

# Political Partisanship vs Turnout in Italy's 2016 Referendum

## **1. Introduction: second-order determinants of the referendum vote**

Over the last decades, concurrently with the increasing number of referendums held around the world since the 1970s (Qvortrup 2014), the issue of the determinants of referendum outcomes has attracted a growing number of scientific analyses.

Several authors writing on referendums have argued that *second-order* factors – i.e. factors beyond the issue-voting – exert a significant influence on voting. Political partisanship is commonly regarded as dominant among the second-order factors. However, as we intend to show, political partisanship meets with serious constraints, from a split in the party to the voters' dissatisfaction with the latter; and further aspects, such as the turnout, usually disregarded as determinants of the referendum outcome, could, on the contrary, play a role in it.

### **1.1 Political partisanship as a referendum determinant**

Pioneering studies of the early 1970s on the determinants of political choices focused on attitudes towards the European integration (Inglehart 1971), which started to be subject to referendums in 1972: these studies found political party preferences, as well as the voters' value priorities – especially *post-acquisitive* values – to predict support for supranational integration. Later studies added stronger evidence in favour of the relevance of partisanship. Marradi (1976) found that partisanship was the main

determinant of the attitudes towards the divorce bill that was the issue-voting of the Italian 1974 referendum. Pierce et al. (1983), analysing referendums held in Britain and Norway, found proportions of “Yes” from 70% to 93% among the supporters of “Yes” parties, and from 3% to 34% among supporters of “No” parties. Franklin et al. (1995) found a significant association between the preferred party position and voting at a Scottish referendum.

In 2000, Hug and Sciarini, analysing as many as 14 referendums on the EU integration held in nine West European countries, showed that the percentage of voters endorsing their party line was rather stable across the referendums, and ranged between 60% and 87%. Leduc’s analysis (2002) of referendums held in several world’s countries confirmed that pre-existing partisan attitudes are among the strongest clues as to the referendum voting choice. In turn, Hobolt (2006), analysing two Danish referendums, showed that party recommendations had a significant impact on voting, also when controlling for the voters’ education and their satisfaction over the government’s results. And party affiliation was also found to matter in the vote intention as to the 2016 Brexit referendum (Hobolt 2016; Clarke et al. 2016).

However, the partisanship-referendum-voting link is more intricate than it sounds. First of all, referendums are characterised by an issue-voting: usually issues, rather than parties, are at stake, and this can make partisanship relatively less influential than in political elections, as to the vote (Laycock 2013). Others argued, however, that when issue-voting and partisanship collide in a referendum, voters tend to favour partisanship (Selb et al. 2009). In the second place, the referendum political relevance interacts with political partisanship. When people perceive referendums as a “vote of confidence” for the government, the latter has an added incentive to put pressure on its supporters, who, in turn, tend to strongly follow their leaders’ recommendations

(Franklin et al. 1995). Hug and Sciarini (2000), however, found that opposition supporters could follow their party line even more stalwartly than government supporters.

### **1.2.1 Political partisanship constraints: intra-party dissent**

Political partisanship can be conditioned from within the party itself: a split in the party line hampers the effect of partisanship on the vote of party followers. Van der Eijk and Franklin (1996) found that contradictory messages from party leaders weaken the party ability to influence the voting of its electorate; Hug and Sciarini (2000) found that internal dissent affects the vote of both government and opposition followers. In the UK, the outcome of the Brexit referendum was affected by an internal split in both the Conservatives and Labour (Clarke et al. 2017; Alaimo and Solivetti 2019).

Concurrently, intra-party divisions are more likely when referendum issues are unconnected with the party fundamental stances. In the latter case, or whenever the political issue at stake is not clear or attractive enough to generate a wide consensus in the party electorate, political opponents have an interest in campaigning against, to bring about new voters. This may force the former party, in turn, to take a clear-cut stance on the issue, which could result in an intra-party dissent (Netjes and Binnema 2007).

### **1.2.2 Political partisanship constraints: voter dissatisfaction, the economic scenario and immigration**

Apart from intra-party divisions, other facts affect the relationship between partisanship and referendum voting. The voters' dissatisfaction with the ruling party is certainly among the most important aspects. The *referendum-voting model*, originally developed in reference to the U.S. elections (Simon 1989), considers all elections as “referendums” on the performance of the ruling party (in the U.S., the incumbent

presidential administration). If voters regard the government's performance as satisfactory, they vote in its favour; otherwise, they vote for the opposition (Remmer and Gélinau 2003). Within the government's performance scenario, economic growth plays a pivotal role, and as such, it has been one of the most studied subjects in political science research (Weschle 2014). If the economy is performing well, voters tend to support candidates and policies of the government in office: concurrently, the better off are more inclined to reward the government with their vote (Fiorina 1978; Atkeson and Partin 1995).

This model seems to work well also with referendums. Eichenberg and Dalton (1993), in analysing, in several West European countries, the voters' support for European integration, found a connection between the economy and the voters' decision, since positive economic settings boosted a favourable stance towards supranational integration. Franklin et al. (1995) posited that referendum voters, when urged to approve a treaty or reform supported by the government, will vote according to their feelings about the government's performance. Schneider and Weitsman (1996) promoted the hypothesis that referendum voters, when dissatisfied with the management of the economy by the ruling government, might punish the latter by rejecting the government proposal, while paying relatively little attention to the utility of the scheme they are called upon to vote.

Dardanelli (2005), focusing on the results of the two devolution referendums held in Scotland in 1979 and 1997, found that party identification was far from being the only determinant of the voting. A significant role was played by other issues as well, irrespective of party identification: in particular, by dissatisfaction with the ruling government. Qvortrup (2016) indirectly supported this point by suggesting that, since

to govern means to antagonize, the longer a government has been in office, the higher its chances of being defeated in a referendum.

Though economic conditions have been a privileged subject for studies focusing on the voters' satisfaction/dissatisfaction with the ruling government, other issues might influence this satisfaction/dissatisfaction. Foreign immigration control is one of these further issues. Anti-immigrant sentiments are strong predictors of support for populist parties (Lubbers et al. 2002), which, in turn, have been challenging all over Europe traditional parties and incumbent governments (Ricolfi 2017), accusing them of being against the idea of a "government by the people" (Ceccarini and Bordignon 2017).

Evidence about the political effects of hostility towards foreign immigrants primarily concerns referendums on EU's integration (de Vrees and Boomgaarden 2005; Hobolt, 2016). The topic came under the spotlight also because, in the UK's 2016 referendum, which preceded by a few months Italy's referendum, the migrant share was found to be territorially associated with voting in favour of leaving the EU (Arnorsson and Zoega 2018). It could be argued that in any referendum – regardless of its issue-voting – citizens might vote against the proposal of the ruling government to punish it for not being capable of controlling foreign immigration.

### **1.3 Turnout and referendum vote**

The turnout variance, as well, could play a role in the popular vote. The issue of turnout variance has been a major theme in the literature of political participation (Franklin 2001) since the earliest studies. According to this sizeable literature, turnout is affected by the type of voting, since the average turnout in referendums is markedly lower than in the political elections (Butler and Ranney 1994), but it varies more widely than it does in the latter (Flickinger and Studlar 2007). Turnout is also affected by the

dimensions of the voting (national/subnational), by the relevance of the political issue at stake (Flickinger and Studlar 2007), and by the presence of a quorum, since quorums tend to increase the level of abstention (Aguiar-Conraria and Magalhães 2010). Party stances, as well, are a rather obvious determinant of turnout: an indirect confirmation of this is the fact that many referendums held in Italy were declared void on account of quorum failure, but none when parties took a competitive stance over the referendum issue-voting (Uleri 2002).

