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Prevalence and determinants of conspiracy theory beliefs in Italy: an exploratory analysis

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ABSTRACT

Anecdotal evidence suggests that believing in conspiracy theories is widespread in the Italian public opinion, impacting dramatically on a number of aspects of the public debate. So far, little empirical evidence has been collected to assess the spread of beliefs in conspiracy theories and to test similarities and differences with other countries. This paper aims at assessing the quantitative diffusion of conspiracist ideation among the Italians and testing several fundamental hypotheses, collected in other national contexts, regarding the correlation between high levels of conspiracism and educational attainment, trust, religiosity and political partisanship. The paper employs multivariate regression models applied on the ITANES national sample of 2016. We show that conspiracism correlates negatively with educational level and positively with religiosity, while no correlation between beliefs in conspiracies and trust in institutions is found. Also, a correlation between being a right-wing parties/Movimento 5 Stelle supporter and high levels of conspiracist ideation is found.

Author Keywords

conspiracy theories; religiosity; trust in institutions; partisanship; Italy.

INTRODUCTION

During the last few years, the attention of pundits and scholars to conspiracy theories and their supporters has become increasingly relevant in the Western public debate. An increasing number of studies started assessing the relevance and characteristics of conspiracism (namely, believing and supporting conspiracy theories, see Oliver and Wood, 2014), stressing that beliefs in such theories and, in general, the development of anti-scientific attitudes are particularly diffused traits in the public opinion (and, especially, in specific parts of the audience, such as political extremists and less educated people, see Darwin et al., 2011; Oliver and Wood, 2014; Swami et al., 2014; Wood et al., 2014; Berinski, 2015; Uscinski et al., 2016). In Italy, the reach of conspiracy theories in the public opinion can be realized

by recurring to several anecdotal examples signaling the belief in such theories: in at least three cases, between 2012 and 2016, Italian judicial courts have sentenced in favor of parents whose children were diagnosed with autism after being vaccinated, suing the National Ministry of Health and explicitly relying on the conspiracy theory that links autism and MMR vaccines (see Paravicini, 2016). In 2010, seven geologists were sentenced to 6-year imprisonment for not having predicted the earthquake that killed 309 in L'Aquila, although there is no standard scientific method to forecast earthquakes (Carlidge, 2012). In 2013, after huge pressures by the media and public opinion (that have led to public demonstrations), the Italian government was forced to violate the protocol for what concerns drugs testing, by starting *in vivo* tests of a controversial innovative method (Davide Vannoni's Stamina therapy), which lacked of the basic *in vitro* validation. Supporters of the Stamina therapy repeatedly claimed that the alleged cure was impeded by institutions and big pharmaceutical firms, scared by an alternative method that could restrict their profits.

Although in some cases we could declassify some of these episodes to physiological slips, the diffusion of this kind of theories in the public opinion is seeming to have massive consequences for what concerns public health: in order to contrast the lowering of vaccine coverage, several Italian regions and local governments are going to forbid the access to the nursery school to children who have not completed a specific list of requested vaccinations (Carra and De Giorgio, 2017).

Despite the relevance of the topic, however, very little evidence has been collected to account for the prevalence and the determinants of conspiracy theories beliefs in the Italian public debate.

The aim of this paper is to present results from a survey collected on a national sample, to argue to what extent conspiracy theories are spread in the Italian audience and what kind of citizens are particularly attracted by this kind of opinions.

First, we provide descriptive statistics of several items, aimed at measuring the level of belief in conspiracy theories. Second, we assess the internal consistency of our conspiracism measure. Finally, we test the impact of the main determinants indicated in the literature that are expected to affect individual levels of conspiracism (namely, educational level, trust, religiosity, and partisanship).

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DETERMINANTS OF CONSPIRACISM: A SET OF HYPOTHESES

Drawing upon the definition of Uciniski and colleagues (2016: 2), we can define "conspiracy theory as a proposed explanation of events that cites as a main causal factor a small group of persons (the conspirators) acting in secret for their own benefit, against the common good." As we pointed out above, a relevant amount of scientific literature indicates that beliefs in conspiracy theories and other anti-scientific attitudes are widely diffused in the public opinion (Darwin et al., 2011; Oliver and Wood, 2014; Swami et al., 2014; Wood et al., 2014; Berinski, 2015; Uscinski et al., 2016).

