Friends, neighbors, and sponsors in the 2016 French primary election. Revisiting a classical hypothesis from aggregated-level data

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During elections, candidates receive more support in some constituencies than in others, causing geographical patterns of aggregate votes. Conventional wisdom analyzes these patterns as a result of a "hometown" or a "home-state" advantage: candidates would obtain better results in constituencies where they are from. Since the early works of Key (1949), the concept of friends and neighbors effect has been regularly used to explain this phenomenon. Following this thesis, *information* about candidates is spatially biased: voters are more likely to support candidates owing to their geographical origin than because of programs they defend (Bowler, Donovan, and Snipp, 1993).

This widespread conception of local votes is problematic in many respects. First, from a theoretical perspective, it implies that localism coincides necessarily with apolitical forms of mobilization. As Bowler, Donovan, and Snipp (1993) noted, the idea behind Key's original concept is that candidates' localness would matter more in voter decisions than programs or personal capacities. In other words, the original conception of friends and neighbors effect goes against a vast literature showing that local environments serve as vehicles for *political* information (Lazarsfeld, Berelson, and Gaudet, 1944; Huckfeldt, 1986). This conception mainly derives from the fact that candidates' localness is defined regarding their place of birth or their place of living. However, candidates are sometimes perceived as locals by voters because they have accomplished a part or all their political career in the same constituency. Considering electoral "strongholds" built during candidates' careers as the main indicator of their localness gives an alternative interpretation of friends and neighbors effect. Within strongholds, voters evaluate candidates' likely action not only in light of what they represent personally but also regarding what they have accomplished for the locality. Strongholds also provide candidates with several resources to maintain their local reputation. Among these resources, the role played by the local media market or by personal networks has been highlighted in several works (Bowler, Donovan, and Snipp, 1993; Pattie and Johnston, 2006; Oberholzer-Gee and Waldfogel, 2009).

Second and additionally, considering local effects only through the prism of the original friends and neighbors hypothesis leads to ignoring the other mechanisms that potentially explain geographical patterns of votes. Among the alternative explanations for these patterns, the possibility that candidates could benefit from the support of local officeholders has been sometimes mentioned but rarely tested empirically. Such local supports would act as opinion leaders to capture local votes: electors would be more likely to vote for the candidate who receives support from local officeholders. In other words, local supports are mediators of candidates' reputation, and their impact on vote shares could be labeled as "indirect friends and neighbors effect".

In the light of these elements, the present article intends to reassess the question of friends and neighbors effect, considering three main variables: 1) the distance between the electorate and candidates' stronghold; 2) a measure of administrative contiguity, namely a distinction between constituencies within the same region where candidates' strongholds are located and others; and 3) the spatial dispersion of representatives who gave support to candidates. For this, we used aggregated data from the 2016 "Right and Center" primary in France. For all candidates, in addition to their political career and the strength of their local anchorage, we considered the sponsorships they received from parliament members and local representatives before the election. We included these variables in a series of nested

seemingly unrelated regressions (SUR) models to assess the impact of friends and neighbors' and local support effects on vote shares at the department level.

1. Literature review

1.1. The impact of localism on the production of votes: The friends and neighbors hypothesis

VO. Key's early works on the southern United States showed that the scores of candidates running for offices depended on where they were living, higher scores being reached in their home constituencies (Key, 1949). This phenomenon, defined as friends and neighbors effect, illustrated the relation between voters' identification with territory and votes. Namely, the home advantage was explained by the propensity of local candidates to maintain direct personal ties with the electorate, as well as the effectiveness of appeals to support the hometown boy. According to Key, localism in voting was evaluated as reflecting a poorly informed electorate having little interest in public issues.

Since Key's pioneer works, many studies have dealt in greater depth with the friends and neighbors effect, reaching additional evidence about the role of localism in voters' choices (Reynolds, 1969; Johnson, 1974; Tatalovich, 1975; Garand, 1988). Nevertheless, Key's perception of local effects as apolitical motives has largely been revised since, and further studies have suggested that what was lying behind friends and neighbors effect was something more than only the expression of local identification. Several years after Key's works, Robert Putnam gave a more extensive explanation of local effects (Putnam, 1966). First, Putnam emphasized, in his turn, the tendency of voters to identify with a community (Campbell et al., 1960) and to vote for locals, mostly because demonstrating local roots seems like a necessary condition for accepting candidates' ability to defend voters' interests (Campbell et al., 2019). As Gimpel and his colleagues suggested (2008), sharing local roots with a candidate increases the propensity to perceive him as trustworthy. In their re-examination of friends and neighbors effect in two intra-party contests, Johnston et al. (2016) described this dimension referring to a "local friends" hypothesis: the personal contacts the candidate has within his constituency would mobilize and support him, creating a local pattern of votes. If we apply this definition to larger cases than intra-party competitions, we can characterize this type of local effect as direct and peculiar to a candidate's home constituency.

Second, behind the friends and neighbors effect could lie the impact of day-to-day contacts between ordinary citizens. On this point, Putnam's hypothesis meets Cox observations about the so-called "neighborhood effect" (Cox, 1969). Many studies on political socialization among peers revealed that interpersonal contact within a territory leads to higher homogeneity in political opinions and votes—often in favor of the majority political forces (Lazarsfeld, Berelson and Gaudet, 1944; Miller, 1977). More recently, Pattie and Johnston provided evidence for social interaction effects, combining survey and aggregated data (2001). According to Johnston et al. (2016), this dimension of friends and neighbors refers to the "neighbors" hypothesis. In this case, the diffusion of information about the candidate's attributes spreads beyond his home constituency, partly through citizen networks. Following works by Bowler et al. (1993), Johnston et al. (2016) add that local media also play an essential role in information spreading. This second type of local effect could be characterized

as indirect or mediated, and it is not limited to the candidate's home but likely to spread to contiguous territories.

Recent works provide arguments to support both hypotheses. Over the years, analysts of friends and neighbors effect have shifted the regard from the question of the home advantage to the relation between distance and information spreading (Gimpel et al., 2008). The question is no longer to know if candidates can benefit from familiarity with voters in their home constituencies but to know if and how far reputation effects can overcome administrative boundaries and spread across territories (Bowler, Donovan, Snipp, 1993). Key's hypothesis implies that familiarity with candidates declines as the distance becomes too long to maintain personal ties with the electorate. As a result, local effects should occur in a small perimeter around the candidate's home and decay quickly beyond. In other words, the negative impact of distance from a candidate's home over his electoral scores should follow an exponential decay. Evidence of such effect was provided by Garand's findings (1988), proving the efficacy of home-state advantage but not of region advantage. Even more convincing, Gimpel and his colleagues (2008) found that the negative effect of the distance to hometown on candidates' performances was far to be linear. Consistent with Key's original hypothesis, they showed that modeling distance as a quadratic function fitted their data better than using a linear form of distance. According to their results, the distance-decay effect over candidates' performance quickly dissipates, having no impact once locations are so distant from the hometown that candidate's roots is not a decision criterion anymore

On the other hand, following the "neighbors" hypothesis, the distance effect should follow a logarithmic function, and scores decay should be slower, occurring significantly only after a longer distance than in the "local friends" scenario. For instance, using field experiments, Panagopoulos et al. showed that county ties more than hometown ties between voters and candidates explained mobilization during primary and general elections, highlighting the mobilizing role of neighboring communities (2017; 2019). Evans et al. (2017), in their study of the 2015 UK general election, also found evidence of a contiguity effect on vote preferences, even though they conclude that this effect weakens more than that of the linear distance once other variables are controlled. In their 2016 article, Johnston et al. found evidence both for "local friends" and "neighbors" hypotheses. Their results showed that each candidate for the Labour leadership in both 1994 and 2010 elections won more support in their constituency than elsewhere, and performed better in neighboring constituencies and in the broader regions in which they were located.

1. 2. Defining candidates' localness

A second matter concerns the assessment of candidates' localness. After Key's original study, candidates' localness was initially assessed according to candidates' place of birth. It implied that localness is a given, not a construct, and a non-political attribute. Later works have knocked the first hole in this original conception, showing that localness could be estimated from candidates' place of living. Demonstrating that candidates can benefit from more votes around the places they are living in but where they are not necessarily born shows that localness can be not only inherited but acquired. It is still unclear, however, how localness is acquired. Is it the unique consequence of displaying local roots, as the original theory developed by Key assumed, or does it have something to do with the political activity of candidates? Candidates running for office rarely enter the race without previous political experience (Putnam, 1976). Some of them have accomplished at least a part of their career in the same constituency. These constituencies, where a given candidate has held one or several offices over the years, can be defined as personal local strongholds. The term "personal" that we use in this definition is of great importance because the literature on modern democracies

principally uses the concept of stronghold referring to territory under the dominance of a political party (Keefer and Khemani, 2009; Lang and Pearson-Merkowitz, 2015). Using this concept to refer to a *personal* political attachment to a territory seems to be reserved principally to traditional societies or unachieved forms of liberal democracy, in other words, to archaic politics.

Nonetheless, there are many reasons to believe that political activity is a prominent part of candidates' localness. First, incumbency has been proven to be a crucial factor in local votes (Trounstine, 2011). If incumbency is not necessarily an indicator of a long-term anchoring, the incumbent advantage demonstrates the importance of controlling resources for mobilizing the electorate (Erikson, 1971; King, 1991). Additionally, incumbents often live in the constituencies where they hold elective functions. As a result, it is sometimes hard to make a distinction between friends and neighbors and incumbency effects. Previous works even suggested that friends and neighbors effect would be more substantial at the beginning of candidates' careers and, more generally, insofar candidates' popularity is limited (Tatalovich, 1975). As this popularity increases, presumably throughout most candidates' career, the effect local reputation decreases because candidates are more widely known across a larger territory, and because they are more readily associated with a specific partisan label. In the same vein, Rice and Macht (1987b) have suggested that challengers would benefit more from local support than incumbents. However, on the other hand, Ansolabehere and his colleagues advocated the idea that the incumbent advantage in US House elections from 1872 to 1992 owed in large part to personal vote (Ansolabehere, Snyder and Stewart, 2000; Ansolabehere and Snyder, 2002). Besides, Meredith (2013), in his study of US gubernatorial elections from 1967 to 2011, showed that candidates who held local or state-legislative office received more friends-and-neighbors support than others.

Second and more generally, while most of the previous studies of personal votes were based on an objective definition of candidates' localness, recent works have suggested that what mattered more was the perception the electorate had of candidates' localness. Occupying local functions in the long term contributes to being perceived as local. The literature on personal vote-earnings attributes (Cain, Ferejohn, and Fiorina, 1987) has already provided evidence that local political experience and localness are connected. From a case-study about Belgian federal house and Flemish parliament elections, Put and Maddens (2015) shown that holding a political office at the local level is a primary personal vote-earning attribute for party candidates. In their study of the 2015 UK general election, Rüdig et al. (2016) suggested that incumbency helped candidates in being perceived as local. Local representatives can use funds to please voters and win votes, a strategy commonly designated as "pork barrel" politics (Mayhew 1974; Lancaster and Patterson 1990). Local representatives can also use their positions to highlight their localness (Tavits, 2010). Finally, the office also provides candidates with ample media attention and visibility (Prior, 2006), as well as an organizational capacity that can be relied on during the campaign.

