Internet	0.471***	0.417***	0.396***	0.718***	0.963***	0.348***	0.311***	0.958***
	[0.090]	[0.081]	[0.139]	[0.106]	[0.142]	[0.103]	[0.066]	[0.138]
Region FE	✓	✓	✓	✓	✓	✓	✓	✓
Year FE	✓	✓	✓	✓	✓	✓	✓	✓
Regional controls × Year FE	✓	✓	✓	✓	✓	✓	✓	✓
Individual controls	✓	✓	✓	✓	✓	✓	✓	✓
Observations	55,745	57,770	35,689	58,464	56,796	55,656	51,434	22,379

Notes. The Table reports OLS estimates of equation (1) based on individual-level data from the Integrated Value Survey. The dependent variables in each column are voters' attitudes. Regressions include the same controls as in Table 2. Additionally, regressions include the following individual level controls: age, marital status, a dummy for low education, gender, working-class status, and residence in a big city, plus a dummy for whether the data come from the EVS or the WVS. Regressions weighted by IVS sampling weights. See also notes to Table 2. ***,**,*: statistically significant at 1%, 5% and 10%, respectively.

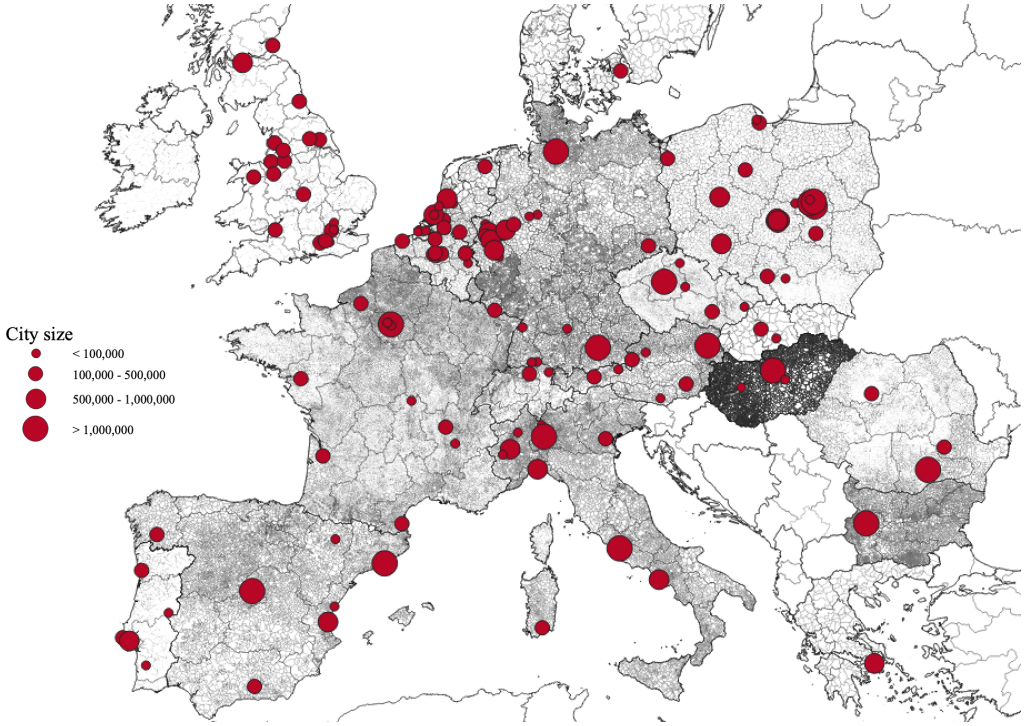
A. Appendix

Figure A.1 Event-Study Analysis: Changes in Support for Universalistic Parties in Response to Increase in Mobile Internet Coverage



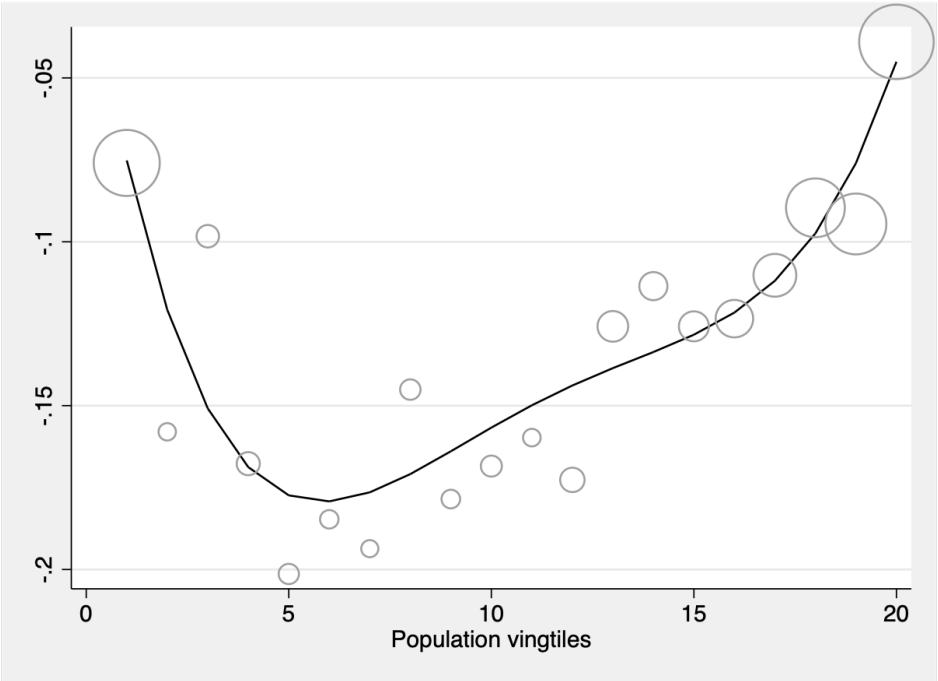
Notes. The Figure reports event-study graphs for the fractions of votes accruing to universalistic parties defined as those with a value of each CHES variable in the bottom decile of the continent-wide distribution. The event is defined as the first year during the period when a municipality experienced an increase in coverage of at least 25 percentage points over two consecutive years. Estimates at different leads and lags are derived from regressions that include municipality and year fixed effects and are weighted by municipality population. Coefficients at lags -1 and -4 are constrained to zero. 95 percent confidence intervals based on clustering at the NUTS2 level region also reported. See also notes to Table 1.

Figure A.2 Distribution of Telecommunication Managers' Birthplaces



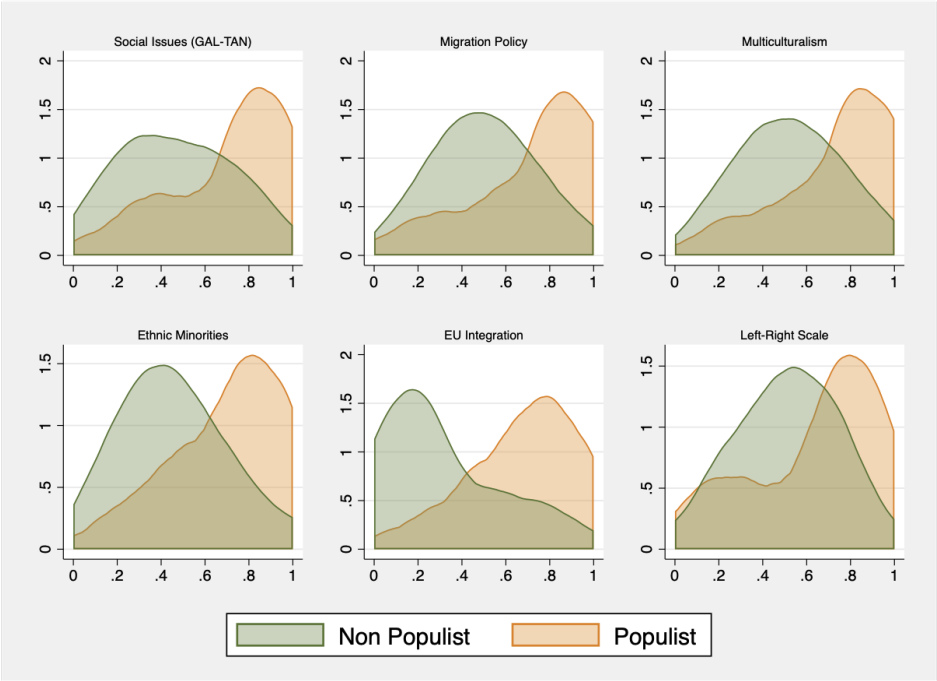
Notes. The Figure reports information on the municipality of birth of Telecommunication managers ever in office in the twenty European countries in our sample between 2007 and 2017. Larger dots refer to larger municipalities.