All this primarily regards the turnout variance *between* referendums; there is, however, also a turnout variance *within* referendums, due to differences, between the various social groups, in turning out and vote; and this variance is shown right away by differences in the turnout often registered in the various territorial units. Partisanship, again, is important here because, in any type of poll, party followers are more likely to turn out than non-partisan citizens (Campbell et al. 1960: 96-97; Gray and Caul 2000). However, we know that turnout is also subject to other forces, territorially differentiated: to the educational level, to the command of political issues, and the level of wealth and civic commitment. The voter level of knowledge and awareness of the issue-voting is expected to determine the depth of his/her preferences in a referendum voting (Franklin 2001; Szczerbiak and Taggart 2004). Knowledge and awareness, on the other hand, are closely associated with the level of education, which is considered to be one of the strongest predictors of turnout (Smets and van Ham 2013), because it determines the skills to process politically relevant information. Then, if participating in the political decision process is driven not only by knowledge and skills but, more in general, by resources (Verba and Nie 1972; Brady et al. 1995), income would positively affect the turnout (Lassen 2005).

Moreover, the perception of voting as a civic duty could be a significant driver in the decision to turn out: research carried out in various countries demonstrated that citizens who regard voting as a duty have a substantially higher propensity to vote in political elections (Campbell et al. 1960: 106; Clarke et al. 2006; Blais and Galais 2016). As for referendums, the ethical determinant of voting was studied by Putnam et al. (1993), who described referendum turnouts as primarily a product of the level of civic values. Later studies of referendum turnouts (Kaniowski and Mueller 2006; Bowler and Donovan 2013) are in tune with these findings. Referendum voting, in contrast with the political elections vote, cannot be easily translated into a personal advantage for the voter by means of clientelist relations: therefore, the economic *rational choice* model (Downs 1957) – in particular, its focus on the personal gain from having one's preferred polling outcome – does not seem to be the best tool to explain the referendum turnouts. Unless, perhaps, we regard the voter's personal gain – postulated by the rational choice model – as something going beyond one's narrow, material self-interest and including, as well, the benefits that the voter receives from the continuance of democracy, the satisfaction from the very act of voting (Riker and Ordeshook 1968), from the *expressive* aspect of it (Crampton and Farrant 2004), or from a *duty to vote* belonging to a 'thin rationality' concept of self-interest (Goldfarb and Sigelman 2010).

Ultimately, there are many hypotheses about the social factors affecting the turnout variance *within* a referendum. Concurrently, we notice that most of the numerous abovementioned studies looked at the turnout as a *response* variable, i.e. as the effect of something else. There is, as well, a literature focused on the turnout impact on the vote (Lutz and Marsh 2007), but it has been primarily interested in political election results; by contrast, the impact of voter turnout on referendums is understudied

(Simon et al. 2018). This impact, however, could be relevant; pollsters have a hard time in predicting the vote precisely because they find it difficult to predict the turnout, owing to its many determinants (Becker et al. 2017). In the case of referendums, the turnout impact on the vote would be particularly relevant on account of the effect of the issue-voting on the popular mobilisation. Insofar as the turnout varies, the electoral results could vary as well: turnout variance within referendums, if accompanied by an association between turnout rate and the voters' decision, would affect the referendum results (Clarke et al. 2016; Simon et al. 2018). Apart from this, the study of the turnout variance within a referendum is expected to provide valuable information about the social forces that – alongside partisanship or in opposition to it – shape the popular vote.

#### **1.4 What we already know and what we intend to know**

Summarising the existing literature, we can state we know that referendum outcomes are affected by political partisanship, though the latter influence could be mitigated by the issue-voting, by party dissent and, even more clearly, by the voter dissatisfaction with government and political parties. In turn, the voter dissatisfaction is shaped by the macroeconomic scenario and the government's performance as to further popular issues such as, perhaps, immigration control. Turnout, as well, can determine referendum outcomes. Political partisanship is a determinant of turnout: however, turnout is also affected by other social and cultural factors, the distribution of which can be quite different across the territorial units. The referendum turnout seems to be indeed at the centre of a network of social forces: consequently, in any model meant to predict the voting choice, turnout would emerge as an *endogenous variable*. We notice, however, that while there is an extensive literature on the role of partisanship in

referendum voting, the comparison of the effects of partisanship with the effects of turnout has received relatively little attention.

All this considered, the present paper – using data concerning Italy’s 2016 referendum – intends to check the following hypotheses:

**H0.** *Second-order* factors are relevant also in the case of polls – such as referendums – revolving around a specific issue-voting: the precondition for our further investigation.

**H1.** Among the second-order factors, political partisanship plays a role; however, intra-party dissent and the voters’ dissatisfaction with the government can constrain this role, while other aspects would emerge as significant determinants of the referendum vote.

**H2.** In particular, the turnout role in shaping the referendum vote – a role still understudied – would be more relevant than expected; however, in order to correctly measure this role, it is necessary to disentangle the turnout impact from those of its own correlates, first of all, political partisanship: a problem largely unexplored. By doing so, it would be possible as well to contribute to the clarification of the problem of the turnout factors: we assume that there is a *quid* in the referendum turnouts that is not ascribable to their more predictable determinants, from partisanship to education and income.

The 2016 Italian referendum might offer a good opportunity to clarify these points. In the first place, the referendum outcome was largely uncertain right from the start, because the issue-voting did not generate a clear majority pro or against it, making this referendum particularly suitable for us to analyse the role played by the various second-order factors. In the second place, the 2016 referendum seems to have been a struggle for political hegemony: the debate revolving around backing or opposing the Government and its Prime Minister, rather than just around the specific issue-voting. In such a context, we expect political partisanship to deeply affect the

referendum outcome, without this implying that other second-order factors necessarily played a minor role. As for the economic scenario, we must bear in mind that the 2016 referendum took place after a long-lasting recession, set off by the 2007-2008 economic crisis, and that Italy had accumulated 60 months of recession, against its 30 months in the EU. Therefore, an impact of the crisis on the referendum represents a realistic hypothesis: the socio-economic fallout from the crisis generating a voter dissatisfaction with the government and, ultimately, a vote against the latter. Another source of voter dissatisfaction might have been the tumultuous rise in immigration registered in Italy over the last few years, and the problem of crime associated with immigration (Solivetti 2018), which new and successful populist parties blamed on the government. The 2016 referendum had nothing to do with immigration; however, we have seen that also the economic scenario has affected the results of referendums held on non-economic issues.

A leading role in the referendum outcome could have been played by the referendum turnout as well. The 2016 referendum registered a high turnout, i.e. 65.5% (68.5% as to voters in Italy): this turnout can hardly be ascribed to the fact that the referendum – being a constitutional one – did not require a quorum, and therefore the opponents of the proposal had no hope of making the poll void by not voting and forcing the quorum not to be met. It is true that the Italian non-constitutional referendums (which required a quorum) registered a mean turnout of only 52%, but the previous constitutional referendums of 2006 and 2001 had a turnout of respectively 52.5% and 34.1%. The 2016 referendum turnout was even higher than the turnout in the 2014 European elections in Italy (57.2%). However, we must notice that the variance in the 2016 referendum turnout was also high, with the cross-province turnout

ranging from 47% to 78% and its highest rates being associated with the Northern-Central provinces.

This variance in the turnout suggests, concurrently, the presence of large territorial differences in the country. Italy is indeed well known for being a country with larger regional differences than those found in other Western countries. These conspicuous differences – rooted in the country’s history, and concerning socio-economic conditions as well as cultural-political features – have fascinated social and political scientists (e.g. Banfield 1958; Bell 1979; Putnam et al. 1993). The analysis of these regional differences and the Mezzogiorno’s cultural features was instrumental in the development of concepts such as *amoral familism* and *social capital*, the latter being a dominant focus of contemporary socio-political research (Coleman 1988; Putnam et al. 1993; Fukuyama 1995; Putnam 2000). Ultimately, Italy is an ideal context for analysing the role in voting played by territorial differences in both political partisanship and other determinants: within one country, it is possible to study differences that are usually found only between different countries.