From this perspective, the effects of geographic distance might interact with the effects of institutional distance. The likelihood to vote for the local candidate might be higher in constituencies located inside stronghold's administrative region than in constituencies located outside. Candidates sometimes hold additional functions in constituencies located within the same region as their stronghold. For instance, a mayor can be councilor of his city's county, department, or region. In this case, and the absence of local opponents, this candidate might benefit more from geographic proximity with the electorate within his stronghold's region than outside, because the resources available for capturing personal votes, including media coverage and organizational capacities, are administratively bounded. Also, neighboring effects might be facilitated insofar as the electorate from the same district has to deal with the

same political offer during upper-level elections. In other words, after controlling for geographic distance, a candidate would be more likely to be perceived as local within than outside the broader region where his stronghold is located.

To summarize, there are many arguments for believing that distance to candidates' strongholds is an essential factor in the spatial distribution of votes. The ambition of this article is to revisit friends and neighbors hypothesis, measuring the effect of distance from a stronghold on votes, controlling for the influence of administrative division. Bringing the political components of candidates' localness to light has important theoretical implications for democratic politics. If friends and neighbors hypothesis is traditionally associated with forms of apolitical considerations, assuming that candidates' localness is politically based can drastically change the picture.

1.3. Political sponsors

Beyond distance and administrative contiguity, a third hypothesis could explain why voters mobilize more for local candidates. In his 1966 article, Putnam also considered a "party activity" hypothesis, namely the possibility that local majorities emerge through the activity of a party organization. In the same article, Putnam discredited this hypothesis, finding no correlation between party strength and the extent of personal contact by party organization in a given county, nor evidence that the persons personally contacted by the party shown higher sensitivity to the community political environment than those who had not. Consequently or not, this hypothesis has not been tested so far until recently, when several works gave some credit to it. Especially, field experiments realized by Gerber, Green, and Larimer (2008) or by Nickerson (2008) have demonstrated the efficiency of canvassing for mobilizing voters. Gorecki and Marsh directly addressed the role of canvassing in driving votes for local candidates (2012). Nevertheless, their conclusions suggest that the electoral effects of canvassing decrease when personal contact occurs inside the candidate's closest neighborhoods.

This result does not necessarily signify that the "party activity" hypothesis should be rejected. Party activity does not only consist of activism and canvassing. It also has something to do with political supporters' networks. This reframing of Putnam's hypothesis has been done recently by Johnston and al. (2016). Candidates often need support from the party's members or local representatives to run for offices. "Political friends", as Johnston et al. named it, constitutes the third component of friends and neighbors. Networks of political supports and their activity might explain local votes. In this case, friends and neighbors effect occurs indirectly because voters chose to vote for the candidate who is supported by local representatives. "Political friends" effect gets close to what has been described as "reverse coattails". Coattails effect is most often defined as a spillover effect whereby an election for an upper-level office influences an election for a lower-level office (Miller, 1955). Conversely, reverse coattails imply that strong support in a district for a candidate for lower office may enhance the vote margin for a candidate running for an upper-higher level election (Ames, 1994). For our concerns, it could be posited that lower-level political supports might contribute to spreading information about upper-level candidates.

As Johnston et al. noted (2016), "political friends" may refer to political supports outside the candidate's constituency or region. Therefore, these supports may produce effects independently from friends and neighbors. Political supports may also exert their influence within the candidate's constituency or region. In this case, political friends are a component of friends and neighbors. Following the perspective developed in this article, political friends would contribute to political activity aiming for asserting candidate's localness.

1.4. Environmental variations of local votes

Previous literature has shown that friends and neighbors effect was subject to variations according to election context and sociopolitical environment. Localism is known to operate during local elections as well during national ones (Lewis-Beck and Rice, 1983). Nevertheless, the importance of the personal vote heavily depends on the ballot and vote type (Carey and Shugart, 1995). The personal vote would be more common in first-past-the-post systems than in list ones. Conversely, personal attributes of candidates are more useful shortcuts for voters in list systems when lists are opened than when they are closed (Shugart, Valdini and Suominen, 2005). Put and Maddens (2016) emphasize that personal vote is more common in candidate-centered systems than in party-centered systems ones. In the former category, the political party is being replaced by the individual candidate as the primary criterion of choice (Van Holsteyn and Andeweg 2010). Candidates would display personal vote-seeking behavior to cultivate personal votes, which implies that voters would be more influenced by candidate-based attributes than party-based attributes (Thijssen 2013).

Following this argument, some type of elections would favor all the more friends and neighbors effects. Key considered that local effects had more chances to occur during local and less salient elections when ideological cleavages mattered less. As Johnston (1974) noted, voters are unlikely to cross party lines to support a local candidate. For these reasons, primary elections are considered as particularly subject to local effects (Tatalovich, 1975; Johnston et al., 2016). Indeed, this kind of election gathers homogeneous electorates regarding their political preferences. Even in open primaries, only a small percentage of voters do not belong to the political camp that organized the primary. Party and ideological barriers that would usually prevent voting for the local candidate are rather thin in this case.

Following the conception of local votes as parochial behaviors, several works pretended that friends and neighbors effect would be smaller among partisan electorates. Rice and Macht go even further, suggesting that friends and neighbors effect would be a lever to mobilize people that otherwise would not take part in the election (1987a). Fiva and Smith (2017), in the context of Norway elections, came to a similar conclusion, observing that the withdrawal of a local candidate at the second round of an election led to substantial turnout drop-offs. Similarly, Baumann et al. (2020), from a study of voter rolls from Ohio and Georgia during 2018 gubernatorial primary elections, acknowledged that friends and neighbors effect is stronger among people who occasionally participate in elections than among those who habitually vote.

This idea falls in contradiction with what is generally admitted about the characteristics of primary voters. How to explain, then, why friends and neighbors effect is known to operate during such elections? Our previous developments provide an answer to this paradox. If local votes are not merely based on apolitical motives, but also political attributes of candidates such as previous political experience, it is not surprising that they occur during elections where the electorate generally displays high levels of political knowledge. This argument also justifies the use of candidates' stronghold as the starting point of friends and neighbors effects.

Another argument justifies our approach. Friends and neighbors effect would vary between rural and urban constituencies. Lewis-Beck and Rice (1983) acknowledged that candidates in less populated areas receive proportionally more friends and neighbors votes. Some arguments can support this idea. The social structure of rural areas might be favorable to the spreading of personal support. Also, we know since the work of Tatalovich (1975) that friends and neighbors effect might be limited when candidates' strongholds, and especially those of strong opponents, are geographically close. Therefore, the scope of friends and

neighbors effect might be less important in urban areas where the distribution of population enhances the proximity of strongholds. Indeed, as Gimpel et al. suggested, a majority of candidates emerge mainly from the most populated areas (2011).

While friends and neighbors hypothesis was originally posited from and for the case of the United States, it has been tested since in several national contexts. Blais et al. (2003) have tested if a local candidate preference existed among Canadian electorate during the 2000 federal election, finding it decisive for 5% of Canadian voters after controlling for party identification, leader and party evaluations. Ames (1994) assessed the reverse coattail effect in the presidential election of 1989 in Brazil, showing that candidates did better scores in municipalities where the mayor represented their party. In Europe, Górecki and Marsh (2012, 2014) evidenced the impact of distance on votes during the 2002 and 2011 Irish general elections. Electoral studies in the United Kingdom mainly focused on neighborhood effect (Cox, 1969; Miller, 1977; Johnston and Pattie, 2006) rather than on candidates' traits or localness. Nevertheless, several studies have recently questioned the components of attributes-based votes in the United Kingdom, like candidate-voter distance, incumbency, or friends and neighbors (Arzheimer and Evans, 2012; Rüdig et al.,2016; Johnston et al., 2016).

In Norway, Fiva and Smith (2016) identified a friends and neighbors effect on turnout during two-rounds elections between 1909 and 1918. In Estonia, Tatvis (2010) evaluated the personal vote, including the effect of local political experience, during the 2003 parliamentary elections. In Belgium, Put and Maddens (2015) highlighted the importance of candidates' local ties fostered by holding political office during Belgian House elections and Flemish regional elections over the period 2003-2010.

On the contrary, the concept of friends and neighbors has been rarely used in French electoral analysis (Bussi and Freire-Diaz, 2012). Nevertheless, the recent introduction of open primary elections in the French political life has given rise to interest in candidates' localness (Fourquet, 2011; Audemard and Gouard, 2014). Despite the lack of works on the topic, we pretend that primary elections in France are an excellent opportunity for testing the theoretical framework depicted above. Since the 1962 electoral reform and the election of the President of Republic at direct universal suffrage, the French representation system is principally candidate-centered. Presidential election, but also legislative elections and primary elections in France are two-round first-past-the-post ballots, and many studies emphasized the importance of the personal vote in French politics (Braud, 2002; Brouard and Kerrouche, 2013).

Additionally, several arguments justify the use of stronghold as the base of candidates' localness in the French context. Notably, the formation of French political elites is highly centralized, and the main candidates are often parachuted into local constituencies. In consequence, candidates' localness derives more from their political activity for stronghold strengthening than from their origins. It is the reason why, while it is highly nationalized, French politics give prominence to local roots. Previous literature has acknowledged the impact of local factors in the spatial distribution of votes in France, and some parties – such as the French Communist Party – have built up authentic electoral strongholds over time (Lord, Petrie, and Whitehead, 1968).

Nevertheless, in the French case, the concept of stronghold also applies to politicians. Displaying long-term local roots through an electoral stronghold seemed to be a key feature for making a national political career in France. Thereby, French congressmen are sometimes accused of focusing more on constituency work than on parliamentary work (Brouard, Costa, Kerrouche and Schnatterer, 2013).

2. The case of 2016 Right and Center primary election in France

Compared to other countries such as the United States, primary elections are relatively new in French politics. The first closed primary in France was organized by the Socialist Party in 1995 to designate the candidate for the presidential election. Similar elections were also organized in anticipation of presidential elections: by the ecological party "Les Verts" in 2002 and 2007; by the French Communist Party in 2002, 2007, and 2012; once again by the French Socialist Party in 2006; and in 2007 by the main right-wing party, the Union for a Popular Movement (UMP– that became The Republicans (LR) in 2015). In 2011, the French Socialist Party and the Left Radical Movement organized the first open presidential primary election. This primary rallied almost 3,000,000 voters at each round, and several analysts considered it as the key to the success of François Hollande at the 2012 Presidential election.

Before the 2017 Presidential election, three open primaries were organized, with different outcomes in terms of mobilization. In October and November 2016, only 16,000 people participated in the ecological party primary. In January 2017, around 2,000,000 voters took part in each round of the primary organized by the Socialist party. Finally, on November 20 and 27, 2016, more than 4,000,000 took part in each of the two rounds of the primary jointly organized by three right and center parties, The Republicans (LR), the Christian Democrat Party (PCD), and the National Centre of Independents (CNI).