Figure A.3 Analysis of Compliers



Notes. The Figure reports estimates of the parameter γ in equation (2), separately by municipality population vingtiles. We superimpose to the data a fourth-degree polynomial that we fit based on a minimum distance estimator that reflects the precision of each individual estimate (i.e. we weight by the inverse of the standard error of each estimate). See also notes to Table A.4.

Figure A.4 Distribution of Parties' Policy Positions: Populists vs. Non-Populists



Notes. The Figure reports Epanechnikov kernel (with bandwidth 0.125) density estimates of the distribution of each variable in CHES separately for populist and non-populist parties. Partiers are classified populist if they are defined as such by both Rooduijn et al. (2019) and Norris (2020).

Table A.1 List of Communitarian Parties according to different dimensions in CHES

Country	Party Acronym	Social Issues (GAL-TAN)	Restrictive Migration Policy	Opposition Ethnic Minorities	Opposition Multi-culturalism	Opposition EU Integration	Left-Right Ideology
Austria	FPO	1	1	1	1	1	1
Austria	BZO	1	1	1	1	0	1
Belgium	VB	1	1	1	1	0	1
Belgium	FN	1	1	1	1	0	1
Belgium	PP	0	0	1	0	0	0
Belgium	LDD	0	0	0	0	0	1
Bulgaria	ATAKA	1	1	1	1	1	0
Bulgaria	VMRO-BND	0	1	1	0	0	0
Bulgaria	NFSB	0	1	1	0	0	0
Bulgaria	BBT	0	0	1	0	0	0
Bulgaria	DSB	0	0	0	0	0	1
Czech Republic	SPD	1	1	1	1	1	1
Czech Republic	Nezavisl	0	1	1	1	0	0
Czech Republic	USVIT	0	1	1	1	0	0
Czech Republic	SVOBODNI	0	0	0	0	1	1
Czech Republic	KSCM	0	0	0	0	1	0
Denmark	DF	1	1	1	1	1	0
Denmark	EL	0	0	0	0	1	0
Denmark	JuniB	0	0	0	0	1	0
Denmark	FolkB	0	0	0	0	1	0
Denmark	LA	0	0	0	0	0	1
Finland	PS	1	1	1	1	1	0
Finland	KD	1	0	0	0	0	0
France	FN	1	1	1	1	1	1
France	MPF	1	1	1	1	1	1
France	DLF	0	1	1	1	1	1
France	LR	0	0	1	0	0	0
Germany	AfD	1	1	1	1	1	1
Germany	NPD	1	1	1	1	1	1
Germany	BLAU	1	1	1	1	0	1
Germany	LKR	1	0	0	1	0	0
Greece	XA	1	1	1	1	1	1
Greece	LAOS	1	1	1	1	0	1
Greece	ANEL	1	1	1	1	0	1
Greece	DIKKI	0	1	1	1	1	0
Greece	KKE	0	0	0	0	1	0
Hungary	JOBBIK	1	1	1	1	1	1
Hungary	Fidesz	1	1	0	1	0	1

Table A.1 List of Communitarian Parties according to different dimensions in CHES (continued)

Country	Party Acronym	Social Issues (GAL-TAN)	Restrictive Migration Policy	Opposition Ethnic Minorities	Opposition Multi-culturalism	Opposition EU Integration	Left-Right Ideology
Italy	LN	1	1	1	1	1	1
Italy	FdI	1	1	1	1	1	1
Italy	AN	1	0	0	1	0	0
Italy	SVP	0	1	1	1	0	0
Italy	IdV	0	1	0	1	0	0
Italy	VdA(UV)	0	1	0	1	0	0
Italy	M5S	0	0	0	0	1	0
Italy	RC	0	0	0	0	1	0
Luxembourg	ADR	0	1	1	0	0	0
Netherlands	SGP	1	0	0	1	0	1
Netherlands	PVV	0	1	1	1	1	1
Netherlands	FvD	0	1	1	1	1	1
Netherlands	SP	0	0	0	0	1	0
Poland	LPR	1	0	1	1	1	1
Poland	KNP	1	0	1	1	1	1
Poland	PiS	1	1	0	0	0	1
Poland	Korwin	0	1	0	1	1	1
Poland	Kukiz	0	1	0	0	0	1
Poland	PSL	0	1	0	1	0	0
Poland	S	0	1	0	0	0	0
Poland	SLD	0	0	0	1	0	0
Poland	PO	0	0	0	1	0	0
Poland	PD	0	0	0	1	0	0
Poland	SDPL	0	0	0	1	0	0
Poland	SP	0	0	0	0	0	1
Portugal	CDS-PP	1	0	0	0	0	0
Portugal	CDU	0	0	0	0	1	0
Romania	PRM	1	0	1	0	0	0
Slovakia	Kotleba LSNS	1	1	1	1	1	1
Slovakia	SNS	1	1	1	1	0	1
Slovakia	KDH	1	0	0	0	0	0
Slovakia	Sme Rodina	0	1	1	1	0	0
Sweden	SD	1	1	1	1	1	1
Sweden	V	0	0	0	0	1	0
Sweden	MP	0	0	0	0	1	0
Sweden	JL	0	0	0	0	1	0
United Kingdom	UKIP	1	1	1	1	1	1
United Kingdom	BNP	1	1	1	1	1	1
United Kingdom	DUP	1	0	0	0	0	1

Notes. The Table reports the list of communitarian parties, defined as those in the top decile of the continent-wide distribution of each variable in CHES.

Table A.2 Correlates of Trends in Support for Communitarian/Universalistic Parties