## **2. Italy’s 2016 Referendum: a few facts**

A constitutional referendum was held in Italy on December the 4th, 2016. Citizens were called upon to vote on a constitutional reform, put forward by the Italian Government and its Prime Minister, Mr Matteo Renzi. The reform – already repeatedly approved by the Senate and the Chamber – intended, first of all, to put an end to Italy’s perfectly symmetrical bicameral legislature by reducing the role of the Senate (which would have been mostly consultative) and the number of Senators. In the second place, the reform intended to abolish the National Council for Economics and Labour, a consultative assembly of representatives of the economic, the social, and the legal

fields, and, lastly, to remove from the Constitution the second-level administrative divisions, i.e. the *provinces*.

The 2016 referendum was the third constitutional referendum in the history of the Italian Republic: the other two were held in 2001 and 2006. The 2006 referendum was promoted by the then Prime Minister, Mr Silvio Berlusconi, and its party, Forza Italia. It concerned a reform anticipating some of the changes later included in the 2016 reform – namely, a reorganisation of the parliament, the end of the symmetrical bicameral legislature and a reduction of the vast number of parliament members – while introducing an increase in the power of the Prime Minister. The Olive Tree List, foregoer of the Partito Democratico and then belonging to the opposition, campaigned against the 2006 referendum. In the referendum, the amending law was rejected, with 61.5% of the votes.

Ten years later, Government and supporters of the 2016 reform presented it as a significant change, aiming at lowering the cost of public institutions – thus reducing Italy's huge public debt, as demanded by the EU as well – and making the legislative procedures more efficient and speedier. However, some law scholars and politicians accused the reform of weakening democratic representation, and Mr Renzi of being authoritarian and anti-democratic for having proposed it. Faced with this criticism, the Prime Minister announced that he would hold a referendum to obtain the Italian people's consensus on the reform. Following this move, he was accused of turning the referendum into a plebiscite on his premiership (on the referendum premises, Pasquino and Valbruzzi 2017).

As the referendum campaign proceeded, the political parties took a stand on the reform. The main pro-reform party was the Prime Minister's Partito Democratico (then the largest party in Parliament), with its diminutive ally, Nuovo Centrodestra (NCD)

and the regional Südtiroler Volkspartei (SVP). Against the reform sided all the opposition parties: the populist, left-wing Cinque Stelle Movement (the second largest party), the liberal-conservative Forza Italia, led by former Prime Minister Mr Berlusconi, the populist right-wing Lega Nord, the jingoistic Fratelli d'Italia, and the hard-left Con Tsipras. The Partito Democratico's internal minority, already at odds with Mr Renzi, sided with the opposition, accusing the PM (who was as well secretary of the Partito Democratico) of not being in tune with the traditional socialist stances of his party, heir of the former Communist Party. The internal minority's members were joined by the main trade union, General Confederation of Labour (CGIL). The latter – a traditional ally of the former Communist Party and later of the Partito Democratico – had criticized the Prime Minister for having promoted a reform law of the labour market meant to make the latter more flexible, concurrently reducing employment protection: and, consequently, for his being, to mince no words, middle-of-the-road rather than leftist. Ultimately, the referendum campaign became a real political competition, and the referendum was presented as a vote in favour, or against, the Government and its Premier. Mr Renzi linked the fate of his government to the reform approval, promising he would step down if the voters did not back the proposal. Unsurprisingly, some scholars detected a relationship between the PM's approval rating and citizens' voting intentions (Colombo et al. 2016). During the months preceding the referendum, the popularity of Mr Renzi and his party fell in unison with the public support for the reform (Dennison and Draege 2016).

In the end, in the referendum, 59.1% of voters (including residents abroad) expressed themselves against the reform, making it null and void. In the wake of the “No” victory, Mr Renzi resigned as PM.

### **3. Research design**

Our research work is based on macro (i.e. aggregated) data. Micro data are particularly suitable to analyse individual motivations, feelings, and attitudes. As for referendum voting, however, the information provided by micro data regards only voting intention or, more rarely, the voter's alleged choice. We think that territorial macro data (e.g. data concerning electoral results across territorial units) possess the objectivity that cannot be found in micro data regarding the citizens' professed voting intentions.

Moreover, macro data take into account the structural features of the territorial context going beyond the individuals' characteristics.

#### **3.1 Observations**

Our observations concern Italy's second-level territorial units, namely its 106 provinces (2016 boundaries). At the 2016 referendum, each province registered on average 301,867 voters out of 440,764 electors (68.5%) and comprised on average 2843 sq. Km and 571,700 people. We also considered the larger, first-level territorial units, namely the 20 regions: each having on average 1,599,895 voters out of 2,336,047 electors.

#### **3.2 Measures**

Our main response variable is the percentage of votes against the reform ("No" votes) recorded in each province in the 2016 referendum. Our explanatory variables belong to various domains (Appendix: Summary statistics). First of all, we have variables belonging to the electoral domain. Among them, the turnout of the 2016 referendum and that of the abovementioned referendum held in 2006. Then, to measure the impact of partisanship, we used the votes for each of the Italian parties in the political elections closest to the 2016 referendum: namely, the 2014 European Parliament elections. All these data came from the Italian Ministry of Internal Affairs.

From these data, we calculated the total percentage of votes for the parties supporting the government during the 2016 referendum campaign, as well as the total percentage for the opposition. We thought it would have been interesting to measure also the relationship between Mr Renzi's approval rating and the referendum vote. However, no cross-province data about the approval rating for the PM and his party was available. And in any case, it would have been very difficult to say – as to the PM's approval rating and the citizens' opinion about the reform – which was the cause and which the effect, owing to the “personalisation” of the issue-voting. Something similar occurred with the UK's Brexit referendum because the approval rating for David Cameron, the UK's PM, went hand in hand with the consensus concerning the agreement he had concluded about the permanence of the UK in the European Union. Therefore, some scholars mentioned the declining public support for Mr Cameron as one of the possible determinants of the Brexit outcome (e.g. Hobolt 2016), but, in the statistical models explaining that outcome, they made use of standard political measures, such as partisanship or “trust in the politicians”.

Besides the “political” variables, in our research work we used variables meant to measure demographic, socio-economic and cultural differences across the provinces. These data came from the Italian National Statistical Office (Istat), and they refer to the referendum time (2016) unless stated otherwise. As for the demographic aspects, we considered the shares of specific age groups, such as people aged 50 to 75, because we expected older people to be more tradition-oriented (Nouvellet 2017). Then, we used the province chief town population, to check the impact of urbanisation, since urbanised areas are expected to favour reforms (Clem and Chodakiewicz 2004). We considered, as well, the *avoidable mortality* rate, regarding it as an indicator not only of development but also of the quality of life (Sen 1998). Next, the migrant share of

resident population: foreign immigrants could not participate in the referendum, but – as mentioned above – voters might have wanted to punish the government for their entry. However, we must remember that it has long been known (Robinson 1950) that immigrants are attracted to more developed areas (in our dataset, the correlation between the migrant share and local per capita income has  $r = 0.76$ ), and therefore any territorial association between the migrant share and referendum voting could be just the effect of the local development level. As for the economics, we considered several measures of affluence/deprivation: the occupation rate, per capita income, income variation, the share of poorer taxpayers, family patrimony, and cars per population. As for the social and cultural aspects, we measured education by the shares of people with a primary school diploma or less, and people holding a university degree. Then, volunteers per population and the local governments' degree of self-financing: we regarded the diffusion of volunteers as an indicator of civic commitment (Putnam et al. 1993), and the degree of self-financing as a measure of both local government efficiency and civic commitment (Istat 2017).

Lastly, we used dummies for each of the three main parts (macroregions) of the country, namely the Northern, the Central and the Southern ones.