Contrary to primary races in United-States, presidential primaries in France are national elections applying identical rules and a single voting system across the entire territory. The 2016 Right and Center primary was a two-round first-past-the-post election, with a total of 10,229 polling stations opened in the country[1]. The primary was open to every French voter who had subscribed to electoral registers. At each round, every voter who was willing to participate had to pay 2 Euros and sign a charter undertaking "to share the republican values of the Right and the Center and to make a commitment for the political change to succeed in France recovery.". As for the presidential election, every candidate had to follow strict rules and present a certain number of sponsorships to enter the race. First, each candidate had to prove the official support of 2,500 members from one of the three political parties who co-organized the election, distributed across at least ten departments, with no more than one-tenth of them coming from the same departmental federation. Then, each candidate had to get sponsorships from 250 representatives from at least 30 departments with no more than one-tenth of them coming from the same department. Among these representatives, a minimum of 20 had to be members of parliament (from the National Assembly, the Senate, or the European Parliament).

Six candidates were dismissed for lack of sponsorships. Finally, seven candidates were allowed to participate in the election. One of them, Jean-Frédéric Poisson, was a candidate owing to his status as President of PCD and was not subjected to the sponsorships rule. The six other candidates were all members of LR: Jean-François Copé, François Fillon, Alain Juppé, Nathalie Kosciusko-Morizet, Bruno Le Maire, and Nicolas Sarkozy. Among them, François Fillon, Alain Juppé, and Nicolas Sarkozy were legitimately considered by observers as the favorites in this ballot.

François Fillon was born in Le Mans (pop. 140,000) in the rural department of Sarthe, in 1954. From an upper-class background, François Fillon was educated in Le Mans until a MA degree in public law achieved in Paris. Besides his local roots in Sarthe, François Fillon held several offices in this constituency. He entered the National Assembly as MP of Sarthe in

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[1] For the 2017 Presidential Election, about 65,000 polling stations were opened all over France.

1981 and was re-elected four times in 1986, 1988, 1997, and 2007. Among candidates to the primary election, he was the only one to have held every local office in the same region, the Pays-de-la-Loire: mayor Sablé-sur-Sarthe (pop. 12,350) from 1983 to 2001, President of the Local council community of Sablé-sur-Sarthe, President of the Departmental Council of Sarthe (from 1992 to 1998), or President of the Regional Council of Pays de la Loire (from 1998 to 2002). Like Alain Juppé or Nicolas Sarkozy, François Fillon was, at the time of the primary election, a heavyweight of French politics, having been minister several times, and Prime minister between 2007 and 2012.

Alain Juppé was former President of the Union for a Popular Movement (UMP – the former name of LR) between 2002 and 2004, several times minister, and Prime Minister from 1995 to 1997. He was born in 1945 in Mont-de-Marsan (pop. 30,000), in the south-east of France, in the Aquitaine region. After having done his secondary education in Mont-de-Marsan, he was graduated from several grandes écoles in Paris, including the "Ecole Normale Supérieure", "Sciences Po Paris", and the "Ecole Nationale d'Administration". At the time of the election, he was since 1995 mayor and President of the Intercommunal Council of Bordeaux (pop. 252,000), the central city in Aquitaine region, located in the department of Gironde. Alain Juppé was also an MP of this department from 1997 to 2004.

Nicolas Sarkozy was probably the most famous of the candidates of these primary elections. Former minister, former President of the Republic (2007 – 2012), Nicolas Sarkozy also was a former UMP president (2004 – 2007 and 2014 – 2016). As President of UMP, Nicolas Sarkozy was behind the change of the party's name from UMP to LR in 2015. He was born in Paris in 1955 and was educated in the same city, studying in "Sciences Po Paris" and training as a lawyer. From 1983 to 2002, he was the mayor of Neuilly-sur-Seine (pop. 61,000), a city located in the upper-class west Parisian suburb, in the department of the Hauts-de-Seine. In this department, Nicolas Sarkozy has been President of the Departmental Council (2004 – 2007) and elected as MP in 1988, 1993, 1995, 1997, 2002, and 2005. However, at the time of the primary election, he had not held any office in the department of the Hauts-de-Seine since 2007.

The three last candidates from LR were considered as outsiders. Jean-François Copé was born in 1964 in Boulogne-Billancourt, in the upper-class department of Hauts-de-Seine. He was graduated from "Sciences Po Paris" and the "Ecole Nationale d'Administration", trained as a civil servant. Several times minister, he became mayor of Meaux (pop. 55,000) in 1995 and still holds the office at the time of the primary election. In 2003, he also became President of the Local council community of Pays de Meaux. The city is in the department of Seine-et-Marne, in the administrative region of Ile-de-France. Jean-François Copé was MP of Seine-et-Marne (elected in 1995, 1997, 2002, 2007, and 2012) and Regional councilor of Ile-de-France from 1998 to 2007.

Undoubtedly, Jean-François Copé was the underdog of the 2016 election. At this time, his political career was marked by many scandals. In November 2012, Jean-François Copé was chosen as President of the UMP in a highly contentious context. The second round of this intra-party election ended in a 0.5 percentage point difference between Jean-François Copé and François Fillon, his main opponent. Each camp accused the other of electoral fraud and irregularities. Jean-François Copé was finally designed as the winner, with 50.28% of votes. Two years after, he was involved in the "Bygmalion" scandal about suspicions of financial fraud during the 2012 presidential election campaign of Nicolas Sarkozy. Jean-François Copé had to resign from his position inside the UMP. Although he was dismissed and remained a

member of UMP, then LR, Jean-François Copé was ostracized within the party when he decided to stand in the 2016 primary election.

Nathalie Kosciusko-Morizet was the only woman and the younger among the candidates. She was born in Paris in 1973. Her father was the former mayor of Sèvres, in the department of Hauts-de-Seine, from which he also was a departmental councilor. She was graduated from the "Ecole Polytechnique", trained as a civil engineer. Between 2008 and 2013, she was mayor of Longjumeaux (pop. 22,000), a mid-sized city located in the Parisian suburb, in the department of Essonne. In this department, she was elected as MP in 2002, 2007, and 2012. Several times minister, she also was a member (2004 – 2010) of the Regional Council of Ile de France. At the time of the primary election, she did not hold any office in her stronghold department, the Essonne.

Bruno Le Maire is born in 1969 in Neuilly-sur-Seine, in the department of Hauts-de-Seine. Like many prominent French politicians, he did his education in Paris, and was graduated from prestigious Grandes Ecoles, including the "Ecole Normale Supérieure", "Sciences Po Paris", and the "Ecole Nationale d'Administration" (ENA). Holder of the agrégation in modern literature, Bruno Le Maire entered the ministry of foreign affairs after the ENA. He subsequently became a close collaborator of Dominique de Villepin, secretary-general of Jacques Chirac, the President of the Republic. During his career, Bruno Le Maire held many ministerial functions.

Contrary to other candidates, Bruno Le Maire had never held any municipal office. He started his candidate career in the department of Eure, a rural department in the region of Normandie. Elected as MP of Eure in 2007, he was re-elected in 2012. In the same region, he also was a regional Councilor, from 2010 to 2015.

In the first round of the Right and Center primary election, 4,298,097 people went to the polls. François Fillon came out in the lead with 44.08% of votes. Alain Juppé reached the second round with 28.56% of votes. Nicolas Sarkozy (20.67%), Nathalie Kosciusko-Morizet (2.56%), Bruno Le Maire (2.38%), Jean-Frédéric Poisson (1.45%), and Jean-François Copé (0.3%) were eliminated. In the second round, with a slight increase in turnout (4,404,812 voters), François Fillon won a unanimous victory over Alain Juppé, with 66.49% of votes against 33.51%.

The map of the first-round results at the department level for Metropolitan France shows that most candidates do better results in their stronghold department than on average (Maps 1 to 6). It is the case of François Fillon in Sarthe (78.3%), Alain Juppé in Gironde (55.3%), Bruno Le Maire in Eure (10.2%), Nathalie Kosciusko-Morizet in Essonne (3.8%), and Jean-François Copé in Seine-et-Marne (1.9%). The only exception is Nicolas Sarkozy, that score in Hauts-de-Seine is lower than his national average (15.1%).

3. Data and methods

We conducted our study at the department level for metropolitan France. Three main reasons justify our choice. First, while no individual data in line with our research questions was available for this primary election, it was easier to collect data at the department level than at the level of smaller units. It is especially challenging to work at the polling station level here because polling stations for primary elections are not the usual ones but rather a merging of two or more, and it is sometimes demanding to determine precisely their boundaries. Moreover, whereas the polling station level requires some transformations of

census data, the department level allows using census data directly, because the National Institute for Statistic and Economic Studies (INSEE) provides variables and indicators at this scale. Second, while it does not rule out the ecological fallacy, the department level makes it possible to study zones that vary in terms of political and sociological characteristics and to