	Social Issues (GAL-TAN) (1)	Restrictive Migration Policy (2)	Opposition Ethnic Minorities (3)	Opposition Multi-culturalism (4)	Opposition EU Integration (5)	Left-Right Ideology (6)
	Communitarian Parties (top decile)					
Log per capita GDP × trend	-0.185	-0.088	-0.015	-0.099	0.009	-0.298***
	(0.114)	(0.067)	(0.074)	(0.089)	(0.071)	(0.093)
% Unemployed × trend	0.052***	0.074***	0.079***	0.081***	0.076***	0.074***
	(0.019)	(0.021)	(0.020)	(0.025)	(0.021)	(0.023)
Urban × trend	-0.000	-0.000	-0.000	-0.001	0.001	-0.000
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Log pop density × trend	-0.097***	-0.116***	-0.105***	-0.147***	-0.085***	-0.074***
	(0.018)	(0.017)	(0.018)	(0.022)	(0.023)	(0.021)
% Population ≥60 × trend	-0.012***	-0.012***	-0.010**	-0.022***	0.012**	-0.007
	(0.004)	(0.004)	(0.005)	(0.006)	(0.005)	(0.004)
% Population ≤15 × trend	-0.001	0.017***	0.018***	0.019***	0.024***	0.011*
	(0.006)	(0.006)	(0.006)	(0.007)	(0.008)	(0.006)
% Employed in Services × trend	0.001	0.001	-0.002	0.004	-0.005*	-0.001
	(0.003)	(0.003)	(0.002)	(0.003)	(0.003)	(0.003)
% Employed in Manufacturing × trend	0.004	0.005*	0.006**	0.007*	0.005*	0.001
	(0.003)	(0.003)	(0.003)	(0.004)	(0.003)	(0.003)
	Universalistic Parties (bottom decile)					
Log per capita GDP × trend	0.106	0.534***	0.324***	0.373***	0.191	0.187**
	(0.083)	(0.106)	(0.077)	(0.048)	(0.158)	(0.074)
% Unemployed × trend	-0.001	0.032**	0.018*	0.018**	0.080*	0.010
	(0.012)	(0.015)	(0.010)	(0.008)	(0.046)	(0.016)
Urban × trend	0.000	0.000	0.000	0.000	-0.003**	-0.001
	(0.001)	(0.001)	(0.001)	(0.000)	(0.001)	(0.001)
Log pop density × trend	0.006	0.066**	0.026	0.017	-0.179***	0.071***
	(0.013)	(0.030)	(0.021)	(0.017)	(0.046)	(0.020)
% Population ≥60 × trend	-0.021***	-0.011***	-0.013***	-0.012***	-0.062***	-0.001
	(0.004)	(0.004)	(0.003)	(0.003)	(0.014)	(0.006)
% Population ≤15 × trend	-0.013*	-0.013***	-0.008**	-0.000	0.004	-0.008
	(0.007)	(0.005)	(0.004)	(0.004)	(0.015)	(0.006)
% Employed in Services × trend	0.002	-0.006**	-0.001	-0.002	0.023***	-0.004*
	(0.002)	(0.003)	(0.002)	(0.002)	(0.005)	(0.002)
% Employed in Manufacturing × trend	0.006**	0.005*	0.005**	0.003	-0.002	-0.004*
	(0.003)	(0.003)	(0.002)	(0.002)	(0.006)	(0.002)
Municipality FE	✓	✓	✓	✓	✓	✓
Year FE	✓	✓	✓	✓	✓	✓
Observations	219,348	219,348	219,348	219,348	219,348	219,348

Notes. The Table reports coefficients from a regression of the municipality-level share of votes accruing to parties holding universalistic/communitarian positions on baseline municipality controls interacted with a linear year trend. All regressions include year and municipality fixed effects and are weighted by municipality population. Clustered standard errors at the NUTS2 region level in brackets. See also notes to Table 1. ***,**,*: statistically significant at 1%, 5% and 10%, respectively.

Table A.3 Correlates of Trends in Mobile Internet Coverage

	Coverage (1)
Log per capita GDP × trend	-3.093***
	(0.256)
% Unemployed × trend	0.041
	(0.059)
Urban × trend	-0.001
	(0.003)
Log pop density × trend	-1.063***
	(0.122)
% Population ≥60 × trend	0.102***
	(0.021)
% Population ≤15 × trend	-0.066***
	(0.023)
% Employed in Services × trend	0.010
	(0.012)
% Employed in Manufacturing × trend	0.018
	(0.013)
Municipality FE	✓
Year FE	✓
Observations	700,150

Notes. The Table reports coefficients from a regression of the municipality-level mobile Internet coverage on baseline municipality controls interacted with a linear year trend. All regressions include year and municipality fixed effects and are weighted by municipality population. Clustered standard errors at the NUTS2 region level in brackets. See also notes to Table 1. ***,**,*: statistically significant at 1%, 5% and 10%, respectively.

Table A.4 First Stage Estimates

	(1)	(2)	(3)
Log distance $\times$ $\Delta ln\, Cov_{ct}$	-0.068***	-0.055***	-0.028***
	[0.008]	[0.007]	[0.003]
F-test	114.7	59.98	47.12
Municipality FE	✓	✓	✓
Baseline controls $\times$ Year FE	✓	✓	
Additional controls $\times$ Year FE		✓	
Baseline controls $\times$ Country FE $\times$ Year FE			✓
Observations	197,966	197,966	197,966

Notes. The Table reports first stage estimates of equation (1). Column (1) includes log distance to closest TLC manager's birthplace, municipality and country and year fixed effects plus the interaction between year fixed effects and the following municipality baseline controls: log population, log area, log income per capita, a dummy for urban and the fraction of the population below age 15 and above age 60. Column (2) additionally controls for the interaction of year fixed effects with the following controls: fraction of employment by one digit industry and unemployment to working age population ratio. Dummies for missing values of controls also included. Column (3) includes country X year fixed effects plus the three way interactions between country and year fixed effects and the same baseline municipality controls as in column (1). Conditional Sanderson and Windmeijer (2016) F-statistics are reported at the bottom of the Table. See also notes to Table 2. ***,**,*: statistically significant at 1%, 5% and 10%, respectively.

Table A.5 Mobile Internet and Vote for Communitarian/Universalistic Parties (2SLS) - Controlling for Distance to Large Cities

	Social Issues (GAL-TAN) (1)	Restrictive Migration Policy (2)	Opposition Ethnic Minorities (3)	Opposition Multi-culturalism (4)	Opposition EU Integration (5)	Left-Right Ideology (6)
			Communitarian Parties (top decile)			
Mobile Internet	0.094***	0.099***	0.094***	0.082***	0.102***	0.121***
	[0.017]	[0.027]	[0.029]	[0.028]	[0.018]	[0.020]
			Universalistic Parties (bottom decile)			
Mobile Internet	-0.046*	-0.140***	-0.074***	-0.085***	-0.148***	-0.091***
	[0.024]	[0.037]	[0.023]	[0.020]	[0.033]	[0.017]
Observations	197,966	197,966	197,966	197,966	197,966	197,966

Notes. The Table reports regressions results similar to those in Table 3, where we additionally control for log distances from the largest municipality in the country, NUTS2 region and NUTS3 province, all interacted with year dummies. See also notes to Table 3. ***,**,*: statistically significant at 1%, 5% and 10%, respectively.

Table A.6 Mobile Internet and Vote for Communitarian/Universalistic Parties (2SLS) - Excluding Large Birthplaces

	Social Issues (GAL-TAN) (1)	Restrictive Migration Policy (2)	Opposition Ethnic Minorities (3)	Opposition Multi-culturalism (4)	Opposition EU Integration (5)	Left-Right Ideology (6)
			Communitarian Parties (top decile)			
			Exclude top 5 municipalities			
Mobile Internet	0.095***	0.228***	0.255***	0.214***	0.176***	0.192***
	[0.019]	[0.038]	[0.036]	[0.039]	[0.025]	[0.029]
			Exclude top 10 municipalities			
Mobile Internet	0.063***	0.221***	0.245***	0.207***	0.190***	0.167***
	[0.019]	[0.045]	[0.044]	[0.046]	[0.029]	[0.031]
			Exclude top 15 municipalities			
Mobile Internet	0.041**	0.177***	0.205***	0.164***	0.150***	0.124***
	[0.018]	[0.044]	[0.043]	[0.046]	[0.024]	[0.028]
			Universalistic Parties (bottom decile)			
			Exclude top 5 municipalities			
Mobile Internet	-0.003	-0.026	-0.034	-0.027	-0.307***	-0.034
	[0.015]	[0.027]	[0.027]	[0.026]	[0.043]	[0.027]
			Exclude top 10 municipalities			
Mobile Internet	0.025	-0.002	-0.013	-0.013	-0.407***	-0.032
	[0.019]	[0.029]	[0.029]	[0.029]	[0.065]	[0.029]
			Exclude top 15 municipalities			
Mobile Internet	0.025	-0.005	-0.016	-0.015	-0.406***	-0.015
	[0.019]	[0.029]	[0.028]	[0.029]	[0.067]	[0.025]

Notes. The Table reports results from specifications similar to those in Table 3, where we exclude municipalities gravitating around managers' birthplaces that are in the top 5, 10 or top 15 of the country's municipality population distribution. See also notes to Tables 3. ***,**,*: statistically significant at 1%, 5% and 10%, respectively.