### **3.3 Methods**

This paper intends to analyse the impact of both political partisanship, with all its constraints, and turnout, on the 2016 referendum outcome, by using a quantitative approach, primarily based on linear regression models. These models, however, expect the response variable to be normally distributed. In a referendum, the percentages of “No” or “Yes” in the territorial units could violate this requirement: they might easily fall within a range of values close to the minimum (0%) or the maximum (100%), leaving a long tail of values in the opposite direction.

A second problem associated with the nature of variables based on percentages or proportions is that such variables are structurally bounded: the “No” and “Yes” shares cannot be more than 100% and less than 0%. When the values of a bounded variable are close to the lower or the upper limit, by plotting a continuous predictor against the variable predicted values, a sigmoidal shape tends to emerge: i.e. the predicted values are flat at both ends, near 0% and 100%. In other words, they do not correspond to the linear shape expected from a linear model. Moreover, the predicted values could go beyond the structural limits of the original response variable, reaching incongruous levels higher than 100% or lower than 0%. We must be sure that this is not the case with the 2016 referendum results.

About the explanatory variables, in turn, we have already noticed the problem of disentangling the impact, on the referendum outcome, of turnout from the impact of partisanship and other determinants, probably intertwined with it. When two or more explanatory variables are mutually interacting, there is probably a further, omitted variable affecting all of them. Therefore, a correlation between the explanatory variables and disturbance of the endogenous variable cannot be excluded. An instrument would help, but a convincing instrument is hard to find, because, in the first place, it should predict the instrumented variable  $X$  (*inclusion restriction*),<sup>1</sup> without being caused by the latter; in the second place, it should impact significantly on  $Y$ ; in the third place, be independent of  $Y$  *given the covariate*  $X$  (*exclusion restriction*), which would imply that instrument and error are uncorrelated. The last condition is

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<sup>1</sup> Employing an instrumental variable, only that portion of the variations of  $X$  which can be explained by the instrument (and any other explanatory variable) is used to infer about  $Y$ . Notation for IV 2SLS models:

Structural Equation:  $Y = \alpha_0 + \beta_1 X_1 + \beta_2 X_2 + \varepsilon_1$   
 First Stage:  $X_1 = \alpha_1 + \beta_3 Z + \beta_4 X_2 + \varepsilon_2 \rightarrow \text{predict } \hat{X}_1, \hat{\varepsilon}_2$   
 Second Stage:  $Y = \alpha_2 + \beta_5 \hat{X}_1 + \beta_6 X_2 + (\varepsilon_3 + \beta_5 \hat{\varepsilon}_2)$   
 where  $X_1$  is endogenous,  $X_2$  exogenous and  $Z$  the instrument.

especially challenging because many potential IVs do not satisfy the *exclusion restriction*. The endogeneity test of Davidson and MacKinnon (1993: 241-242)<sup>2</sup> can provide a precise assessment of this point.

We regarded the 2006 turnout as a potentially good instrument for the 2016 turnout. If turnouts derive from structural features of the local society, they would be relatively time-stationary (Matusaka and Palda 1999): consequently, the 2006 turnout would predict the 2016 turnout. Then, again, the 2016 turnout cannot have been the cause of the 2006 turnout, because successive events cannot cause previous events. Correspondingly, partisanship around the time of the 2016 referendum could hardly be associable with an earlier event, such as the 2006 turnout. We must consider, apropos of this point, the substantial time gap between the two referendums, but also the fact that the political outcome of the 2006 referendum was opposite to that of the 2016 referendum: the 2016 referendum marked a defeat for the Partito Democratico, whereas the 2006 referendum was a victory for its foregoer, the Olive Tree. Also, the socio-economic conditions of 2016 cannot have been the cause of the 2006 turnout. In particular, the severe fallout from the 2007-2008 economic crisis cannot have been the cause of the 2006 turnout: and this allows us to break a possible causal chain in which economic conditions affect the turnout and the latter, in turn, the referendum outcome.

#### **4. Findings**

As mentioned above, our response variable might violate the requisite of being normally distributed. However, in the 2016 referendum, the cross-province mean of the “No” votes was 60.0%, and the median 60.3%, very close to the mean: which suggests

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<sup>2</sup> This test performs an OLS regression of the original Y on the original X, augmented by the residuals obtained from the first-stage regression of X on the instrument, and followed by an F-test for the hypothesis that the coefficient of the residuals is zero. Alternatively, regressing Y on X and the instrument, an F-test on the instrument coefficient would produce the same results.

the limited presence of abnormally distributed observations. Indeed, Figure 1 shows a skewness not particularly marked, plus a rather normal kurtosis. The normality test of D'Agostino et al. (1990) and Royston (1991) provided a more precise evaluation of these points: Table 1 shows that, for our response variable, we cannot reject the null of normality, either for kurtosis or skewness.

Next, we tackled the problem of possible non-linear, or incongruous predictions, deriving from the nature of our response variable, structurally bounded between 0 and 100. Fortunately, the cross-province percentages of “No” at the 2016 referendum did not get close to the lower or the upper limit, oscillating between 36.3% and 74.6%. Moreover, by predicting the “No” shares on a set of pivotal variables – including the 2016 referendum turnout, the percentages of votes gained by the main Italian parties at the 2014 elections, plus dummies for the macroregions – we obtained Figure 2, without any sigmoidal shape and with fitted values comprised between circa 40% and 74%. Figure 3 confirms the absence of the sigmoidal shape, showing that the residuals of the response variable, when plotted against the fitted values produced by the abovementioned regression model, do not present signs of heteroskedasticity. A test (Breusch and Pagan 1979; Cook and Weisberg 1983) provided further evidence, by showing that we cannot reject the null of constant variance of the residuals ( $\chi^2 = 0.54$ ,  $p = 0.461$ ), based on the hypothesis that the regression of residuals on fitted values has “t” value = 0.

**Figure 1 about here**

**Table 1 about here**

**Figure 2-3 about here**

Having overcome these preliminary problems, we can tackle the main questions of our research.

A simple comparison of the “No” shares in the 2016 referendum with the votes obtained by the Italian parties in the 2014 European elections shows that there is some association between political partisanship and referendum outcome. Table 2 summarises what occurred in the Italian regions (first-level administrative divisions): “No” won everywhere, bar the regions where the Partito Democratico, alone, or with its allies, had obtained a clear majority during the previous elections.

**Table 2 about here**

This first notion is confirmed at province-level: Table 3a shows that the votes gained by the parties in the 2014 elections tend to be correlated with the 2016 referendum outcome according to the parties’ position on the referendum issue-voting. This applies to both the government and the opposition camp, though not necessarily to all parties: e.g., the votes of NCD – a party belonging to the government coalition – are correlated with “No”.

**Table 3 about here**

A regression model of the referendum outcomes on the 2014 votes for the Partito Democratico and the entire government coalition explains c. 55% of the total variance of the outcomes (Table 4). This variance increases to 73% if we include in the model the votes of the main opposition parties, i.e. Cinque Stelle and Forza Italia.

**Table 4 about here**

However, the scenario is more complex than it seems. In the first place, the impact of partisanship was not unconditional: in all regions, the “Yes” percentage was lower than the votes gained just two years earlier by the government coalition campaigning for “Yes” (Table 2). In particular, even in regions regarded as the Partito Democratico bastions (Toscana, Emilia-Romagna), the “Yes” percentage was lower than the votes gained by that party alone. In the second place, the impact of the explanatory variables

on the referendum outcome often differed in the three main geographical parts of the country (Table 3a). For instance, while the Cinque Stelle's votes were correlated with "No" in all regions, the Partito Democratico's votes were very closely and negatively correlated with "No" only in Central Italy; and Forza Italia's votes were associated with "No" only in Northern and Central Italy.