Maps 1 to 6. Candidates scores in the 1st round of the 2016 primary election
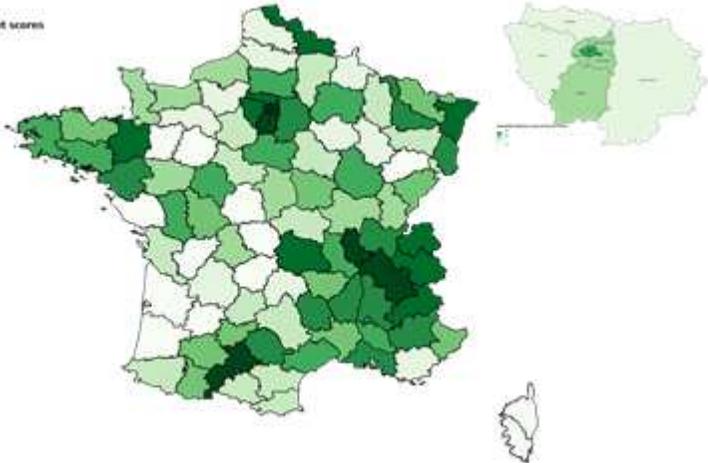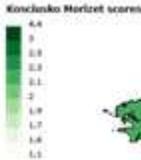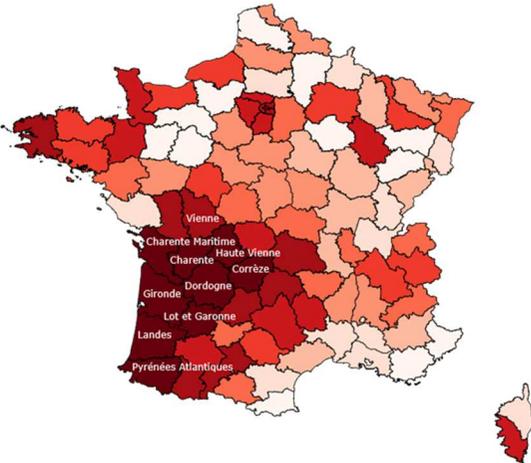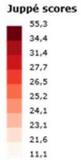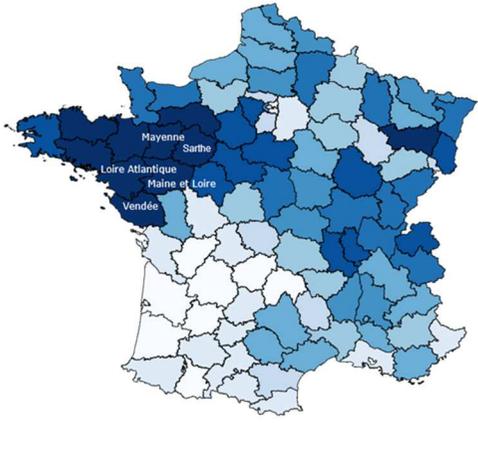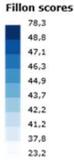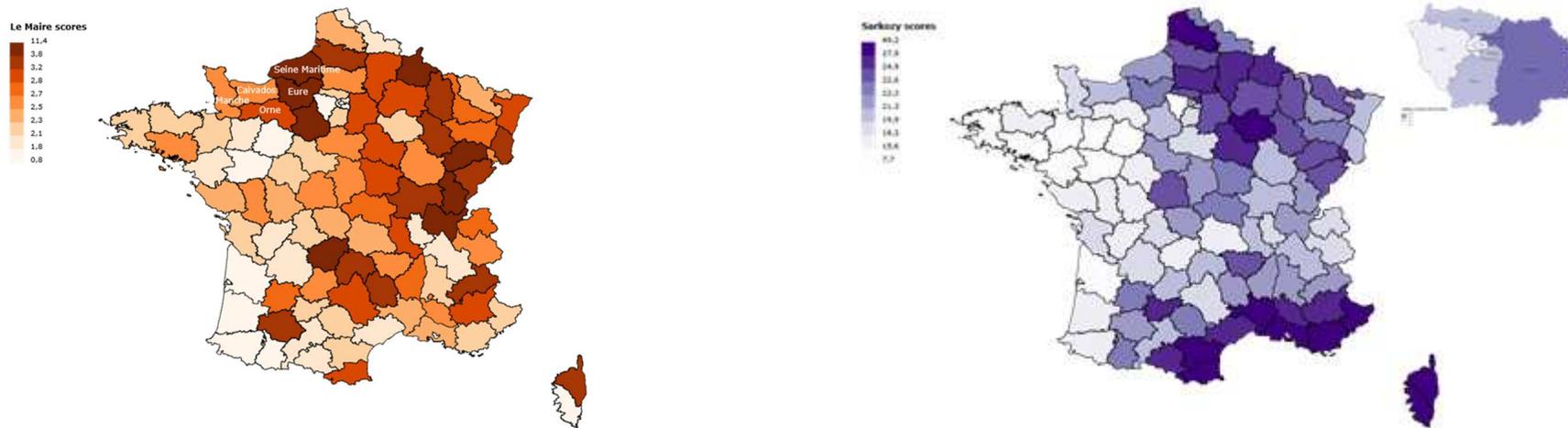
Maps realized with Magrit (French National Centre for Scientific Research). Classes are defined using quantiles. The names of departments are those from candidates' stronghold administrative region. For visibility, the map of departments of Ile-de-France is displayed for candidates whose strongholds are located in the Parisian region.

look at a sufficiently large number of cases (96 units for metropolitan France). Third, the department encompasses all other constituencies: it is the reference constituency for Senate and Department elections, it covers constituencies for Legislative and Municipal elections, and lists that stand for Regional elections are elected at this level. Therefore, the department appears to correspond accurately to candidates' stronghold, making both possible and relevant to measure the three components of friends and neighbors effect at this level of analysis.

These three components are measured with three main variables. We first measured the distance between the department where a candidate carried out his/her main functions, defined as the stronghold and every other French department. We calculated the Euclidian distance between departments' centroids using the Geographic Information System ArcGis. Following previous literature and to capture distance-decay effect accurately, we model distance successively as a linear function, a logarithmic function, a quadratic function, and a cubic function. To avoid multicollinearity when introducing exponentiated functions, we modelized quadratic distance and cubic distance as orthogonal polynomials[2].

Second, we take into account the contiguity effect by distinguishing between departments located in the stronghold administrative region and others (dummy coded, one if yes, zero otherwise). Administrative regions are those of 2015 redrawing of territorial boundaries: the Nouvelle-Aquitaine in the case of Alain Juppé, the Ile-de-France for Jean-François Copé, Nathalie Kosciusko-Morizet, and Nicolas Sarkozy, the Normandie for Bruno Le Maire, and the Pays-de-la-Loire for François Fillon.

Finally, the third variable was constructed using sponsorship data. On September 21, 2017, the organization committee published a list of representatives' sponsorships, selected at random for each candidate[3]. This list initially provided little information. Besides sponsors' names, only their functions and constituencies appeared[4]. We fleshed out this information, adding the following data for each sponsor: gender, political affiliation in 2016[5], whether they were holding multiple offices or not[6], and their length of service in their current office. Finally, for sponsors who were mayors (72.2% of our sample), we also gave the demographic size of their city. Additionally, we were able to obtain the complete list of parliament members who publicly expressed their support for one of the six candidates[7]. For each department, we have calculated the total number of sponsors, and then the percentage of them that came out in favor of each candidate[8].

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[2] For that, we used "poly" function in R, which performs Graham-Schmidt ortho-normalization on the polynomials $x, x^2, …, x^n$.

[3] The entire list of sponsorships has unfortunately not been publicized.

[4] Each sponsor was classified in a single category of function, even if they held multiple offices. Generally, the function used was the highest, but we were able to identify many exceptions.

[5] For local representatives, especially for mayors from small towns, we drew our categories from the classification made by the Ministry of the Interior during the last elections where sponsors were elected.

[6] Except for city and intercommunal councilors. We have also classified as "mayors" the thirteen presidents of municipal associations, the three *arrondissement* mayors, and the sixteen deputy mayors included in the sample.

[7] See *Le Monde*, http://www.lemonde.fr/les-decodeurs/article/2016/05/04/primaire-de-la-droite-et-du-centre-qui-soutient-qui_4913292_4355770.html

[8] Only two constituencies cannot be connected to the department level: French expatriates, and European constituencies which combine several departments. However, the number of sponsors from these two constituencies is very low in the sample. Furthermore, most European deputies also hold a local office, which allowed us to assign them to one department. Hence, we exclude from the sample the representatives of expatriates, as well as one of the four European deputies who did not hold any local office within metropolitan France. The three other European deputies were assigned to another function category according to their local office.

For our multivariate analysis, we have included three control variables. We characterized departments using several socio-demographic variables from INSEE data: the percentage of houses; the percentage of owners; the percentage of social housing; the percentage of farmers among the working population; the percentage of people over 15 years of age who are out of school and hold a college degree; the average net salary; the percentage of salaried and hourly wage workers; the percentage of executives; the percentage of people over 64 years of age. We also included a variable related to the percentage of Catholics within each department[9]. These variables being strongly correlated at the department level, we chose to run first a Principal Components Analysis (PCA) to identify sociodemographic factors. The analysis of the eigenvalues plot suggested a two factors solution. The first dimension explains 60.9% of the total variance and is defined by houses, owners, salaried and hourly wage workers, Catholics and farmers, and people above 64 years old. We also observed on this dimension strong negative loadings for social housing, college degrees, average net salary, and executives. This first factor illustrates the opposition between rural and urban departments, with positive values indicating the most rural spaces. We thus labeled this variable "Rural departments". The second dimension explains 17.2% of the variance and is defined by incomes, people above 64 years old, and college degrees. Negative loadings were observed for salaried and hourly wage workers and social housing. This second factor illustrates the opposition between higher and lower-class departments, with positive values indicating higher-class spaces, hence called Higher-class departments variable.

We finally constructed an index to assess the level of mobilization of the LR electorate over the years, the LR scores variable. For this, we considered for each department turnout rates and vote shares in favor of UMP then LR candidates during several local and national elections that held ten years prior the Right and Center primary: 2007 and 2012 presidential elections; 2007 and 2012 legislative elections; 2009 and 2014 European elections; 2010 and 2015 regional elections; 2008 and 2014 municipal elections. To calculate the LR electorate mobilization rate, we look at UMP and LR average vote share over the 2007-2016 period relative to the turnout rate. For instance, if in one department, the mean vote share for LR is 23.7%, and the mean turnout rate is 67.4%, then the LR electorate's mobilization index is 23.7/67.4=0.35.

As our dependent variables – the scores of the six LR candidates to 2016 primary – consist of six interrelated vote shares at the department level, we are not able to conduct linear regressions. As King and Katz (1999) pointed at, multiparty or multicandidate electoral data are defined by two characteristics: each vote share falls in the [0;100] (or [0;1]) interval, and the set of all proportions in a given constituency sum to one. A first problematic issue arises because OLS regression normally requires an unbounded dependent variable. A second issue concerns the impossibility to run different models separately – one for each vote share – because this solution would lead to ignoring that vote shares are dependent and that the error terms of each regression are potentially correlated. To solve these issues, we turned to the solution proposed by Tomz, Tucker, and Wittenberg (2002), and used by Arzheimer and Evans (2010) or Johnston et al. (2016). This solution consists in implementing our model using Seemingly Unrelated Regression (SUR). SUR allows us to estimate a set of classical regressions in a single large linear model simultaneously and to take into account the correlation of errors across equations, generating accurate estimates and standard errors (Greene, 2003). The solution proposed by Tomz et al. (2002) consists of a three-step procedure, that first step consists of log-transforming the dependent variable to remove the

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[9] This comes from the survey carried out by Ifop in 2010 entitled "Catholicism in France". We would like to thank Jérôme Fourquet for agreeing to give us the data from this survey, which measures the percentage of Catholics (churchgoers or not) in each department of metropolitan France.

boundary issue. To calculate the ratios, we took the abstention rate arbitrarily as the reference category. For instance, in the department of Hérault, the scores for François Fillon and Alain Juppé were respectively 44.9% and 23.9%, while the abstention rate was 91.1%. Therefore, the log-ratio for François Fillon is ln(44.9/91.1)= -0.71 and the log-ratio for Alain Juppé is ln(23.9/91.1)= -1.35. In a second time, SUR is run. In a third time, we apply a reverse log-transformation to parameter estimates to interpret them on the original scale[10].

To assess the relative contribution of our three independent variables, we run a series of increasingly complex nested models, then perform model comparisons using Likelihood ratio test, R-square, Akaike Information Criterion (AIC) and Bayesian Information Criterion (BIC). Our analyses are realized with the "systemfit" package implemented in R (Henningsen and Hamann, 2007).

4. Results

Table 1 presents a series of measures allowing to compare the wellness of fit of increasingly complex nested models, as well as the contribution to the model of each block of variables. Departments' characteristics explain a substantive part of variance for scores of Nathalie Kosciusko Morizet (58%) and, to a lesser extent, for scores of Alain Juppé (21%). For other candidates, the contribution of control variables is negligible (3% of explained variance for Nicolas Sarkozy, and around 10% for the other candidates).

For most candidates, the cubic form of distance provides better fit measures than linear, logarithmic, or quadratic functions. The only exception is Nicolas Sarkozy, for whose distance effects are captured by a quadratic function as well as by a cubic function. Looking at fit measures, we can make a distinction between favorites and outsiders. For favorite candidates, distance explains a substantive part of variance (52% for Fillon, 35% for Sarkozy, 31% for Juppé). For outsiders, distance explains only a small part of the variation of their scores, that we can estimate at around 10% (6% for Le Maire, 11% for Copé, 12% for Kosciusko-Morizet).