Table A.7 Mobile Internet and Vote for Communitarian/Universalistic Parties (2SLS) - Alternative clustering

	Social Issues (GAL-TAN) (1)	Restrictive Migration Policy (2)	Opposition Ethnic Minorities (3)	Opposition Multi-culturalism (4)	Opposition EU Integration (5)	Left-Right Ideology (6)
			Communitarian Parties (top decile)			
Mobile Internet	0.095	0.096	0.093	0.078	0.098	0.115
NUTS2 region	[0.017]***	[0.029]***	[0.030]***	[0.030]**	[0.019]***	[0.023]***
Country	[0.030]***	[0.045]**	[0.052]*	[0.052]	[0.036]**	[0.031]***
Conley 50 km	[0.027]***	[0.031]***	[0.030]***	[0.032]**	[0.033]***	[0.032]***
Conley 100 km	[0.044]**	[0.047]**	[0.045]**	[0.049]	[0.050]*	[0.050]***
			Universalistic Parties (bottom decile)			
Mobile Internet	-0.050	-0.145	-0.079	-0.089	-0.148	-0.094
NUTS2 region	[0.026]*	[0.038]***	[0.023]***	[0.020]***	[0.037]***	[0.018]***
Country	[0.047]	[0.094]	[0.058]	[0.051]	[0.049]***	[0.041]**
Conley 50 km	[0.029]*	[0.026]***	[0.022]***	[0.022]***	[0.052]***	[0.024]***
Conley 100 km	[0.034]	[0.037]***	[0.031]**	[0.032]***	[0.079]*	[0.036]**

Notes. The Table reports 2SLS estimates of equation (1) as in Table 3. The first set of standard errors are clustered at the NUTS2 region level, the second set at the country level, the remaining sets are Conley standard errors that allow for spatial correlation among neighboring municipalities in the range of 50 and 100 km respectively, smoothed via a Bartlett kernel. See also notes to Table 3. ***,**,*: statistically significant at 1%, 5% and 10%, respectively.

Table A.8 Mobile Internet and Vote for Moderate Communitarian/Universalistic Parties (2SLS)

	Social Issues (GAL-TAN) (1)	Restrictive Migration Policy (2)	Opposition Ethnic Minorities (3)	Opposition Multi-culturalism (4)	Opposition EU Integration (5)	Left-Right Ideology (6)
			Moderate Communitarian Parties (top quartile)			
Mobile Internet	0.176***	0.108*	0.081***	0.207***	-0.008	0.090*
	[0.037]	[0.056]	[0.028]	[0.041]	[0.033]	[0.046]]
			Moderate Universalistic Parties (bottom quartile)			
Mobile Internet	-0.123***	-0.231***	-0.156***	-0.190***	-0.268***	-0.151***
	[0.026]	[0.043]	[0.048]	[0.034]	[0.046]	[0.027]
Municipality FE	✓	✓	✓	✓	✓	✓
Year FE	✓	✓	✓	✓	✓	✓
Municipality controls × Year FE	✓	✓	✓	✓	✓	✓
F-statistic	114.7	114.7	114.7	114.7	114.7	114.7
Observations	197,966	197,966	197,966	197,966	197,966	197,966

Notes. The Table reports similar regressions to those in Table 3 where communitarian (universalistic) parties are defined as those in the top (bottom) quartile (as opposed to decile) of the distribution of the relevant CHES variables. See also notes to Table 3. ***,**,*: statistically significant at 1%, 5% and 10%, respectively.

Table A.9 Mobile Internet and Vote for Communitarian/Universalistic Parties (2SLS) - Alternative Definitions of Outcome Variables

	Social Issues (GAL-TAN) (1)	Restrictive Migration Policy (2)	Opposition Ethnic Minorities (3)	Opposition Multi-culturalism (4)	Opposition EU Integration (5)	Left-Right Ideology (6)
	Communitarian Parties (within-country top decile)					
Mobile Internet	0.151***	0.063**	0.038	0.094***	0.030	0.217***
	[0.026]	[0.031]	[0.035]	[0.031]	[0.038]	[0.034]
	Universalistic Parties (within-country bottom decile)					
Mobile Internet	0.016	-0.174***	-0.062*	-0.193***	-0.238***	-0.054***
	[0.025]	[0.030]	[0.034]	[0.035]	[0.039]	[0.020]
Municipality FE	✓	✓	✓	✓	✓	✓
Year FE	✓	✓	✓	✓	✓	✓
Municipality controls × Year FE	✓	✓	✓	✓	✓	✓
F-statistic	114.7	114.7	114.7	114.7	114.7	114.7
Observations	197,966	197,966	197,966	197,966	197,966	197,966

Notes. The Table reports similar regressions to those in Table 3 where, for each dependent variable in CHES, communitarian and universalistic parties are defined as those in the top and bottom deciles, respectively, of the country- (as opposed to continent-) specific distribution. See also notes to Table 3. ***,**,*: statistically significant at 1%, 5% and 10%, respectively.

Table A.10 Mobile Internet and Vote for Communitarian/Universalistic Parties (2SLS) - Average

	Social Issues (GAL-TAN) (1)	Restrictive Migration Policy (2)	Opposition Ethnic Minorities (3)	Opposition Multi-culturalism (4)	Opposition EU Integration (5)	Left-Right Ideology (6)
			Average			
Mobile Internet	0.086*** [0.016]	0.074*** [0.013]	0.042*** [0.013]	0.095*** [0.014]	0.048* [0.026]	0.043*** [0.014]
Municipality FE	✓	✓	✓	✓	✓	✓
Year FE	✓	✓	✓	✓	✓	✓
Municipality controls × Year FE	✓	✓	✓	✓	✓	✓
F-statistic	114.7	114.7	114.7	114.7	114.7	114.7
Observations	197,966	197,966	197,966	197,966	197,966	197,966

Notes. The Table reports similar regressions to those in Table 3 where the dependent variable is a weighted average of parties' positions in CHES, where the weights are the fractions of the municipality votes accruing to each party. See also notes to Table 3. ***,**,*: statistically significant at 1%, 5% and 10%, respectively.

Table A.11 Mobile Internet and Vote for Communitarian/Universalistic Parties (2SLS) - Additional Specifications

	Social Issues (GAL-TAN) (1)	Restrictive Migration Policy (2)	Opposition Ethnic Minorities (3)	Opposition Multi-culturalism (4)	Opposition EU Integration (5)	Left-Right Ideology (6)
			Communitarian Parties (top decile)			
			Panel A: All controls × year			
Mobile Internet	0.073***	0.044	0.036	0.031	0.073***	0.088***
	[0.024]	[0.035]	[0.037]	[0.034]	[0.026]	[0.027]
			Panel B: Baseline controls × country × year			
Mobile Internet	0.055***	0.057***	0.058***	0.051***	0.026*	0.028**
	[0.015]	[0.018]	[0.018]	[0.018]	[0.013]	[0.014]
			Universalistic Parties (bottom decile)			
			Panel A: All controls × year			
Mobile Internet	-0.057**	-0.137***	-0.048*	-0.071***	-0.063	-0.075***
	[0.025]	[0.038]	[0.025]	[0.023]	[0.047]	[0.019]
			Panel B: Baseline controls × country × year			
Mobile Internet	-0.048***	-0.003	-0.001	-0.003	-0.030*	0.007
	[0.011]	[0.006]	[0.004]	[0.005]	[0.017]	[0.007]
Observations	197,966	197,966	197,966	197,966	197,966	197,966

Notes. The Table reports results from 2SLS regressions similar to those in Table 3. Panel A additionally controls for the interaction of year fixed effects with the following controls: fraction of employment by one digit industry and unemployment to working age population ratio. Dummies for missing values of controls also included. Panel B includes country X year fixed effects plus the three way interactions between country and year fixed effects and baseline municipality controls as in Table 3. See also notes to Tables 3 and A.4. ***,**,*: statistically significant at 1%, 5% and 10%, respectively.