Moreover, we notice that – cross-province – the parties votes were not the sole correlates of the referendum outcome: other territorial features have similar or closer correlations with it (Table 3a). Among these features, there are the avoidable mortality rate and the poorer taxpayers' share, positively associated with the "No" shares. A longer series of variables are *negatively* associated with the "No" shares: the occupation rate, per capita income, family patrimony, volunteers, self-financing degree and foreign immigrants. The latter variable close association with the "No" votes, however, evaporates when controlling for income and education. We notice a close negative correlation as well between the 2016 referendum turnout and the "No" votes: moreover, the responsiveness<sup>3</sup> of the "No" share to a change in the turnout ( $-0.943$ , reaching values  $< -1$  in the 95% confidence interval) is higher than that to a change in any other explanatory variable (e.g. it is only  $-0.680$  for the government parties votes).

As in the case of the partisanship variables, some of these further variables show substantial variations in their correlations with "No" in the three parts of the country. Moreover, the "South" is particularly correlated with higher percentages of "No".

All this suggests that we should include further predictors in our regression models. Indeed, a model including the parties' votes as well as the referendum turnout, some demographic and socio-economic variables (chief town population, population

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<sup>3</sup> Elasticity was calculated as average value of  $dy/dx * (x/y)$ .

50-75-year old, population with primary school diploma or less, family patrimony and volunteers) and some territorial dummies (Table 4, model 3) explains as much as 87% of the total variance, from 73% of the previous model.

Model 3 (Table 4) confirms that material well-being is accompanied by a significantly lower propensity to vote against the government proposal; however, the impact of partisanship – at least as to the government parties – on the voting choice remains robust. Model 3 also shows that the statistical contribution made by the turnout to the referendum outcome is as substantial as that of the parties' votes in the previous elections and greater than that made by other predictors, SES variables such as family patrimony and educational level included. This result implies that the negative association between the referendum turnout and “No” remains highly significant, even after controlling for political partisanship and SES determinants. Moreover, if we calculate the residuals of the regression of the “No” votes on the government coalition votes in 2014, and then look at the correlations between these residuals and other main explanatory variables (Table 3*b*), we notice that the 2016 referendum turnout presents the closest correlation: the turnout is, therefore, the best corrector of the model errors.

The above advocates a further analysis of the causes and consequences of the referendum turnout. Table 3*c* shows that the 2016 referendum turnout is positively correlated with those measures of development and civic commitment – from the occupation rate to family patrimony, from higher education to volunteers and self-financing degree – that have already emerged as negatively correlated with “No” in Table 3*a*. The referendum turnout is also correlated – as mentioned above – with the Northern and Central provinces. However, across the provinces, higher turnouts are correlated as well with higher shares of votes for some political parties: namely, Partito Democratico and Lega Nord, both particularly rooted in the Northern and Central

provinces. The referendum turnout correlations with the parties' votes are less close than those between turnout and variables measuring socio-economic conditions; still, they are significant. There is, therefore, an association between partisanship and turnout, but also one between both these variables and the referendum outcome: and it is difficult to understand whether the turnout association with the referendum outcome is deriving from the voters' level of political partisanship.

To solve this conundrum, we resorted to the 2006 turnout as an instrumental variable that would predict the referendum outcome *indirectly*, through its impact on the 2016 referendum turnout. The 2006 turnout emerged as a strong instrument because it robustly predicts the 2016 turnout (Table 4, Model 4: "t" value = 12.3). Concomitantly, the 2006 turnout indirectly predicts the 2016 referendum outcome (Table 4, Model 4:  $z = -7.8$ ): it does it even better than the best partisanship variable, namely the government parties' votes, and much better than the Partito Democratico's votes. Therefore, the contribution of the 2006 turnout to the prediction of the 2016 referendum outcome is not absorbed by the partisanship variables, while the collinearity level remains low, showing that turnout and partisanship do not overlap each other. Concurrently, if we use the 2006 turnout to predict the 2016 referendum outcome *controlling for the 2016 turnout*, the 2006 turnout is not significant anymore (detailed results available on request). In turn, the Davidson-MacKinnon test shows that we cannot reject the null of exogeneity for the 2016 turnout ( $p = 0.221$ ).

A mediation model<sup>4</sup> (Figure 4) further specifies these findings. It shows that, while the *direct* association of the pro-government votes with the 2016 referendum outcome

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<sup>4</sup> A mediation model clarifies the relationship between a response variable and one or more explanatory variables by including a further, *mediator*, variable. In a mediation model, the explanatory variables are expected to influence the mediator variable, which in turn influences the response variable.

is similar to the association between the latter and the 2016 turnout (confirming Table 4, Model 3), the *indirect* association between pro-government votes and referendum outcome (namely, the association mediated by the 2016 turnout) is non-significant. In effect, also the association between pro-government votes and the 2016 turnout is non-significant, when controlling for the 2006 turnout. This is in opposition to the significance of the *indirect* association between the 2006 turnout and the 2016 referendum outcome, which already emerged in the IV model (Table 4).

## 5. Discussion

We can regard the outcome of the Italian 2016 referendum as an opportunity to retrace some of the hypotheses revolving around the determinants of referendums voting. In the first place, the 2016 referendum was about lowering the cost of public institutions and making the legislative procedures more efficient: a rather technical issue, and therefore not such as to inevitably arouse great passions in the voters, as, instead, the well-known referendum on the divorce law, held in Italy in 1974, did. In other words, in the case of the 2016 referendum, the issue-voting – namely its *first-order* factor – was not particularly compelling, and this boosted the role of *second-order* factors. In the second place, the referendum issue was not close to the traditional stances of its promoter, the Partito Democratico, as indirectly demonstrated by the similarity between the reform that generated the 2016 referendum and the previous reform produced by the liberal-conservative Forza Italia, which had prompted the 2006 referendum: both reforms being aimed at lowering the cost of public institutions. Third, because of both the previous point and the conflict already existing in the Partito Democratico, the internal minority of the latter – i.e. of the main party supporting the referendum – sided with the opposition and campaigned against the reform. Fourth, the referendum – laden with political significance – became a plebiscite on the ruling government and therefore

an opportunity for the voters to express their approval or disapproval of its policies. Fifth, the partisanship factor seems to have worked not just for the government, but for the opposition as well. Ultimately, Italy's 2016 referendum allows the reviewing of some important facts discussed in the current literature: the party's internal split, the non-connection of referendum issues with party stances, the transformation of a referendum into a plebiscite on the government, and the voters' support for their parties – no matter whether they are part of the government or the opposition – when referendum is perceived as a “vote of confidence”.

Having said that, we believe that further and newer considerations about referendums can be drawn from the 2016 referendum: in particular, from the territorial decomposition of its results. However, a correct analysis of vote percentages requires a careful methodology and the checking of some prerequisites regarding the distribution of such percentages: a problem too often ignored in previous studies in this field. Before anything else, we have therefore checked the data dependability and found it satisfactory in this specific case. The successive findings of the present analysis can, therefore, be regarded as reliable.

A first finding regards the role of political partisanship in a poll revolving around an issue-voting: the “No” votes of the Italian 2016 referendum show a close *positive* correlation with the previous pro-opposition votes and a similarly close, but *negative*, correlation with the previous pro-government votes. As, in particular, for the main government party – Partito Democratico – this negative correlation with the “No” was similarly close, though this party lost the support of some of its previous voters, presumably because of its internal split. Therefore, all in all, the issue-voting did not replace partisanship as to the referendum determinants. However, we discovered as

well that the partisanship-voting link was far from being uniform in the various parts of the country.

All this shows that the partisanship-voting link, as well as the outcome of the referendum itself, was influenced by other facts. We identified some of these facts and found that variables the high values of which imply worse SES (avoidable mortality rate, the poorer taxpayers' share and population with lower educational level) were cross-province associated with high shares of "No". Concurrently, variables the high values of which imply better SES (occupation rate, per capita income, positive income variation, family patrimony, and cars) were cross-province associated with low shares of "No". All in all, this shows that "No" obtained higher percentages where the socio-economic context was bad. The negative association between the foreign immigrant share and the "No" share seems to be an indirect confirmation of the above. Since immigrants did not vote, and it is unrealistic, on account of the mentioned anti-immigrant sentiments, that voters rewarded the government with a "Yes" for having higher local migrant shares, we may regard the migrants-"Yes" link as a spurious association, deriving from the mentioned underlying territorial link between immigration and wealth. Concurrently, this suggests that voters from intensive-immigration areas did not use the referendum vote to express their potential hostility towards the government's immigration policy, as it seems they had done in the UK's 2016 referendum.