Once the distance is controlled, the administrative region only hardly contributes to our models. Nevertheless, while this contribution never exceeds 3% for the five other candidates, the part of Juppé scores explained by region variable is significantly higher (7%). Concerning the effect of "Sponsors", three patterns stand out from the analysis. First, for Kosciusko-Morizet, Fillon, and Juppé, the part of variance explained by sponsors never exceeds 3%. Second, for Sarkozy and Copé, this part is respectively 6% and 8%. Finally, "sponsors" contributes significantly to the explanation of Le Maire scores (21% of total variance). To summarize, friends and neighbors variables explain the main part of the spatial dispersion of scores for each candidate except for Nathalie Kosciusko Morizet (R-square= 0.11/0.67 = 16%).

Analysis of beta coefficients from our last models (Table 2) provides a deeper understanding of the determinants of vote shares at the department level. Alain Juppé and Nathalie Kosciusko-Morizet do better results in urban departments, while Bruno Le Maire reaches better scores in rural departments. Like Nicolas Sarkozy, he also reaches high scores in lower-class departments. Coefficients of variable "LR scores" show a positive and significant correlation for three candidates (Jean-François Copé, François Fillon, and Bruno Le Maire). In the case of Alain Juppé and Nathalie Kosciusko-Morizet, the non-significance of LR scores is another clue of the specificity of their electorates. In the case of Nicolas

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[10] Since our dependent variables are ratios, calculated taking the abstention rate as reference category, estimates should be read as relative effects.

Sarkozy, this similar result can be interpreted in the light of the good scores he obtained in departments where the French nationalist party – the Front National (FN) – usually performs well.

Coefficients of distance, region, and sponsors suggest that components of friends and neighbors effect operate differently according to candidates. The examination of coefficients for "distance" reveals two distinct patterns. The cubic term is significant for every candidate except for Nicolas Sarkozy. In his case, the effect of distance follows a quadratic function. Figures 1 to 6 show that his scores undergo a hardly perceptible decay until 171 kilometers from his stronghold[11]. At this point, the relation reverses, and Sarkozy's scores exponentially increase with distance. Sarkozy case corresponds with what we could call a reverse distance effect, a situation where the candidate does better in peripheral locations than in his stronghold. Many arguments can be mobilized to explain this surprising outcome. As we saw before, Sarkozy's roots with his stronghold at the time of the election are narrow since he did not hold any office in Hauts-de-Seine for almost ten years. Also, several areas of influence collide with each other within the Paris region: the distance between (centroids of) Hauts-de-Seine and Essone (Nathalie Kosciusko-Morizet's stronghold), Seine-et-Marne (Jean-François Copé) or Eure (Bruno Le Maire) is respectively of 21.46, 33.95, and 129.50 kilometers.

The second pattern concerns situations where candidates benefit from a stronghold effect. With variations across candidates, the effect of distance in this second pattern forms a cubic curve, with fluctuations revolving around two turning points, dividing the regression line into three segments: an exponential decrease of scores as a function of distance in the first segment; a slight surge of scores between the first and the second turning points, that is on the second segment; a continuous decrease of scores after the second inflection point. For our concerns, the main difference between candidates lies in the length of the first segment, namely the scope of distance-decay. We can make here a distinction between Alain Juppé, François Fillon, and to a lesser extent, Bruno Le Maire on the one hand and other candidates on the other hand, with a first inflection point estimated respectively at 377, 309 and 283 kilometers from strongholds for those three candidates, and at 204 and 188 kilometers in Jean-François Copé and Nathalie Kosciusko-Morizet cases. The decrease of scores on the third segment, clearly perceptible for each of these candidates except for Jean-François Copé and Alain Juppé, shows that they do worst on average in peripheral departments, where Nicolas Sarkozy, on the contrary, does better.

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[11] Turning points on distance curves are estimated by solving the derivative of the cubic function $f(y)=ax^3+bx^2+cx+d$ (where y is the predicted score of the candidate, x the distance to the stronghold department, a the coefficient of distance^3, b the coefficient of distance^2 and c the coefficient of distance, and d the intercept) when it equals 0, that is $f'(y)=3ax^2+2bx+c=0$. At this point, the derivative changes its sign and the curves reaches its local minimum, changing from decreasing to increasing.

Table 1. Nested models comparison – Seemingly Unrelated Regressions

Model	Ll (null)	Ll (model)	Df	Adj. R^2	AIC	BIC
Copé: Departments characteristics	-42.05	-36.79	91	0.06	85.58	100.90
Copé: Characteristics + Distance		-35.92	90	0.07	85.84	103.79
Copé: Characteristics + LogDistance		-33.93	90	0.11	81.87	99.82
Copé: Characteristics + Distance^2		-33.59	89	0.11	83.04	103.56
Copé: Characteristics + Distance^3		-29.57	88	0.17	77.14	100.22
Copé: Characteristics + Distance^3 + Region		-27.70	87	0.19	75.40	101.04
Copé: Characteristics + Distance^3 + Region + Sponsors		-22.22	86	0.27	66.44	94.65
Fillon: Departments characteristics	38.96	43.20	91	0.06	-74.41	-59.08
Fillon: Characteristics + Distance		58.36	90	0.29	-102.72	-84.77
Fillon: Characteristics + LogDistance		63.66	90	0.37	-113.31	-95.36
Fillon: Characteristics + Distance^2		58.09	89	0.28	-100.19	-79.68
Fillon: Characteristics + Distance^3		83.83	88	0.58	-149.65	-126.57
Fillon: Characteristics + Distance^3 + Region		88.04	87	0.61	-156.09	-130.45
Fillon: Characteristics + Distance^3 + Region + Sponsors		90.06	86	0.62	-158.12	-129.91
Juppé: Departments characteristics	6.10	18.84	91	0.21	-25.68	-10.36
Juppé: Characteristics + Distance		25.37	90	0.29	-36.73	-18.78
Juppé: Characteristics + LogDistance		37.28	90	0.45	-60.55	-42.60
Juppé: Characteristics + Distance^2		40.29	89	0.48	-64.59	-44.07
Juppé: Characteristics + Distance^3		44.99	88	0.52	-71.97	-48.89
Juppé: Characteristics + Distance^3 + Region		53.17	87	0.59	-86.35	-60.70
Juppé: Characteristics + Distance^3 + Region + Sponsors		57.41	86	0.62	-92.82	-64.62
Kosciusko-Morizet: Departments characteristics	-9.26	31.63	91	0.56	-51.26	-35.94
Kosciusko-Morizet : Characteristics + Distance		39.88	90	0.62	-65.75	-47.80
Kosciusko-Morizet : Characteristics + LogDistance		36.45	90	0.59	-58.90	-40.95
Kosciusko-Morizet : Characteristics + Distance^2		45.27	89	0.66	-74.54	-54.03
Kosciusko-Morizet : Characteristics + Distance^3		48.53	88	0.68	-79.06	-55.98
Kosciusko-Morizet: Characteristics + Distance^3 + Region		48.41	87	0.67	-76.82	-51.17
Kosciusko-Morizet: Characteristics + Distance^3 + Region + Sponsors		48.66	86	0.67	-75.31	-47.11

Le Maire: Departments characteristics	-38.14	-29.39	91	0.13	70.78	86.10
Le Maire: Characteristics + Distance		-29.56	90	0.12	73.13	91.08
Le Maire: Characteristics + LogDistance		-28.47	90	0.14	70.95	88.90
Le Maire: Characteristics + Distance^2		-29.32	89	0.11	74.64	95.16
Le Maire: Characteristics + Distance^3		-24.22	88	0.19	66.44	89.52
Le Maire: Characteristics + Distance^3 + Region		-23.31	87	0.20	66.62	92.27
Le Maire: Characteristics + Distance^3 + Region + Sponsors		-8.36	86	0.41	38.72	66.93
Sarkozy: Departments characteristics	-3.85	-2.69	91	0.03	17.38	32.71
Sarkozy: Characteristics + Distance		16.31	90	0.31	-18.62	-0.67
Sarkozy: Characteristics + LogDistance		2.64	90	0.08	8.73	26.68
Sarkozy: Characteristics + Distance^2		22.22	89	0.38	-28.44	-7.92
Sarkozy: Characteristics + Distance^3		22.53	88	0.38	-27.03	-3.95
Sarkozy: Characteristics + Distance^3 + Region		22.54	87	0.37	-25.08	0.56
Sarkozy: Characteristics + Distance^3 + Region + Sponsors		28.15	86	0.43	-34.30	-6.10

Signification codes : '***'0.001 '**' 0.01 '*' 0.05

Table 2. Seemingly Unrelated Regression measuring friends and neighbors effect on 2016 primary vote shares (department level) – Full model

|	Jean-François Copé	François Fillon	Alain Juppé	Nathalie Kosciusko-Morizet	Bruno Le Maire	Nicolas Sarkozy
Intercept	-5.9655*** (0.0450)	-0.7693*** (0.0141)	-1.3076*** (0.0218)	-3.7764*** (0.0222)	-3.7296*** (0.0409)	-1.5138*** (0.0272)
Rural departments	0.1084 (0.0574)	-0.0042 (0.0153)	-0.0693** (0.0205)	-0.1832*** (0.0254)	0.1560*** (0.0441)	0.0469 (0.0337)
Higher class departments	-0.0713 (0.0437)	-0.0052 (0.0119)	0.0340 (0.0182)	0.0310 (0.0196)	-0.0762* (0.0369)	-0.1000*** (0.0256)
LR scores	0.1293*** (0.0364)	0.0398*** (0.0109)	-0.0079 (0.0162)	0.0193 (0.0165)	0.1022*** (0.0299)	0.0326 (0.0212)

|						
Distance	1.3451** (0.4436)	-0.6110*** (0.1161)	-0.6387** (0.2073)	-0.2575 (0.1846)	0.1522 (0.3715)	1.6524*** (0.2679)
Distance^2	0.5668 (0.3737)	-0.2858** (0.1057)	0.4803** (0.1537)	-0.6249*** (0.1550)	-0.0932 (0.3418)	0.6595** (0.2320)
Distance^3	-0.9205* (0.3980)	-0.6648*** (0.1063)	-0.3037* (0.1381)	-0.8501*** (0.1706)	-0.9350** (0.3513)	-0.4372 (0.2458)
Region	0.5310* (0.2160)	0.1505** (0.0550)	0.2372*** (0.0554)	0.0253 (0.0851)	0.0400 (0.1850)	0.0869 (0.1213)
Sponsors	0.0051** (0.0018)	0.0013* (0.0006)	0.0020* (0.0008)	0.0001 (0.0007)	0.0087*** (0.0016)	0.0025** (0.0009)
R^2	0.34	0.65	0.66	0.70	0.46	0.49
RMSE	0.32	0.10	0.14	0.15	0.28	0.19

Dependent variables are log-ratios of candidates' scores contrasted by abstention rate (French department level).

Cell entries are unstandardized coefficients with standard errors in parentheses. Signification codes: '***' 0.001 '**' 0.01 '*' 0.05.

Interpretative framework for coefficients: The percent increase or decrease in the original-scaled dependent variable (scores contrasted by abstention rate, given by exponentiating the intercept then multiplying by 100) for every one-unit increase in an independent variable is given by exponentiating the coefficient, subtracting one from this number, and multiplying by 100. Because distance function was parametrized as orthogonal polynomials, coefficients for distance, distance^2, and distance^3 give the linear combinations between polynomials.