Table A.12 Mobile Internet and Vote for Communitarian Parties (2SLS) - Heterogeneous Effects by Municipality Characteristics

	Social Issues (GAL-TAN) (1)	Restrictive Migration Policy (2)	Opposition Ethnic Minorities (3)	Opposition Multi-culturalism (4)	Opposition EU Integration (5)	Left-Right Ideology (6)
			Communitarian Parties (top decile)			
			Panel A: Trait = Unemployment			
Mobile Internet	0.066***	0.119***	0.125***	0.118***	0.118***	0.110***
	[0.015]	[0.024]	[0.023]	[0.024]	[0.017]	[0.021]
Trait × Mobile Internet	1.589***	2.163***	2.262***	2.169***	2.032***	2.268***
	[0.441]	[0.752]	[0.725]	[0.752]	[0.699]	[0.758]
			Panel B: Trait = GDP per capita Growth (NUTS2)			
Mobile Internet	0.103***	0.111***	0.102***	0.088***	0.112***	0.122***
	[0.018]	[0.026]	[0.029]	[0.028]	[0.018]	[0.021]
Trait × Mobile Internet	-0.276**	-0.310***	-0.222**	-0.147*	-0.148	-0.094
	[0.111]	[0.086]	[0.102]	[0.079]	[0.108]	[0.066]
			Panel C: Trait = Share population with high education			
Mobile Internet	0.059**	0.049	0.073**	0.049	0.002	0.073**
	[0.026]	[0.032]	[0.031]	[0.032]	[0.020]	[0.029]
Trait × Mobile Internet	-0.591***	-0.557***	-0.726***	-0.557***	-0.231*	-0.827***
	[0.173]	[0.203]	[0.219]	[0.204]	[0.138]	[0.248]
			Panel D: Trait = Share population above 60 years old			
Mobile Internet	0.110***	0.127***	0.128***	0.106***	0.121***	0.134***
	[0.017]	[0.030]	[0.030]	[0.032]	[0.021]	[0.024]
Trait × Mobile Internet	-0.503***	-0.523**	-0.322	-0.372	-0.181	-0.457*
	[0.176]	[0.255]	[0.246]	[0.252]	[0.211]	[0.238]
			Panel E: Trait = Urban			
Mobile Internet	0.091***	0.100***	0.098***	0.088**	0.105***	0.115***
	[0.022]	[0.034]	[0.036]	[0.034]	[0.023]	[0.029]
Trait × Mobile Internet	0.026	0.030	0.045	0.033	0.043	0.024
	[0.030]	[0.044]	[0.046]	[0.044]	[0.032]	[0.040]

Notes. The Table reports similar specifications to those in the top panel of Table 3 where coverage is interacted in turn with different baseline municipality characteristics. Panel A refers to the unemployment to population ratio, Panel B to the regional growth in income per capita, Panel C to the fraction of the population with college education, Panel D to the fraction of the population aged 60 years old or above, Panel E to urban municipalities. See also notes to Table 3. ***,**,*: statistically significant at 1%, 5% and 10%, respectively.

Table A.13 Mobile Internet and Vote for Universalistic Parties (2SLS) - Heterogeneous Effects by Municipality Characteristics

	Social Issues (GAL-TAN) (1)	Restrictive Migration Policy (2)	Opposition Ethnic Minorities (3)	Opposition Multi-culturalism (4)	Opposition EU Integration (5)	Left-Right Ideology (6)
			Universalistic Parties (bottom decile)			
			Panel A: Trait = Unemployment			
Mobile Internet	-0.013	-0.123***	-0.074***	-0.077***	-0.154***	-0.085***
	[0.023]	[0.039]	[0.022]	[0.020]	[0.039]	[0.019]
Trait × Mobile Internet	0.038	0.869*	0.581**	0.498**	-0.170	0.044
	[0.283]	[0.456]	[0.255]	[0.252]	[0.470]	[0.303]
			Panel B: Trait = GDP per capita Growth (NUTS2)			
Mobile Internet	-0.071**	-0.169***	-0.090***	-0.098***	-0.123***	-0.089***
	[0.029]	[0.042]	[0.025]	[0.023]	[0.041]	[0.020]
Trait × Mobile Internet	0.399***	0.276***	0.137*	0.102	-0.278***	-0.234***
	[0.071]	[0.086]	[0.079]	[0.069]	[0.107]	[0.077]
			Panel C: Trait = Share population with high education			
Mobile Internet	-0.043***	-0.012	-0.007	-0.013	-0.001	-0.008
	[0.010]	[0.012]	[0.010]	[0.013]	[0.015]	[0.010]
Trait × Mobile Internet	0.312***	0.021	0.035	-0.018	-0.265**	0.051
	[0.115]	[0.134]	[0.106]	[0.150]	[0.133]	[0.113]
			Panel D: Trait = Share population above 60 years old			
Mobile Internet	-0.032	-0.109***	-0.065***	-0.074***	-0.141***	-0.080***
	[0.026]	[0.037]	[0.022]	[0.020]	[0.039]	[0.019]
Trait × Mobile Internet	-0.432**	-0.620**	-0.287	-0.219	0.407	-0.490***
	[0.204]	[0.264]	[0.208]	[0.191]	[0.439]	[0.165]
			Panel E: Trait = Urban			
Mobile Internet	-0.051	-0.133***	-0.065***	-0.078***	-0.135***	-0.083***
	[0.035]	[0.041]	[0.023]	[0.021]	[0.051]	[0.019]
Trait × Mobile Internet	-0.026	0.035	0.032	0.019	0.059	0.032
	[0.051]	[0.048]	[0.026]	[0.026]	[0.074]	[0.022]

Notes. The Table reports similar specifications to those in the bottom Panel of Table 3 where coverage is interacted in turn with different baseline municipality characteristics. Panel A refers to the unemployment to population ratio, Panel B to the regional growth in income per capita, Panel C to the fraction of the population with college education, Panel D to the fraction of the population aged 60 years old or above, Panel E to urban municipalities. See also notes to Table 3. ***,**,*: statistically significant at 1%, 5% and 10%, respectively.