Summarising all this, it seems there is evidence enough supporting the hypothesis that the referendum allowed voters to voice their resentment over the relatively poor socio-economic conditions of their territory. The effect on the voting of the socio-economic conditions did not remove that of partisanship: the regressions showed that, at parity of family patrimony, political partisanship was still highly significant as a

determinant of voting. However, the worse the socio-economic conditions – following also Italy’s long period of recession after the 2007 financial crisis – the higher the share of those rejecting the reform proposed by the government, as if constitutional reform and government were two faces of the same coin. These facts suggest that governments saying “Trust us and vote ‘Yes’” are likely to get instead a “No” from voters of areas with worse socio-economic conditions.

Coming back to our initial hypotheses, Italy’s 2016 referendum shows that second-order factors play a role even in a poll revolving around a specific issue-voting (**H0**), and that, in particular, the political partisanship role is significant, but this role encounters constraints, primarily those concerning the voters’ dissatisfaction over the economic scenario (**H1**).

The above, however, does not tell the entire story. There are further variables, associated negatively with “No”, that are not strictly measures of SES. Among them, the referendum turnout has emerged as having peculiar characteristics. We have noticed that, first, the referendum turnout was largely dissimilar across territorial units, thus confirming Italy’s marked regional differences. Second, the “No” share responsiveness to turnout variations was definitely higher than that to other explanatory variables. Third, the turnout was positively associated with the share of votes previously obtained by certain parties. Fourth, it was associated with several SES features. All this suggests that the turnout played a relevant role in the referendum outcome, but also that no understanding of the referendum determinants would be possible without separating citizen participation in voting from political partisanship and SES features.

The multiple regression models provided some preliminary clarifications. The 2016 turnout emerged as capable of significantly predicting the 2016 referendum outcome, even in the presence of political partisanship indicators and basic SES

variables (urbanisation, income, education, and propensity for voluntarism). Moreover, the 2016 turnout proved to be the variable with the closest correlation with the residuals obtained by regressing the 2016 referendum outcome on the votes of government parties in 2014. In other words, the association between the 2016 turnout and the response variable (“No” votes) was absorbed neither by the political partisanship nor by the SES variables.

However, we wanted to further probe this crucial point. In order to isolate the effects of participation in the political decision process from partisanship, we made recourse to an instrument, namely the 2006 referendum turnout. The results obtained by using the 2006 turnout as an instrumental variable have shown it to be a predictor of the referendum outcome at least as good as, if not better than, the best predictors belonging to the political partisanship domain. These results confirm indirectly that the impact of the 2016 referendum turnout on the referendum outcome is not biased by error and is not substantially caused by the level of political partisanship. The mediation model has supported these findings by showing the close *indirect* association – mediated by the 2016 turnout – between the 2006 turnout and the 2016 referendum outcome. Ultimately, all this suggests that the turnout is an autonomous predictor of referendum outcomes: the present findings, therefore, do support our initial **H2**.

This analysis suggests something else as well. The referendum turnout was associated with many socio-economic aspects, from partisanship to wealth, from education to the propensity for voluntarism. However, if the turnout impact on the referendum outcome is not absorbed by partisanship, income, education, urbanisation and voluntarism, the turnout must contain something else. On the other hand, it is difficult to imagine, behind this *residual* but momentous element, a personal, material gain for the voter: it would be particularly difficult to imagine this in the case of Italy’s

2016 referendum because its issue-voting, of constitutional nature, could hardly have something to do with an ordinary voter's self-interest. The turnout drive is hardly ascribable even to a voter's benefit from the continuance of democracy, owing to the fact that the contribution made by his/her voting to the destiny of democracy would be infinitesimal. Concurrently, to regard the turnout as the result of an economics-oriented reasoning about the satisfaction obtained from voting seems to stretch too far the concept of self-interest. The motivation for attending a referendum such as that in question would consist, more realistically, in the civic virtue of participating in the ceremonies of democracy for their own sake, in loyalty to one's national community rather than to one's party. From such a non-partisan political commitment we expect a propensity to evaluate the issue-voting, rather than a proneness to follow the party recommendations or to punish governments for the economic situation. This residual *quid* underlying the turnout would, therefore, pertain to the *Homo sociologicus* rather than the *Homo oeconomicus*. This *quid* is persistent over time, as shown by the fact that the 2006 turnout closely predicts the 2016 one, despite all the intervened political and economic changes; and this suggests that it is also an element deeply ingrained in the local society.

The referendum turnout emerges, correspondently, as a crucial social factor, the origin and impact of which ought to be properly recognised in the future.

Figure 1. Histograms of cross-province distribution of the percentages of “No” in the Italian 2016 referendum, with the normal curve (bin size calculated as  $\sqrt[3]{N} * 2$ )

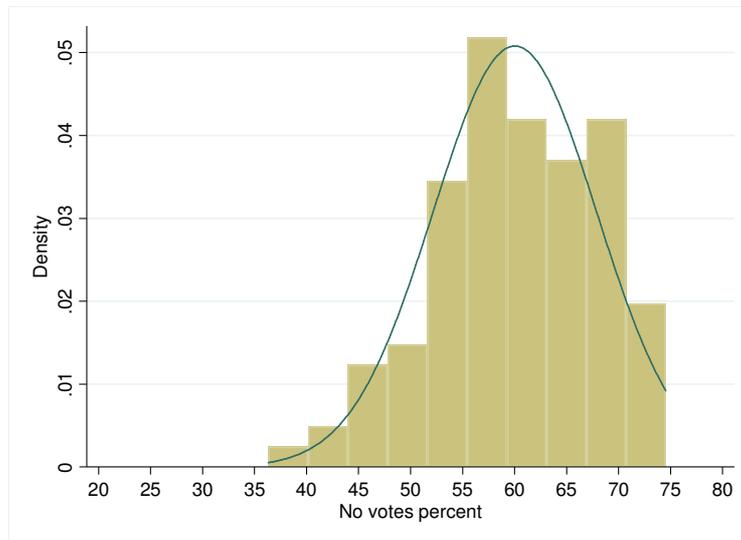


Table 1. Cross-province distribution of the percentages of “No” at the Italian 2016 referendum: test of normality

Variable	Obs	Pr. (Skewness)	Pr. (Kurtosis)	Joint	
				Adj. chi2(2)	Prob. >chi2
“No” votes %	106	0.089	0.926	2.98	0.225

Figure 2-3. Scatterplot of cross-province distribution of the fitted values of the percentage of “No” at the Italian 2016 referendum, against the referendum turnout percent, with best fit line (left); scatterplot of cross-province distribution of the residuals of the percentage of “No” at the Italian 2016 referendum, against the fitted values of the percentage of “No” (right)