Figures 1 to 6. Effect of distance on candidates scores during the 1st round of the 2016 primary election (department level)

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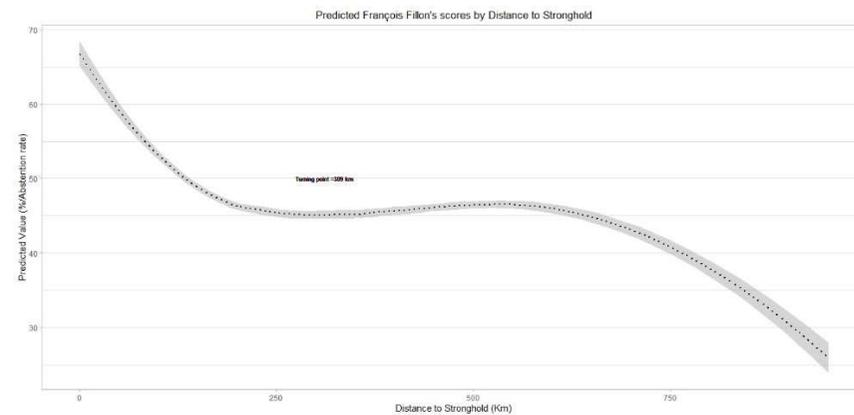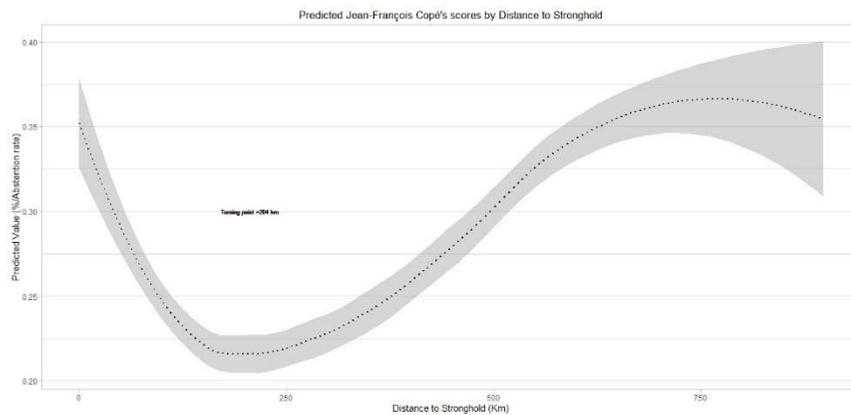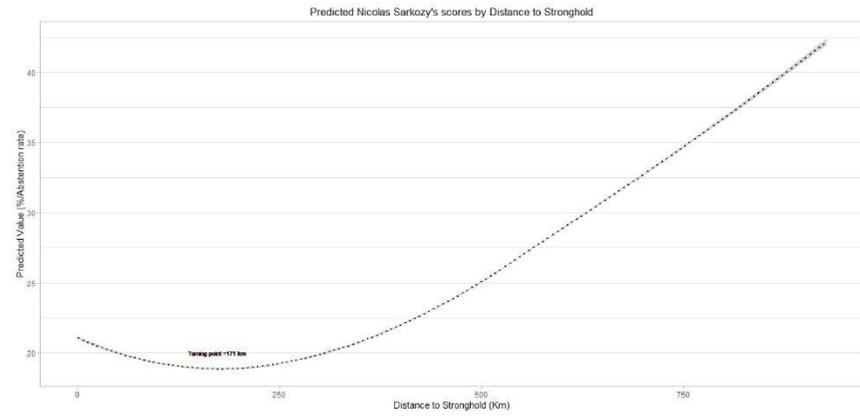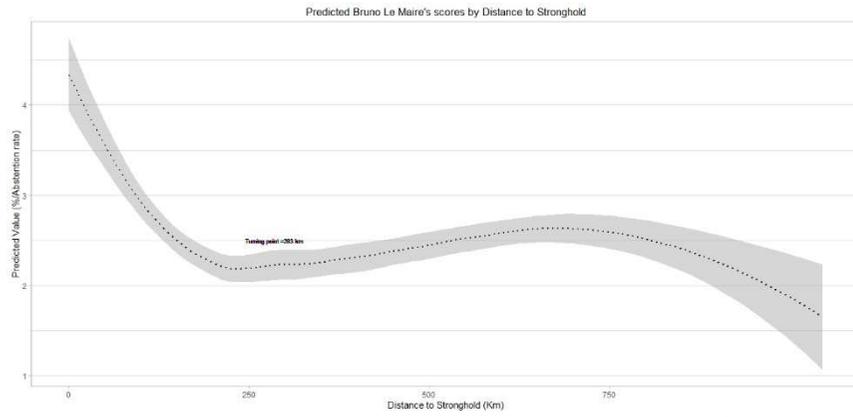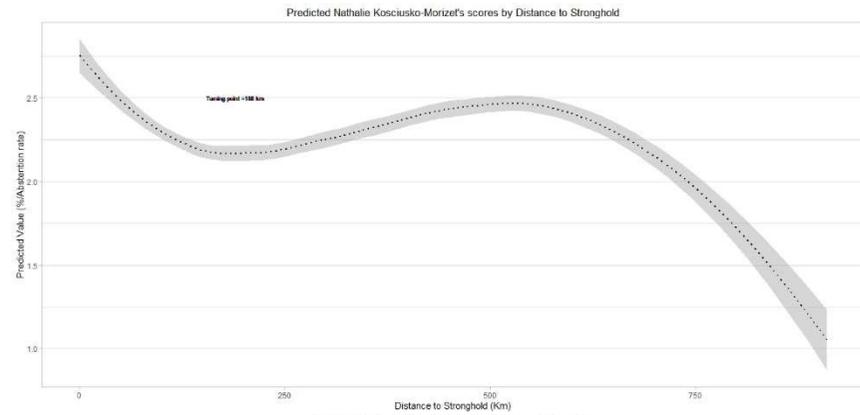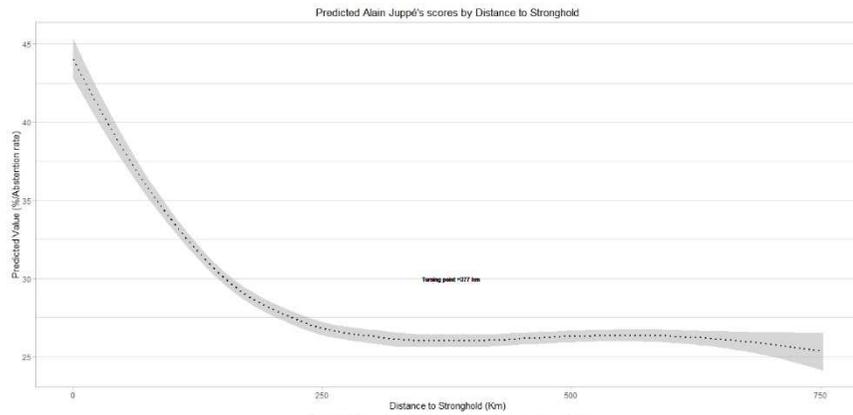
Distance effects are computed from Table 2 results. Grey shadows are confidence intervals

Once the distance is controlled, "Region" produces significant outcomes for three candidates, namely those with the deepest roots in their respective regions. The strong regional effect found for Jean-François Copé (an increase of 70.06% of his mean score in the region Ile-de-France) turns out to be a window-dressing and conceals significant intra-region disparities. The effect operates mainly in his stronghold department of Seine-et-Marne and, to a lesser extent, in a few other departments of Parisian suburbs like Seine-Saint-Denis or Val-de-Marne. However, the weak variations in his scores at the department level make interpreting the results challenging. On the contrary, Alain Juppé and François Fillon enjoy a "true" regional advantage, with an increase of their mean scores in their home-region of 26.14% and 16.24%, respectively.

"Sponsors" is significant for five out of the six candidates. Nathalie Kosciusko-Morizet is the only candidate for whom sponsors do not significantly impact vote shares. For other candidates, being supported by political friends produces significant results. Given coefficients displayed in Table 2, one percent increase in the part of sponsors supporting Bruno Le Maire in any department generates a 0.87% growth in his mean score. The growth in mean scores for one percent increase in sponsors is 0.51% for Jean-François Copé, 0.25% for Nicolas Sarkozy, 0.20% for Alain Juppé, and 0.13% for François Fillon. In sum, the effects of political friends at the department level stay marginal until candidates reach a significant part of sponsorships. A second observation is that the effect of sponsors is significantly stronger for outsiders than for leading candidates.

Does "Sponsors" interact with "Region"? To answer the question, we reproduced the regression models presented in Table 2, including an interaction term between these variables (Table 3). The answer is no for Alain Juppé and Nicolas Sarkozy. While this result is not surprising in the case of Nicolas Sarkozy, it is more intriguing concerning Alain Juppé as it shows that he still benefits from a regional effect even when "sponsors" is at its lowest level. In other words, region coefficient for Alain Juppé captures something else than a political friends effect. It might explain why Juppé's scores decay slower as a function of distance than for other candidates.

The answer is yes for Jean-François Copé, François Fillon, and Bruno Le Maire. For Copé and Le Maire, "sponsors" still produce effects even outside stronghold's region. In the case of Copé, including the interaction term makes "Region" non-significant. For Fillon, adding the interaction term results in a drop of significance for both "Region" and "Sponsors" coefficients. For him, sponsors effects are fully moderated by region: in his home region, a one percent increase in total sponsorships ends in a 0.41% increase in his mean score; outside his home region, this effect is almost infinitesimal (0.08%).

The interaction term provides a refined understanding of what lies behind region and sponsors effects. It reveals different configurations causing the geographical patterns that we could observe during this primary election. François Fillon invested a lot in his stronghold department, where his localness is well-recognized through a longstanding and continuous political experience. He benefited from reputation effects that surpass the administrative region of Pays-de-la-Loire and occur in a large north-west area. At the same time, he gained substantive votes in his home region by guaranteeing the support of a majority of political friends (89% of sponsorships in his favor within Sarthe).

Alain Juppé also clearly enjoyed a stronghold effect. However, in his case, this stronghold effect goes along with a substantial region effect: the presence of this region effect explains why the decay of his scores in Gironde's neighboring departments is less pronounced. Contrary to Fillon case, region effect for Alain Juppé is seemingly independent of political

friends effect. The part of sponsorships in his favor cannot explain the good scores made by Alain Juppé in his home region. One hypothesis could be that he benefited from the prestige attached to his position as mayor of Bordeaux, the principal city of the region. It is probably the main difference between Alain Juppé and François Fillon. While the former is firmly rooted in one of the main French cities, the latter is so in a middle-sized city in a region dominated by the influence of Nantes (the seventh biggest French city, located in the department of Loire Atlantique). In a highly centralized country like France, the political influence of metropolises should not be underestimated insofar as they generally concentrate most of the political and administrative resources of a given region.