Table A.14 Individual Support for Communitarianism/Universalism and Attitudes (IVS Data)

	Nationalism	Individual freedoms	Local vs. Global	Opposition to Immigration	Dislike Minority Neighbors	Opposition to EU Enlargement	Synthetic Index
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Social issues (GAL-TAN)							
Communitarian voters	0.439***	0.358***	0.059*	0.752***	0.589***	0.527***	0.873***
	[0.024]	[0.022]	[0.034]	[0.024]	[0.025]	[0.025]	[0.039]
Universalist voters	-0.686***	-0.691***	-0.357***	-0.689***	-0.317***	-0.406***	-0.991***
	[0.028]	[0.024]	[0.036]	[0.027]	[0.027]	[0.028]	[0.041]
Migration Policy							
Communitarian voters	0.376***	0.154***	0.061*	0.734***	0.528***	0.501***	0.783***
	[0.022]	[0.020]	[0.032]	[0.021]	[0.022]	[0.022]	[0.035]
Universalist voters	-0.826***	-0.582***	-0.427***	-0.845***	-0.355***	-0.357***	-1.054***
	[0.027]	[0.023]	[0.036]	[0.026]	[0.026]	[0.027]	[0.039]
Multiculturalism							
Communitarian voters	0.388***	0.159***	0.068**	0.716***	0.517***	0.504***	0.761***
	[0.022]	[0.020]	[0.033]	[0.022]	[0.022]	[0.022]	[0.036]
Universalist voters	-0.796***	-0.533***	-0.403***	-0.818***	-0.353***	-0.370***	-0.971***
	[0.026]	[0.023]	[0.034]	[0.025]	[0.025]	[0.026]	[0.037]
Ethnic Minorities							
Communitarian voters	0.391***	0.154***	0.095***	0.799***	0.566***	0.533***	0.870***
	[0.025]	[0.023]	[0.036]	[0.024]	[0.025]	[0.025]	[0.041]
Universalist voters	-0.855***	-0.447***	-0.274***	-0.665***	-0.239***	-0.275***	-0.907***
	[0.034]	[0.031]	[0.043]	[0.033]	[0.033]	[0.034]	[0.051]
EU Integration							
Communitarian voters	0.324***	0.083***	0.082**	0.708***	0.494***	0.528***	0.667***
	[0.025]	[0.022]	[0.035]	[0.024]	[0.024]	[0.024]	[0.040]
Universalist voters	-0.070***	-0.185***	-0.041	-0.150***	-0.077***	-0.146***	-0.173***
	[0.023]	[0.019]	[0.029]	[0.022]	[0.022]	[0.023]	[0.033]
Region FE	✓	✓	✓	✓	✓	✓	✓
Year FE	✓	✓	✓	✓	✓	✓	✓
Individual Controls	✓	✓	✓	✓	✓	✓	✓
Observations	33,292	35,522	20,343	34,405	33,380	33,378	14,746

Notes. The Table reports regressions of individual attitudes in the Integrated Value Surveys on two indicator variables equal to one if the individual's reported closest party is labelled as communitarian or universalist according to the definitions in CHES. Regressions include region and year effects and are weighted by sampling weights. Clustered standard errors at the NUTS2 region level in brackets. ***,**,*: statistically significant at 1%, 5% and 10%, respectively.

Table A.15 Mobile Internet and Individual Voting Intentions (IVS Data)

	Social Issues (GAL-TAN) (1)	Restrictive Migration Policy (2)	Opposition Ethnic Minorities (3)	Opposition Multi-culturalism (4)	Opposition EU Integration (5)	Left-Right Ideology (6)
			Panel A: Communitarian Parties (top decile)			
Mobile Internet	0.051*	0.053**	-0.038*	-0.063**	-0.053***	0.077***
	[0.029]	[0.024]	[0.023]	[0.025]	[0.019]	[0.022]
			Panel B: Moderate Communitarian Parties (top quartile)			
Mobile Internet	0.106**	0.079*	0.123**	0.090**	0.095**	0.146***
	[0.044]	[0.040]	[0.050]	[0.042]	[0.037]	[0.045]
			Panel A: Universalistic Parties (bottom decile)			
Mobile Internet	0.036*	0.006	0.002	0.003	-0.029	0.011
	[0.021]	[0.015]	[0.010]	[0.015]	[0.019]	[0.017]
			Panel B: Moderate Universalistic Parties (bottom quartile)			
Mobile Internet	-0.007	0.032	-0.010	0.032	-0.178***	-0.007
	[0.036]	[0.027]	[0.027]	[0.032]	[0.038]	[0.032]
Region FE	✓	✓	✓	✓	✓	✓
Year FE	✓	✓	✓	✓	✓	✓
Regional controls × Year FE	✓	✓	✓	✓	✓	✓
Individual controls	✓	✓	✓	✓	✓	✓
Observations	39,247	39,247	39,247	39,247	39,247	39,247

Notes. The Table reports OLS estimates of equation (1) where the dependent variable is a dummy for whether an individual in the Integrated Value Surveys reports the intention to vote for a communitarian or universalistic party. Panel A refers to communitarian/universalistic parties (in the top and bottom deciles of the continent-wide distributions) while Panel B refers to moderate communitarian/universalistic parties (in the top and bottom quartiles of the continent-wide distributions). All regressions are weighted by sampling weights and include region fixed effects, year fixed effects, regional controls (log population, log area, log income per capita, a dummy for urban and the fraction of the population below age 15 and above age 60) X year fixed effects, and individual level characteristics (age, marital status, a dummy for low education, gender, working-class, residence in a big city and a dummy for whether the data come from the EVS or the WVS). Clustered standard errors at the NUTS2 region level in brackets. ***,**,*: statistically significant at 1%, 5% and 10%, respectively.

Table A.16 Mobile Internet and Individual Attitudes (IVS Data) - Heterogeneous Effects by Socioeconomic Characteristics

	Nationalism	Individual freedoms	Local vs. Global	Opposition to Immigration	Dislike Minority Neighbors	Opposition to EU Enlargement	Left-Right Ideology	Synthetic Index
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
				Panel A: Trait = High Educated				
Mobile Internet	0.310***	0.303***	0.309**	0.578***	0.896***	0.262**	0.089	0.991***
	[0.101]	[0.098]	[0.129]	[0.118]	[0.131]	[0.110]	[0.085]	[0.136]
Trait × Mobile Internet	-0.113***	-0.131***	-0.171***	-0.162***	-0.047	-0.079*	0.212***	-0.262***
	[0.041]	[0.037]	[0.047]	[0.047]	[0.044]	[0.044]	[0.061]	[0.059]
				Panel B: Trait = working-class				
Mobile Internet	0.397***	0.308***	0.383***	0.608***	0.919***	0.305***	0.220***	0.830***
	[0.089]	[0.084]	[0.133]	[0.105]	[0.145]	[0.107]	[0.071]	[0.147]
Trait × Mobile Internet	0.118***	0.191***	0.103**	0.124***	0.070**	0.046	0.163***	0.235***
	[0.037]	[0.036]	[0.041]	[0.034]	[0.032]	[0.036]	[0.052]	[0.047]
				Panel C: Trait = Female				
Mobile Internet	0.506***	0.471***	0.391***	0.725***	0.945***	0.402***	0.380***	1.005***
	[0.092]	[0.088]	[0.138]	[0.105]	[0.143]	[0.106]	[0.065]	[0.139]
Trait × Mobile Internet	-0.064**	-0.101***	0.008	-0.014	0.033	-0.104***	-0.136***	-0.090**
	[0.027]	[0.031]	[0.028]	[0.032]	[0.036]	[0.032]	[0.036]	[0.044]
				Panel D: Trait = Big city				
Mobile Internet	0.510***	0.410***	0.483***	0.793***	1.007***	0.399***	0.367***	1.021***
	[0.095]	[0.079]	[0.137]	[0.109]	[0.150]	[0.103]	[0.067]	[0.142]
Trait × Mobile Internet	-0.135*	0.119	-0.030	-0.183***	-0.140	-0.082	-0.231***	-0.101
	[0.069]	[0.081]	[0.075]	[0.067]	[0.087]	[0.061]	[0.055]	[0.083]
				Panel E: Trait = Age Over 60				
Mobile Internet	0.310***	0.507***	0.412***	0.653***	0.852***	0.231**	0.179**0.962***	
	[0.103]	[0.093]	[0.135]	[0.106]	[0.137]	[0.113]	[0.071]	[0.139]
Trait × Mobile Internet	0.004***	-0.003***	0.002	0.003**	0.003***	0.004***	0.004**	-0.018
	[0.001]	[0.001]	[0.001]	[0.001]	[0.001]	[0.001]	[0.001]	[0.046]
				Panel F: Trait = Married				
Mobile Internet	0.442***	0.412***	0.346**	0.717***	0.925***	0.311***	0.253***	0.926***
	[0.093]	[0.086]	[0.140]	[0.108]	[0.143]	[0.103]	[0.069]	[0.138]
Trait × Mobile Internet	0.051	0.009	0.086***	0.001	0.066**	0.065**	0.099***	0.054
	[0.031]	[0.032]	[0.029]	[0.029]	[0.032]	[0.030]	[0.032]	[0.039]

Notes. The Table reports similar specifications to those in Table 5 where coverage is interacted in turn with dummies for different individual characteristics. Panel A refers to college education, Panel B to working-class status, Panel C to female, Panel D to residence in a big city, Panel E to age 60 years old or above, Panel F to married. See also notes to Table 5. ***,**,*: statistically significant at 1%, 5% and 10%, respectively.