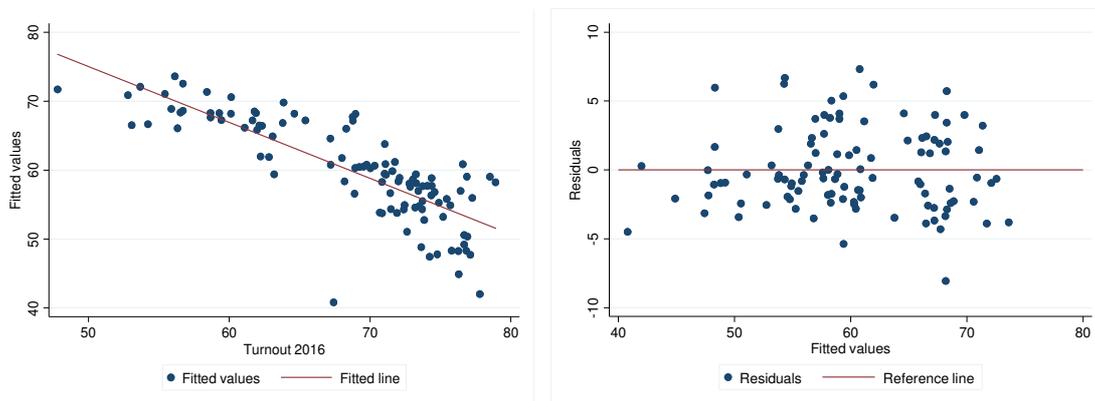


Table 2. Percentage of “No” votes and turnout at the 2016 Italian referendum and percentage of votes obtained at the 2014 European political elections by the main Italian political parties, by all the government parties and all the opposition parties, by region

Region	“No” votes	Turnout 2016	Partito Democ.	Nuovo C.D.	S. Tirol Volks P.	Govern. parties	Cinque Stelle	Forza Italia	Lega Nord	Fratelli d’Italia	Con Tsipras	Verdi	Oppos. parties
Trentino-Alto Adige	46.1	72.2	30.0	1.7	28.8	60.8	12.4	7.6	7.6	1.9	6.7	2.7	38.8
Toscana	47.5	74.5	56.3	2.4	0.0	59.2	16.7	11.7	2.6	3.2	5.1	0.8	40.1
Emilia-Romagna	49.6	75.9	52.5	2.6	0.1	55.6	19.2	11.8	5.0	2.7	4.1	0.9	43.8
Umbria	51.2	73.5	49.2	3.4	0.0	53.0	19.5	14.2	2.5	5.4	4.1	0.6	46.4
Marche	55.1	72.8	45.5	3.7	0.0	49.9	24.5	13.2	2.7	4.1	4.1	0.8	49.4
Lombardia	55.5	74.2	40.3	3.7	0.0	44.6	15.7	16.9	14.6	2.8	3.5	1.0	54.6
Piemonte	56.5	72.0	40.8	3.1	0.0	44.6	21.6	15.8	7.6	4.2	4.1	1.0	54.5
Valle D’Aosta	56.8	71.9	47.1	3.2	0.0	51.1	19.6	10.3	6.8	2.5	7.7	1.1	48.0
Liguria	60.1	69.7	41.7	3.1	0.0	45.3	26.0	13.9	5.6	3.0	4.5	0.9	53.8
Molise	60.8	63.9	31.2	4.4	0.0	38.0	27.4	23.4	1.0	4.0	4.5	0.6	61.0
Friuli-Venezia Giulia	61.0	72.5	42.2	4.3	0.6	47.6	18.9	14.3	9.3	4.4	3.7	1.1	51.7
Veneto	62.0	76.7	37.5	3.5	0.6	42.0	19.9	14.7	15.2	3.3	2.8	1.0	56.9
Lazio	63.3	69.2	39.2	4.3	0.0	43.9	25.2	17.6	1.6	5.6	4.7	0.8	55.4
Abruzzo	64.4	68.7	32.4	5.4	0.0	39.1	29.7	18.7	1.5	4.7	4.3	0.6	59.5
Basilicata	65.9	62.9	42.2	4.1	0.0	47.8	21.2	14.0	0.7	4.3	5.7	2.5	48.4
Calabria	67.0	54.4	35.8	11.4	0.0	48.2	21.5	19.6	0.7	3.6	4.2	0.5	50.2
Puglia	67.2	61.7	33.6	7.1	0.0	41.5	24.6	23.5	0.6	3.7	4.3	0.9	57.6
Campania	68.5	58.9	36.1	5.4	0.0	42.4	22.9	24.0	0.7	4.5	3.8	0.6	56.5
Sicilia	71.6	56.7	33.6	9.1	0.0	43.4	26.3	21.3	0.9	3.2	3.6	0.6	55.8
Sardegna	72.2	62.5	38.8	2.6	0.0	42.7	30.5	16.4	1.4	3.5	4.1	0.4	56.4
Total	59.9	68.5	40.8	4.4	0.5	47.1	21.2	16.8	6.2	3.7	4.0	0.9	52.8

Table 3. Pearson correlations between, respectively, (a) “No” votes at the 2016 Italian referendum, (b) residuals of the regression of “No” votes on government parties 2014 votes, (c) 2016 referendum turnout, and various explanatory variables; results for all the Italian provinces (N 106), and for provinces of, respectively, Northern (N 47), Central (N 22) and Southern (N 37) Italy

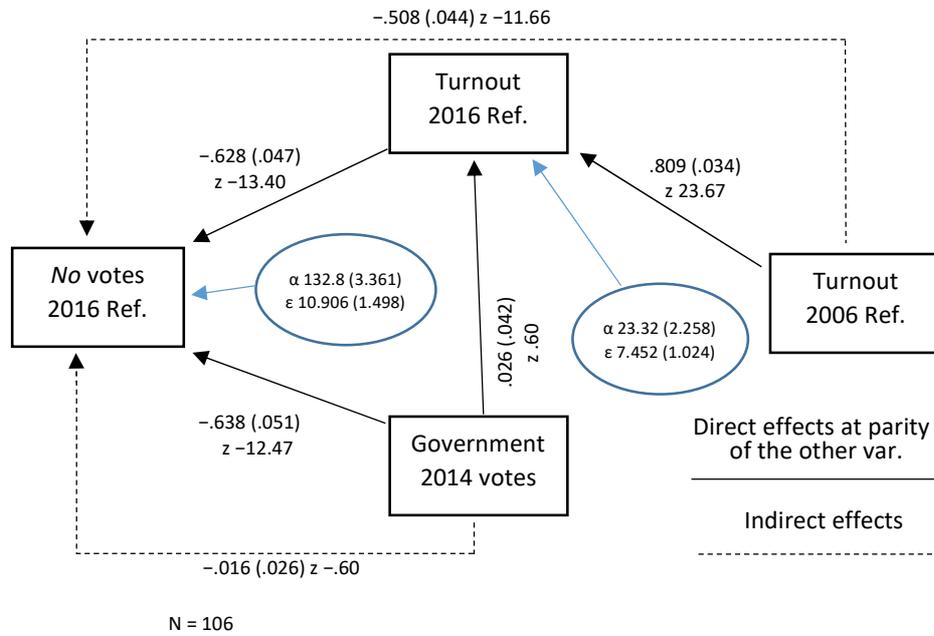
Variables	(a) “No” votes 2016 referendum per cent				(b) Residuals “No” votes	(c) 2016 ref. turnout
	All the provinces	Northern provinces	Central provinces	Southern provinces	All the provinces	All the provinces
Government parties 2014 votes	-0.721	-0.772	-0.965	0.058	0.000	0.314
Partito Democratico 2014 votes	-0.654	-0.228	-0.969	0.119	-0.164	0.538
Nuovo Centrodestra 2014 votes	0.596	0.433	0.720	0.022	0.629	-0.758
Südtiroler Volkspartei 2014 votes	-0.299	-0.530	.	.	-0.107	0.027
Italia dei Valori 2014 votes	0.300	0.290	0.143	-0.425	0.089	-0.335
Opposition parties 2014 votes	0.702	0.770	0.966	-0.008	-0.020	-0.292
Cinque Stelle 2014 votes	0.645	0.370	0.789	0.273	0.465	-0.486
Forza Italia 2014 votes	0.692	0.567	0.874	-0.131	0.270	-0.620
Lega Nord 2014 votes	-0.264	0.387	-0.377	-0.013	-0.586	0.558
Fratelli d’Italia 2014 votes	0.224	0.421	0.661	-0.353	-0.018	-0.092
Con Tsipras 2014 votes	-0.247	-0.488	-0.343	-0.209	0.041	-0.030
Verdi 2014 votes	-0.318	-0.493	-0.436	-0.067	-0.219	0.231
Turnout 2016 referendum	-0.748	-0.146	-0.882	-0.405	-0.753	1.000
Turnout 2006 referendum	-0.720	0.124	-0.850	-0.363	-0.808	0.858
Ln(chief town pop.)	-0.085	-0.237	-0.134	0.392	0.017	0.094
Pop. 18-30 year old	0.644	-0.289	0.699	0.120	0.600	-0.829
Pop. 50-75 year old	-0.206	0.509	-0.117	-0.027	-0.222	0.391
Number of people per family	0.467	-0.170	0.201	0.112	0.401	-0.553
Immigrants	-0.746	-0.307	-0.588	-0.336	-0.657	0.787
Avoidable mortality rate	0.699	0.334	0.714	0.453	0.614	-0.785
Occupation rate	-0.793	-0.602	-0.813	-0.366	-0.748	0.922
Juvenile occup. rate	-0.725	-0.192	-0.774	-0.232	-0.736	0.846
Income per capita	-0.717	-0.496	-0.574	-0.178	-0.609	0.787
Family patrimony	-0.690	-0.234	-0.624	-0.151	-0.728	0.822
Taxpayers € <=10K	0.701	0.161	0.806	-0.085	0.695	-0.899
Income Variation	-0.144	-0.322	-0.495	-0.115	0.075	0.026
Cars	-0.405	-0.287	-0.107	-0.158	-0.266	0.354
Primary school dipl. or less	0.289	-0.015	-0.369	0.059	0.326	-0.496
University degree	-0.289	-0.155	-0.085	-0.521	-0.186	0.301
Volunteers	-0.647	-0.393	-0.746	-0.059	-0.403	0.536
Self-financing degree	-0.680	-0.310	-0.584	-0.280	-0.635	0.726
Northern Italy (dummy)	-0.403				-0.539	0.608
Central Italy (dummy)	-0.364				-0.126	0.263
Southern Italy (dummy)	0.729				0.669	-0.857