Table 3. Sponsors effect moderated by region – SUR, full model

	Jean-François Copé	*François Fillon*	*Alain Juppé*	*Nathalie Kosciusko-Morizet*	*Bruno Le Maire*	*Nicolas Sarkozy*
Region	-0.1366 (0.2399)	0.0171 (0.0885)	0.2967** (0.0880)	0.0423 (0.0890)	-0.1716 (0.2067)	0.1633 (0.1470)
Sponsors	0.0039* (0.0016)	0.0008 (0.0006)	0.0023* (0.0009)	0.0002 (0.0007)	0.0074*** (0.0017)	0.0026** (0.0009)
Sponsors × Region	0.0526*** (0.0105)	0.0033* (0.0016)	-0.0017 (0.0021)	0.0005 (0.0028)	0.0110* (0.0050)	-0.0053 (0.0085)
R^2	0.44	0.65	0.66	0.70	0.49	0.49

Cell entries are unstandardized coefficients with standard errors in parentheses. Signification codes: '***' 0.001 '**' 0.01 '*' 0.05.

5. Discussion and conclusion

With this article, we aimed first to interrogate the concept of friends and neighbors. Regularly mobilized by political geography literature, this concept is too often limited to a personal reputation dimension based on the idea that people sometimes vote for those who share their roots. However, the home state advantage observed in many works may hide other phenomena, like information spreading through personal contacts, or candidate ability to mobilize partisan resources and local representatives to gain votes. Additionally, we operated a change in the definition of what a home constituency is, shifting from a conception based on candidates' origin to a conception based on candidates' political strongholds. Applying this framework to the case of the 2016 French Right and Center primary, we tried to isolate the effects of the three dimensions of friends and neighbors voting to explain the spatial distribution of votes at the French department level. We based our analysis on three main dependent variables. First, we used the distance between each candidate's stronghold and other departments, measured from departments' centroids, and modelized as a cubic function. Second, we distinguished between departments located within administrative regions of strongholds and others. We finally identified candidates' supportive networks across all the French territory using a random list of sponsorships that candidates had to present to run at the election.

The present article brings out three main findings. First and foremost, our results demonstrate that the three mechanisms cumulatively explain the spatial distribution of votes for the different candidates for the primary election. On average, and after controlling for other

variables, candidates do better results in departments where they have accomplished the most significant part of their political careers as the examination of "distance" effects shows. This result is consistent with the home state advantage hypothesis. Nevertheless, our results show that the local advantage is not limited to the sole stronghold department. For all candidates except for Nicolas Sarkozy, the effect of distance only fades beyond an average perimeter of 272 kilometers from the stronghold. This result emphasizes the existence of a contiguity effect: candidates still perform better in their stronghold's neighboring departments. As previous works already suggested, this means that other factors than personal contacts between candidates and voters, including person-to-person contacts or media, also explain the spatial bias in the spreading of political information. Finally, for five out of the six candidates, the support of local representatives matters. As coefficients displayed in Table 2 suggest, for three out of these candidates – Jean-François Copé, François Fillon, and Bruno Le Maire – the role of political sponsors can be associated with a region effect.

Moreover, all candidates but Nicolas Sarkozy benefit from the support of a significant part of sponsors in their strongholds: 32% of sponsors in Seine-et-Marne for Jean-François Copé, 89% in Sarthe for François Fillon, 43% in Gironde for Alain Juppé, 48% in Essonne for Nathalie Kosciusko-Morizet, and 73% in Eure for Bruno Le Maire. In other words, our results suggest that supports among local representatives at least partly explain the spatial concentration of votes in favor of a candidate around his stronghold. Nevertheless, the analysis reveals that sponsors effect is also partly independent from friends and neighbors, and helps to explain some geographical patterns away from candidates' stronghold.

Second, our results suggest that the three effects assessed in this article are hierarchized. Distance explains the most substantial amount of scores variation at the department level (24.5% on average), while sponsors (6.5%) and above all region (2.2%) only hardly contribute to our models. This result is significant because it indicates that the bias in the spatial distribution of information about candidates during the 2016 primary election primarily resided in something else than in support of local representatives. According to literature, and considering our results, we can posit that this "something else" lies in identification processes toward a candidate or a territory, or contagion effects transmitted through the endeavor of media or neighboring communities. Unexpectedly, this does not seem dependent on administrative borders. This negligible impact of the region may have something to do with candidates characteristics: none of them held regional office at the time of the election, nor even a few years before; they were known nationwide, which might have attenuated, once distance was controlled, administrative differences between departments; most of them were or had been mayor of a middle-sized city, which might have limited their access to administrative and political resources at the regional level: the only candidate for whom the region effect resists even after being moderated by sponsors in Alain Juppé, who was mayor of the central city in the administrative region where his stronghold was located.

  Third and finally, our results demonstrate that the three effects operate differently according to candidates. Besides the case of region effect, three lessons can be drawn from our results. First, distance effect seems to be increasing function of local anchoring: the deeper the political roots, the longer the distance-decay and the more distance explains the variation of scores at the department level. The cases of François Fillon and Alain Juppé and, at the other extreme, of Nicolas Sarkozy, illustrate this relation. Second, we found that distance-decay alleviates quicker for candidates from the Paris area than for others. In this regard, the effect

of distance might suffer from strongholds proximity and competition within the same territory, a result already highlighted by previous works (Put, von Schoultz, and Isotalo, 2020). Third, sponsors effect is stronger for small candidates – except for Nathalie Kosciusko-Morizet – and Nicolas Sarkozy. Political friends appear to be a means to alleviate the absence of a strong – namely ancient and continuous – local anchorage by reinforcing a dominant but fragile position in the home-department or by expanding their strength zones to other parts of the territory. However, the inoperative impact of sponsors in the case of Nathalie Kosciusko-Morizet reminds that the position within the party seems particularly decisive for political friends to be effective.

Our findings have several implications. Our study gives a refined definition of friends and neighbors effect, providing arguments for the effectiveness of the three components described in the introduction of this article. Nevertheless, while it is unlikely that direct personal contacts between candidates and voters explain significantly why candidates make better scores around their stronghold, and while the role of political supports seems secondary, our results clearly evidence that the biases in the spatial spreading of votes are mainly explained by the effect of information vehicles. Previous studies emphasized the role of local media, personal networks, or neighboring communities. The results presented in this article undoubtedly call for delving further into this issue.

Because we obtained significant results by starting from candidates' political roots and concept of stronghold, we showed that friends and neighbors effect does not amount to politically irrational behaviors. As a consequence, our results suggest that preference for a local candidate is not only explained by common origins but by candidates' ability to develop a local career and to invest a territory through political action, institutional resources, and networks.

Despite these elements, our study has several limitations. First, because this study is cross-sectional, we cannot conclude that the correlations we observed are causal mechanisms. Second, because we worked on aggregated data, we cannot infer the individual mechanisms operating behind friends and neighbors effect from our results. To say it clearly, our study highlighted the factors of the spatial dispersion of vote shares at the department level during the 2016 French presidential primary. A further step would be to confirm our results with individual-level data, or with multilevel data. Studying the friends and neighbors effects at a refined scale would enable a more accurate measurement of how candidates' local reputation affects the electorate.

First and foremost, it would help to determine more precisely which factors explain distance-decay. A second issue would be to explain why distance-decay suddenly stops at some point. A third issue would be to reassess the relationship between geographic and administrative distance. By focusing on the distance between departments centroids, we necessarily affected the outcome of this study. We found that for most candidates, the distance-decay was hardly the same, whether it is within the same administrative region than stronghold or not. This result does not mean that the administrative distance plays any relevant part in the spreading of local effects. Future research should determine if distance-decay depends on other administrative borders such as city, county, or department.

We did not assess if sponsors' positions nor if the structure of sponsorships had an impact on the outcomes of the election. There are reasons to think that the ability of political friends to mobilize the electorate depends on several factors such as previous experience, the type of

geographical anchorage – rural or urban – or the type of office. This argument might be particularly decisive insofar as the logic of "recruitment" of political sponsors strongly varies across candidates. In our case, these logics mainly vary according sponsors' offices and political affiliation (Audemard and Gouard, 2019). Alain Juppé has recruited his sponsors principally among mayors (80.3% of his sponsors hold this office) while Nicolas Sarkozy and François Fillon have recruited more among local councilors. Along with Nathalie Kosciusko-Morizet, Alain Juppé is the only other candidate who had a majority of MP sponsorships from Senators (68.1%), as compared to a mean of 38% for the four other candidates. Above all, François Fillon, Alain Juppé, and Nicolas Sarkozy benefited from a much larger number of sponsorships from members of parliament, respectively 78, 69, and 94.

In contrast, other candidates only counted 25, 23, and 33 sponsorships of this kind. Almost two-thirds of Nicolas Sarkozy's sponsors (64.8%) were LR members, as were 58.2% of François Fillon's, but only slightly more than a third of Alain Juppé's sponsors were members of the main French right party. Therefore, before the beginning of the campaign, we observed a clear hierarchy between these two groups of candidates. More generally, political sponsorships do not limit to local representatives. Because we did not consider the mobilizing role of associations, pressure groups, or other kinds of formal networks, our results might underestimate the impact of political friends. Further studies should take these elements into account to assess more accurately the contribution of this variable to friends and neighbors effect.

Although we believe the conclusions drawn from our results are not limited to France, we have to consider the specificities of the French political context and, more specifically, of the context of the 2016 primary election. The first-past-the-post voting system added with candidates' characteristics might explain the relevance of our analytical framework. Our results thus encourage the replication of similar studies in different national and electoral contexts.

Despite these limitations, our study represents a modest but relevant contribution to the study of the friends and neighbors effect. The results presented in this article are incentives to take more systematically into consideration the political career and resources of candidates when assessing the spatial distribution of vote shares. From this perspective, our article brings new evidence about the complexity of mechanisms behind the local production of votes.

References

Ames, B. (1994). The Reverse Coattails Effect: Local Party Organization in the 1989 Brazilian Presidential Election. *American Political Science Review*, 88(1), 95-111.

Ansolabehere, S., Snyder., and J. M., Stewart., C. (2000). Old Voters, New Voters, and the Personal Vote: Using Redistricting to Measure the Incumbency Advantage. *American Journal of Political Science*, 44(1), 17-34.

Ansolabehere, S., and Snyder., J. M. (2002). The incumbency advantage in U.S. elections: An analysis of state and federal offices, 1942-2000. *Election Law Journal*, 1(3), 315-338.

Arzheimer, K. and Evans, J. (2012). Geolocation and voting: Candidate-voter distance effects on party choice in the 2010 UK general election in England. *Political Geography*, 31(5), 301-310.

Arzheimer, K. and Evans, J. (2010). Bread and butter à la française: Multiparty forecasts of the French legislative vote (1981–2007). *International Journal of Forecasting*, 26(1), 19-31.

Audemard J. and Gouard D. (2019). Mobilisation de ressources partisanes et effet d'amitié locale lors de la primaire de la droite et du centre. In R. Lefebvre and E. Treille, eds. *Les primaires ouvertes. Un nouveau standard international ?* Villeneuve-d'Ascq: Presses du Septentrion.

Audemard, J. and Gouard, D. (2014). Les primaires citoyennes d'octobre 2011. Entre logique censitaire et influences partisanes locales. *Revue française de science politique*, 64(5), 955-972.

Baumann, Z.D., Winburn, J., Russo, S.J., and Islam, M.S. (2020). What Are Friends for? The Effect of Geographic Proximity on Primary Turnout in Gubernatorial Elections. *Political Research Quarterly*, first published online, https://doi.org/10.1177/1065912920906202.