Table A.17 Mobile Internet, Vote for Communitarian/Universalistic Parties as a Fraction of Eligible Voters, and Voter Turnout (2SLS)

	Party Positions						Voter Turnout
	Social Issues (GAL-TAN)	Restrictive Migration Policy	Opposition Ethnic Minorities	Opposition Multi-culturalism	Opposition EU Integration	Left-Right Ideology	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
	Communitarian Parties (top decile)						
Mobile Internet	0.103***	0.111***	0.105***	0.093***	0.084***	0.114***	
	[0.016]	[0.024]	[0.024]	[0.025]	[0.016]	[0.021]	
	Universalistic Parties (bottom decile)						
Mobile Interne	-0.043*	-0.148***	-0.089***	-0.090***	-0.120***	-0.087***	
	[0.025]	[0.035]	[0.021]	[0.019]	[0.038]	[0.013]	
	Voter Turnout						
Mobile Internet							0.018
							[0.012]
Municipality FE	✓	✓	✓	✓	✓	✓	✓
Year FE	✓	✓	✓	✓	✓	✓	✓
Municipality controls × Year FE	✓	✓	✓	✓	✓	✓	✓
F-statistic	153.2	153.1	153.2	153.2	153.2	153.2	153.2
Observations	162,811	162,811	162,811	162,811	162,811	162,811	162,811

Notes. The Table reports specifications similar to those in Table 3 where the share of votes is expressed as fraction of eligible voters as opposed to total votes cast. The sample refers to the thirteen countries for which information on the number of eligible voters by municipality is available. The last column reports a regression where the dependent variable is voter turnout. See also notes to Table 3. ***,**,*: statistically significant at 1%, 5% and 10%, respectively.

Table A.18 Mobile Internet and Vote for New Parties (2SLS)

	New Parties	Party Positions					
	(1)	Social Issues (GAL-TAN) (2)	Restrictive Migration Policy (3)	Opposition Ethnic Minorities (4)	Opposition Multi-culturalism (5)	Opposition EU Integration (6)	Left-Right Ideology (7)
Mobile Internet	0.009						
	[0.083]						
				New Communitarian			
Mobile Internet		0.065***	0.075***	0.082***	0.075***	0.087***	0.074***
		[0.013]	[0.019]	[0.018]	[0.019]	[0.013]	[0.014]
				New Non-Communitarian			
Mobile Internet		-0.055	-0.065	-0.072	-0.065	-0.077	-0.064
		[0.073]	[0.069]	[0.070]	[0.069]	[0.081]	[0.073]

Notes. The Table reports results from 2SLS regressions similar to those in Table 3. The dependent variable in row 1 is the fraction of votes for new parties, defined as being founded in 2007 or after. The dependent variables in row 2 are the fractions of votes for parties simultaneously classified as communitarian and new. The dependent variables in row 3 refer instead to parties classified as new, but not communitarian. See also notes to Table 3. ***,**,*: statistically significant at 1%, 5% and 10%, respectively.

B. Data Appendix

Table B.1 List of Countries and Number of Municipalities

Countries	No. Municipalities
Austria	2,096
Belgium	208
Bulgaria	265
Czech Republic	5,878
Denmark	90
Finland	389
France	35,280
Germany	11,246
Greece	323
Hungary	3,139
Italy	8,079
Luxembourg	116
Netherlands	458
Poland	2,426
Portugal	304
Romania	3,121
Slovakia	77
Spain	7,996
Sweden	227
United Kingdom	376

Table B.2 List of Variables in CHES

GAL-TAN: position of the party in terms of a cultural dimension with Green, Alternative, Libertarian (GAL) at one extreme and Traditionalist, Nationalist, Authoritarian (TAN) at the other extreme. 0= Green, Alternative, Libertarian (GAL)...10= Traditional, Authoritarian, Nationalist (TAN).

IMMIGRATE POLICY: position on immigration policy. 0= Fully opposed to a restrictive policy on immigration...10= Fully in favour of a restrictive policy on immigration.

ETHNIC MINORITIES: position towards ethnic minorities. 0= Strongly supports more rights for ethnic minorities...10= Strongly opposes more rights for ethnic minorities.

MULTICULTURALISM: position on integration of immigrants and asylum seekers (multiculturalism vs. assimilation). 0= Strongly favors multiculturalism...10= Strongly favors assimilation.

POSITION: overall orientation of the party leadership towards European integration. 1= Strongly opposed... 7 = Strongly in favor.

LRGEN: position of the party in terms of its overall ideological stance. 0= Extreme left...5= Center...10= Extreme right.

Table B.3 Municipality Characteristics

	Average	Standard Deviation
Main Variables		
3G/4G Mobile Internet Coverage	0.86	0.25
Distance from closest Managers' Birthplace	171.4	474.0
Social issues (GAL-TAN)		
Communitarian parties	0.074	0.10
Universalistic parties	0.041	0.044
Migration Policy		
Communitarian parties	0.073	0.079
Universalistic parties	0.047	0.068
Multiculturalism		
Communitarian parties	0.077	0.081
Universalistic parties	0.045	0.057
Ethnic Minorities		
Communitarian parties	0.071	0.091
Universalistic parties	0.033	0.062
EU Integration		
Communitarian parties	0.069	0.080
Universalistic parties	0.14	0.17
Left-Right Ideology		
Communitarian parties	0.074	0.086
Universalistic parties	0.063	0.076
Baseline Characteristics		
Population at baseline (2001 or 2006)	5,411	34,324
Per capita GDP 2006	21,249	12,429
Urban	0.52	0.50
Log municipality area	5.10	1.49
% Population under 15 2001	0.16	0.071
% Population 60 and over 2001	0.17	0.077
Additional Characteristics		
% Population $\geq$15 unemployed 2001	0.036	0.021
% Employed services 2001	0.65	0.16
% Employed in manufacturing 2001	0.29	0.13
Distance from first city in country	281.0	497.6
Distance from first city in region	46.9	49.1
Distance from first city in province	17.9	25.3

Notes. The Table reports descriptive statistics for the main variables used in the analysis by municipality. The first two rows report the fraction of population covered by 3G or 4G signal and the average distance in kilometers from the closest managers' birthplace, respectively. The following rows report the fraction of votes accruing to communitarian (top decile) and universalistic parties (bottom decile) along the dimensions identified in CHES. The remaining rows report averages of baseline municipal characteristics from ESPON.