Coeffs for all the provinces: >0.20, p <0.05; >0.25, p <0.01 ; >0.32, p <0.001  
 Coeffs for Northern provinces: >0.29, p <0.05; >0.38, p <0.01 ; >0.47, p <0.001  
 Coeffs for Central provinces: >0.42, p <0.05; >0.55, p <0.01 ; >0.66, p <0.001  
 Coeffs for Southern provinces: >0.33, p <0.05; >0.43, p <0.01 ; >0.52, p <0.001

Table 4. Multiple linear regressions, and two-stage least squares regression, of “No” votes per cent at the 2016 Italian referendum on political partisanship, as measured by political parties votes at the 2014 elections, turnouts and other explanatory variables; all the Italian provinces

Variables	OLS Regr. Model 1			OLS Regr. Model 2			OLS Regr. Model 3			IV 2SLS Reg. Mod. 4 (turnout 2016 = turnout 2006)					
	Coeff.	S. E.	t	Coeff.	S. E.	t	Coeff.	S. E.	t	1 <sup>st</sup> stage			2 <sup>nd</sup> stage		
										Coeff.	S. E.	t	Coeff.	S. E.	z
Government parties 2014 votes	-0.622	0.118	-5.25	-0.178	0.108	-1.65	-0.685	0.123	-5.57	-0.052	0.094	-0.55	-0.810	0.114	-7.12
Partito Democratico 2014 votes	-0.260	0.100	-2.59	-0.230	0.080	-2.88	0.079	0.097	0.81	-0.084	0.071	-1.18	0.170	0.078	2.18
Cinque Stelle 2014 votes				0.666	0.094	7.10	0.129	0.100	1.29	-0.170	0.072	-2.36	0.166	0.094	1.76
Forza Italia 2014 votes				0.513	0.123	4.16	-0.215	0.142	-1.51	-0.240	0.099	-2.41	-0.230	0.132	-1.74
Turnout 2006 ref.										0.753	0.061	12.33			
Turnout 2016 ref.							-0.522	0.093	-5.58				-0.740	0.095	-7.77
Ln(chief town pop.)							0.274	0.228	1.20						
Pop. 50-75 year old							0.090	0.465	0.19						
Primary sch. dipl. or less							-0.143	0.150	-0.95						
Family patrimony							-0.029	0.008	-3.43						
Volunteers							-0.118	0.127	-0.93						
Northern Italy							2.082	1.098	1.90						
Constant	99.676	3.696	26.97	54.850	6.528	8.40	130.42	15.940	8.18	41.072	7.453	5.51	141.94	12.199	11.64
R <sup>2</sup>	0.549			0.733			0.873			0.878			0.848		
VIF	2.29			2.23			4.49			4.03			2.23		
N	106			106			106			106			106		

Figure 4. Direct and indirect effects between “No” votes at the 2016 referendum, turnout at the same referendum, government parties votes at the 2014 European elections, turnout at the 2006 referendum. Path analysis mediation model, via structural equations. Estimation method: maximum likelihood. Coefficients and (errors). All the Italian provinces



### Appendix: Summary Statistics for the Italian provinces

Variables	Obs	Mean	Std. Dev.	Min	Max
“No” votes 2016 referendum (%)	106	60.03	7.855	36.31	74.56
Government parties 2014 votes (%)	106	46.71	6.638	34.09	64.92
Partito Democratico 2014 votes (%)	106	40.69	7.840	15.67	61.83
NCD 2014 votes (%)	106	4.61	2.806	0.90	14.48
SVP 2014 votes (%)	106	0.71	4.874	0.00	48.02
Italia dei Valori 2014 votes (%)	106	0.70	0.424	0.29	2.87
Opposition parties 2014 votes (%)	106	52.31	6.535	34.64	65.02
Cinque Stelle 2014 votes (%)	106	21.35	4.818	8.81	33.02
Forza Italia 2014 votes (%)	106	16.92	4.699	4.71	34.14
Lega Nord 2014 votes (%)	106	5.60	6.063	0.44	33.88
Fratelli d'Italia 2014 votes (%)	106	3.68	1.276	1.37	7.92
Con Tsipras 2014 votes (%)	106	3.89	1.201	2.30	9.92
Verdi 2014 votes (%)	106	0.87	0.509	0.29	3.93
Turnout 2016 referendum (%)	106	68.48	7.242	47.81	78.90
Turnout 2006 referendum (%)	106	54.32	8.212	35.28	66.54
Ln(chief town pop.)	106	11.50	0.856	9.99	14.87
Pop. 18-30 year old (%)	106	13.31	1.721	10.33	17.23
Pop. 50-75 year old (%)	106	32.49	1.747	28.48	36.13
Number of people per family (average)	106	2.40	0.170	1.98	2.89
Immigrants (% of res. pop.)	106	7.76	3.431	1.79	16.02
Avoidable mortality rate (per 10K 0-74year old pop.)	106	5.29	0.806	3.54	7.48
Occupation rate (%)	106	60.27	10.824	39.74	76.06
Juvenile occupation rate (%)	106	29.73	8.491	12.09	47.41
Income per capita € (thousands)	106	24.28	63.750	14.40	49.00
Family patrimony € (thousands)	106	350.79	84.417	182.57	505.73
Taxpayers € <=10K (%)	106	32.07	8.264	20.68	50.57
Income variation 2007-2013 (%)	106	-4.67	5.995	-16.17	9.59
Cars (per 100 electors)	106	80.56	9.450	61.99	147.54
Primary school dipl. or less (%)	106	29.81	2.767	19.10	36.31
University degree (%)	106	10.11	1.720	7.12	16.29
Volunteers (per 100 pop.)	106	11.56	5.151	2.96	41.02
Self-financing degree of local gvts (% of revenues)	106	14.38	6.073	4.70	35.60

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