Blais, A., Gidengil, E., Dobrzynska, A., Nevitte, N., and Nadeau, R. (2003). Does the Local Candidate Matter? Candidate Effects in the Canadian Election of 2000. *Canadian Journal of Political Science*, 36(3), 657-664.

Bowler, S., Donovan, T., and Snipp, J. (1993). Local Sources of Information and Voter Choice in State Elections: Microlevel Foundations of the "Friends and Neighbors" Effect. *American Politics Research*, 21(4), 473-489.

Braud, P. (2002). *L'enjeu de la personnalité dans le scrutin présidentiel*. Paris: CEVIPOF.

Brouard, S., Costa, O., Kerrouche, E., and Schnatterer, T. (2013). Why do French MPs Focus More on Constituency Work than on Parliamentary Work? *The Journal of Legislative Studies*, 19(2), 141-159.

Brouard, S., and Kerrouche, E. (2013). L'effet candidat lors des élections parlementaires. L'exemple des élections législatives 2012 en France. *Revue Française de Science Politique*, 63(6), 1113-1136.

Bussi, M. and Freire-Diaz, S. (2012). Les nouvelles spatialités des comportements électoraux français. L'exemple des élections présidentielles 1981-1995. *Cybergeo : European Journal of Geography* [Online], Current issues, Presidential Election, France, Online since 16 April 2002, connection on 11 June 2018, Available at: http://cybergeo.revues.org /4136.

Cain, B., Ferejohn, J., and Fiorina, M. (1987). *The Personal Vote. Constituency Service and Electoral Independence*. Cambridge: Harvard University Press.

Campbell, R., Cowley, P., Vivyan, N., and Wagner, N. (2019). Why Friends and Neighbors? Explaining the Electoral Appeal of Local Roots. *The Journal of Politics*, 81(3), 937-951.

Campbell, A., Converse, P. E., Miller, W. E., and Stokes, D. E. (1960). *The American voter*. New York: Wiley.

Carey, J.M., and Shugart, M.S. (1995). Incentives to Cultivate a Personal Vote: a Rank Ordering of Electoral Formulas. *Electoral Studies*, 14(4), 417-439.

Cox, K.R. (1969). The voting decision in a spatial context. *Progress in Geography*, 1, 81-117.

Erikson, R.S. (1971). The Advantage of Incumbency in Congressional Elections. *Polity*, 3(3), 395-405.

Evans, J., Arzheimer, K., Campbell, R., and Cowley, P. (2017) Candidate localness and voter choice in the 2015 General Election in England. *Political Geography*, 59, 61-71.

Fiva, J. H., and Smith, D. M. (2017). Local Candidates and Voter Mobilization: Evidence from Historical Two-Round Elections in Norway. *Electoral Studies*, 45, 130-140.

Fourquet, J. (2011). *Géographie électorale des primaires socialistes*. Paris: Fondation Jean Jaurès, 113. Available at: https://jean-jaures.org/nos-productions/geographie-electorale-des-primaires-socialistes.

Fourquet, J. and Le Bras, H. (2017). *La guerre des trois. La primaire de la droite et du centre*. Paris: Fondation Jean Jaurès. Available at: https://jean-jaures.org/nos-productions/la-guerre-des-trois-la-primaire-de-la-droite-et-du-centre

Garand, J. (1988). Localism and regionalism in presidential elections: is there a home-state or regional advantage? *Western Political Quarterly*, 41(1), pp. 85–103.

Gerber, A.S., Green, D.P., and Larimer, C.W. (2008). Social Pressure and Voter Turnout: Evidence from a Large-Scale Field Experiment. *American Political Science Review*, 102(1), 33-48.

Gimpel, J. G., Lee, F. E., and Thorpe, R. U. (2011). The wellsprings of candidate emergence: Geographic origins of statewide candidacies in the United States. *Political Geography*, 30(1), 25-37.

Gimpel, J. G., Karnes, K., McTague, J. and Pearson-Merkowitz, S. (2008). Distance-decay in the political geography of friends-and-neighbors voting. *Political Geography*, 27(2), 231-252.

Górecki, M. A. and Marsh, M. (2014). A decline of 'friends and neighbours voting' in Ireland? Local candidate effects in the 2011 Irish 'earthquake election'. *Political Geography*, 41, 11-20.

Górecki, M. A. and Marsh, M. (2012). Not just 'friends and neighbours': Canvassing, Geographic Proximity and Voter Choice. *European Journal of Political Research*, 51(5), 563-582.

Greene, W. (2003). *Econometric analysis*. Upper Saddle River: Prentice Hall.

Henningsen, A., and Hamann, J.D. (2007). systemfit: A Package for Estimating Systems of Simultaneous Equations in R. *Journal of Statistical Software*, 23(4), 1-40.

Huckfeldt, R. (1986). *Politics in Context: Assimilation and Conflict in Urban Neighborhood*. New-York: Agathon Press.

Johnston, R., Wickham-Jones, M., Pattie, C., Cutts, D. and Pemberton, H. (2016) Friends and neighbours voting revisited: The geography of support for candidates to lead the UK's Labour party. *Political Geography*, 55. 1-9

Johnston, R. and Pattie, C. (2006). *Putting Voters in their Place: Geography and Elections in Great Britain*. New-York: Oxford University Press.

Johnston, R. (1974). Local Effects in Voting at A Local Election. *Annals of the Association of American Geographers*, 64(3), 418-429.

Katz, J.N., and King, G. (1999). A Statistical Model for Multiparty Data. *American Political Science Review*, 93(1), 15-32.

Keefer, P. and Khemani, S. (2009). When Do Legislators Pass on Pork? The Role of Political Parties in Determining Legislator Effort. *American Political Science Review*, 103(1), 99-112.

Key, V. O. (1949). *Southern politics*. New York: Random House.

King, G. (1991). Constituency Service and Incumbency Advantage. *British Journal of Political Science*, 21(1), 119-128.

Lancaster, T.D. and Patterson, W.D. (1990). Comparative Pork Barrel Politics: Perceptions from the West German Bundestag. *Comparative Political Studies*, 22(4), 458-477.

Lang, C., and Pearson-Merkowitz, S. (2015). Partisan Sorting in the United States, 1972-2012: New Evidence from a Dynamic Analysis. *Political Geography*, 48, 119-129.

Lazarsfeld, P. F., Berelson, B., & Gaudet, H. (1944). *The people's choice*. New-York: Duell, Sloan & Pearce.

Lewis-Beck, M. S. and Rice, T. W. (1983). Localism in Presidential Elections: The Home State Advantage. *American Journal of Political Science*, 27(3), 548-556.

Lord, J.H.G., Petrie, A.J., Whitehead, L.A. (1968). Political Change in Rural France: The 1967 Election in a Communist Stronghold. *Political Studies*, 16(2), 153-176.

Mayhew, D. (1974). *Congress: The Electoral Connection*. New-Haven, CT: Yale University Press.

Meredith, M. (2013). Exploiting Friends-and-Neighbors to Estimate Coattail Effects. *American Political Science Review*, 107(04), 742–765.

Miller, W. E. (1955). Presidential Coattails: A Study in Political Myth and Methodology. *Public Opinion Quarterly*, 19(4), 353-368.

Miller, W. L. (1977). *Electoral Dynamics in Britain since 1918*. London: The McMillan Press.

Nickerson, D.W. (2008). Is Voting Contagious? Evidence from Two Field Experiments. *American Political Science Review*, 102(1), 49-57.

Oberholzer-Gee, F. and Waldfogel, J. (2009). Media markets and localism: Does local news en Espanol boost Hispanic voter turnout? *American Economic Review*, 99(5), 2120-2128.

Panagopoulos, C., and Bailey, K. (2019). "Friends-and-Neighbors" Mobilization: A Field Experimental Replication and Extension. *Journal of Experimental Political Science*, 1-14.

Panagopoulos, C., Leighley, J. E., and Hamel, B. T. (2017). Are Voters Mobilized by a "Friend-and-Neighbor" on the Ballot? Evidence from a Field Experiment. *Political Behavior*, 39(4), 865-882.

Pattie, C. and Johnston, R. (2001). Talk as a political context: conversation and electoral change in British elections, 1992–1997. *Electoral Studies*, 20(1), 17-40.

Prior, M. (2006). The Incumbent in the Living Room:The Rise of Television and the Incumbency Advantage in U.S.House Elections. *The Journal of Politics*, 68(3), 657-673.

Put, G-J., von Schoultz, A., and Isotalo, V. (2020). Fighting over friends and neighbors: The effect of inter-candidate geographic distance on intra-party competition. *Political Geography*, 81, https://doi.org/10.1016/j.polgeo.2020.102219.

Put, G-J and Maddens, B. (2015). The effect of municipality size and local office on the electoral success of Belgian/Flemish election candidates: a multilevel analysis. *Government and Opposition*, 50(4), 607-628.

Putnam, R. (1976). *The comparative study of political elites*. Englewood Cliffs, NJ: Prentice Hall

Putnam, R. (1966). Political attitudes and the local community. *American Political Science Review*, 60(3), pp. 640–654.

Reynolds, D.R. (1969). A 'friends and neighbors' voting model as a spatial interaction model for electoral geography. In K.R. Cox and R.G. Golledge, eds. *Behavioral problems in geography: A symposium*, Evanston: Northwestern University Press, 81–100.

Rice, T. W., and Macht, A. A. (1987a). The hometown advantage: Mobilization or conversion? *Political Behavior*, 9(3), pp. 257–262.

Rice, T. W., and Macht, A. A. (1987b). Friends and Neighbors Voting in Statewide General Elections. *American Journal of Political Science*, 31(2), pp. 448–452.

Rüdig, W., Sajuria, J., Hudson, J., and Collignon, S. (2016). Is the "local candidate" advantage a myth? analysing the effects of localism in the 2015 UK general election. *Paper presented at the EPOP Conference 2016*.

Shugart, M.S., Valdini, M.E., and Suominen, K. (2005). Looking for Locals: Voter Information Demands and Personal Vote-Earning Attributes of Legislators under Proportional Representation. *American Journal of Political Science*, 49(2), 437-449.

Tatalovich, R. (1975). "Friends and Neighbors" Voting: Mississippi, 1943–73. *The Journal of Politics*, 37(3), pp. 807–814.

Tavits, M. (2010). Effect of Local Ties On Electoral Success and Parliamentary Behaviour: The Case of Estonia. *Party Politics*, 16(2), 215-235.

Thijssen, P. (2013). Are parties stimulating candidate-centred voting? The case of the Belgian district council elections 2000–2006. *Acta Politica*, 48, 144-166.

Tomz, M., Tucker, J., and Wittenberg, J. (2002). An easy and accurate regression model for multiparty electoral data. *Political Analysis*, 10(1), 66-83.

Trounstine, J. (2011). Evidence of a Local Incumbency Advantage. *Legislative Studies Quarterly*, 36(2), 255-280.

Van Holsteyn, J.J.M., and Andeweg, R.B. (2010). Demoted leaders and exiled candidates: Disentangling party and person in the voter's mind. *Electoral Studies*, 29(4), 628-635.