Table B.4 Telecommunication Managers - Descriptive Statistics

	Managers	Companies	Municipalities of Birth	Average Tenure (Years)
Austria	10	5	6	5.33
Belgium	9	4	8	7.00
Bulgaria	2	1	1	6.00
Czech Republic	12	4	7	5.21
Denmark	1	1	1	11.00
Finland	5	2	2	3.00
France	20	4	14	6.25
Germany	27	9	20	4.45
Greece	2	1	2	8.00
Hungary	3	2	3	4.33
Italy	13	3	10	3.90
Luxembourg	0	0	0	-
Netherlands	22	4	13	5.69
Poland	29	4	22	3.84
Portugal	12	3	6	6.08
Romania	3	2	3	4.00
Slovakia	2	2	2	7.50
Spain	13	8	7	10.16
Sweden	8	5	6	4.00
United Kingdom	26	5	20	2.65

Notes. The Table reports the number of top Telecommunication managers in office between 2007 and 2017, separately by country. Alongside, it reports the associated number of companies where these managers served and the number of municipalities of birth. The last column reports the average tenure at the company.

Table B.5 List of variables in IVS

Nationalism. PCA of the following variables: How proud are you to be a [country] citizen. 1= Very proud... 10= Not at all proud; How important to have been born in [country]. 1= very important...10= not at all important; How important to have [country nationality] ancestry. 1= very important...10= not at all important; How important to respect [country nationality] political institutions and laws. 1= very important...10= not at all important; How important to be able to speak [country language]. 1= very important...10= not at all important.

Individual freedoms. PCA of the following variables: How justifiable is: Homosexuality; Abortion; Divorce; Euthanasia. 1= never justifiable...10= always justifiable.

Local vs. Global. This is derived from two separate questions in EVS and WVS. For EVS, Which of these geographical groups would you say you belong to first of all? 1= locality or town where you live... 5= the world as a whole. We construct a variable which takes the value 1 if the respondents reports belonging to his/her locality or town. For WVS, How close do you feel: to own town/city; to your [county, region, district]; to [country]; to [continent]; to world. 1= very close...4= not close at all. We construct a variable which takes the value 1= if the respondents reports being closer to his/her city/town than to any other geography.

Opposition to Immigration. PCA of the following variables: How would you place your views on these scales? (labor market) Immigrants take away jobs from nationals. 1= take away... 10= do not take away; (Crime) Immigrants increase crime problem, 1= make it worse... 10= do not make it worse; (Welfare) Immigrants are a strain on welfare system. 1= are a strain... 10= are not a strain; (Concerned) Concerned with immigrants. 0= not at all... 5= very much.

Dislike Minority Neighbors. PCA of the following variables: Which ones of the following groups you would not like to have as neighbors: Immigrants; homosexuals; people of a different race; gypsies; Muslims. 0= not mentioned, 1= mentioned.

Opposition to EU Enlargement. Some say that the European Union enlargement should go further. Others say it has already gone too far. Which best describes your position? 1= should go further... 10= has gone too far.

Left-Right - Ideology. In political matters, people talk of 'the left' and the 'the right'. How would you place your views on this scale, generally speaking? 1= left... 10= right.

C. Analysis of Telecommunication Managers' Birthplaces

In this Appendix we briefly discuss the characteristics of managers' birthplaces. Appendix Table C.1 presents the distribution of managers' birthplaces vis à vis the distribution of the resident population, as a function of the municipality population. We classify municipalities based on their population rank (relative to other municipalities in the country). We focus on municipalities of population rank, 1-5, 6-10, 11-15 and >15. Column (1) of the Table illustrates the well-known regularity that population is highly skewed to the right: top European municipalities have a population of more than half a million, while those above rank 15 have an average population of around 4,000 people. As there are many more small municipalities relative to large ones, the majority of the European population (79 percent) lives in small municipalities (column 2). Column (3) illustrates the distribution of managers' birthplaces. Managers are more likely to be born in larger cities relative to the population at large. Still, almost 50 percent of managers' birthplaces in our sample rank above 15 in terms of population. Finally, column (4) presents the probability that a municipality features as a manager's birthplace. While there is a very high probability (18 percent) that a top city features as a manager's birthplace, the corresponding probability for small municipalities (i.e., those with rank above 15) is negligible (0.03 percent).

Although being a manager's birthplace is an extremely rare event among small municipalities, this does not necessarily imply that it is a random event and that distance from such birthplaces is randomly allocated across municipalities. To shed light on this, Appendix Table C.2 presents results of a regression of municipality's log distance from the closest manager's birthplace on municipality characteristics. Regressions include country and year effects and, as before, they are weighted by municipality population while standard errors are clustered by NUTS2 regions. We present regression results for the whole sample (column 1) as well as for increasingly restricted samples of municipalities that gravitate around (i.e., whose minimum distance refers to) managers' birthplaces of varying size, namely above population rank 5, 10 and 15. Column (1) of the Table clearly illustrates that, in the whole sample, municipalities further away from managers' birthplaces are poorer, less densely populated, less urban and with a greater share of employment in services and manufacturing than those close by. There is also evidence in column (2) of systematic differences in the age structure of such municipalities. As we increasingly restrict the sample to municipalities that gravitate around smaller managers' birthplaces, most of the correlations disappear. In particular column (4) shows a substantial balance in covariates, i.e., no significant correlation with income, urban status, employment structure. At face value these results suggest that any remaining concern about the non-random allocation of managers' birthplaces becomes even less relevant when restricting to increasingly smaller municipalities.

Table C.1 Distribution of Telecommunication Managers' Birthplaces by Size

Population Rank	Average Population (1)	Fraction Country Population (2)	Fraction Managers' Birthplaces (3)	Probability of being a Manager's Birthplace (4)
1-5	534	12.99	35.68	18.33
6-10	187	4.56	11.35	5.83
11-15	139	3.39	4.32	2.22
> 15	4	79.06	48.65	0.03

Notes. Column (1) of the Table reports the average municipality population (in thousands) separately by country-specific population ranking (municipalities ranked 1 to 5; 6 to 10, etc.). Column (2) reports the fraction of the population residing in each category. Column (3) reports the fraction of managers born in each category. Column (4) reports the probability that a municipality in each category is a manager's birthplace.

Table C.2 Correlation between log Distance from the Closest Manager's Birthplace and Municipality Characteristics

	All Municipalities (1)	Excluding Population Rank 1-5 (2)	Excluding Population Rank 1-10 (3)	Excluding Population Rank 1-15 (4)
Log per capita GDP 2006	-0.850***	-0.078	0.071	0.053
	[0.244]	[0.224]	[0.222]	[0.228]
% Unemployed 2001	0.027	0.018	0.029	0.044
	[0.040]	[0.041]	[0.037]	[0.034]
Urban	-0.533***	-0.224	-0.208	-0.271
	[0.150]	[0.175]	[0.183]	[0.183]
Log pop density	-0.240***	-0.141**	-0.135**	-0.120*
	[0.052]	[0.063]	[0.064]	[0.066]
% Population ≥60	-0.013	0.013	0.010	0.007
	[0.015]	[0.015]	[0.013]	[0.014]
% Population ≤15	-0.010	-0.035**	-0.035***	-0.027**
	[0.014]	[0.014]	[0.012]	[0.010]
% Employed in Services	0.009**	0.008*	0.006	0.008
	[0.004]	[0.004]	[0.005]	[0.005]
% Employed in Manufacturing	0.016***	0.014**	0.011*	0.010
	[0.005]	[0.006]	[0.006]	[0.007]
Observations	167,892	129,385	109,663	97,532

Notes. The Table reports results from regressions of the municipality's log distance from the closest manager's birthplace on baseline municipality characteristics. All specification include country X year fixed effects and are weighted by population size. Different columns refer to increasingly restricted samples that exclude municipalities gravitating around the largest municipalities in the country. Clustered standard errors at the NUTS2 region level in brackets.. ***,**,*: statistically significant at 1%, 5% and 10%, respectively.