Particularly during the last few years, a growing amount of studies started to investigate the topic, by exploring conspiracy theories' supporters and their characteristics. Broadly speaking, it is possible to identify two main branches of this literature: on the one hand, a stream of research has committed to investigating the relation between several psychological traits and the likelihood of believing in conspiracy theories. These studies usually dismissed conspiracism as some form of underlying psychological pathology. Results of these works show that low levels of self-esteem (Abalakina-Paap et al., 1999), negative attitudes towards authority (Uciniski et al., 2016), paranoid ideation and schizotypy (a prodromal phase of schizophrenia, Darwin et al., 2011) are connected with beliefs in conspiracies.

On the other hand, a second branch of the literature argued that the simple relationship between conspiracism and pathological diseases (or, at least, their prodromal phases) is insufficient to understand the phenomenon. This second branch of the literature aims at connecting conspiracism with socio-political, value-related or religious attitudes (Oliver and Wood, 2014). Several studies, for instance, stressed the negative relation between elements like scientific knowledge and rational thinking and beliefs in conspiracy theories. In these studies it has been argued that more educated people (that is, individuals who are more trained to think rationally) will tend to be more attentive to the logical consequentiality of conspiracy theories, or more prone to adopt a scientific skeptical attitude, making them less permeable to arguments, such as conspiracism, that usually present logical fallacies (Wood et al., 2012; Swami et al., 2011; Berinski, 2011).

It has also been found a relationship between religious values and conspiracism. According to Oliver and Woods (2014), with respect to non-conspiracist reasoning, conspiracism is based on the propensity to attribute the source of unexplained facts to unseen forces that secretly shape peoples lives. This intuition might lead to expect a relationship between conspiracism and religiosity: different studies (Oliver and Wood, 2014; Darwin et al., 2014) showed that believing in unseen entities like Heaven, Hell, the Devil, angels and extrasensory perception increases ones propensity to be attracted by, and believe in, conspiracy theories.

From what concerns the relation between socio-political attitudes and conspiracism, Einstein and Glick (2015) showed that believing in conspiracies—theories based on secret plots hatched by members of the institutions doing illegal or generally evil things—is, not surprisingly, connected to lower levels of trust in civic and political institutions.

According to this empirical evidence, thus, conspiracists tend to present lower levels of trust, higher levels of religiosity and lower levels of education with respect to citizens who do not believe in conspiracy theories. Some authors have noticed that this profile is consistent with that of the right-wing populist electorate (Sunstein and Vermeule 2009; Barreto et al., 2011). With this respect, it is easy to argue that populist rhetoric has something to share with conspiracist ideation. First, both populism and conspiracism tend to base their claims on Manichean narratives (Oliver and Wood, 2014): similarly to the populist claims that contrast a corrupted, "evil" elite with the "good" people, conspiracies represent a way in which some Evil agents secretly aim at increasing their power, at the expenses of the Good (Akkerman, Mudde and Zaslove, 2014; Oliver and Wood, 2014). According to both these narratives, identifying and fighting the conspirators/the elite becomes a way in which the Good can beat the Evil. Second, both populism and conspiracism present clear and pronounced anti-elitist attitudes (partially connected with the low trust in institutions). In both conspiracists and populists' claims, the elites are seen as an obscure, corrupted lobby that does not do the heartland's interests (Hameleers et al., 2016).

Although the relationship between populism and beliefs in conspiracy theories seems to have strong theoretical foundations, the empirical evidence sustaining this argument is uncertain. If by employing small samples and experimental designs, several studies found a relationship between authoritarian right-wing views and beliefs in conspiracies (Sunstein and Vermeule 2009; Barreto et al., 2011), other studies found no connection whatsoever between partisanship and conspiracism (Oliver and Wood, 2014). Other studies, moreover, found a relationship between (both left and right) extremism and belief in conspiracies (van Prooijen et al., 2015).

Hypotheses

After having briefly presented the explanations of conspiracism and empirical evidence, it is possible to draw from this literature several hypotheses. According to previous studies, it seems to exist a clear negative relation between rational thinking—the capacity to store and rationally process information—and conspiracism. Being this capacity increased by educational processes, the most straightforward hypothesis that accounts for this relation reads as follows:

Hp1. The higher the educational level, the lower the degree of conspiracism

Moving from psychological to socio-political and value-related explanations, we have pointed out that believing in unseen, mysterious factors that affect peoples everyday lives can be intended as one of the major psychological drivers of conspiracism. We can thus declare our second hypothesis as follows:

H2. The higher the level of religiosity, the higher the level of conspiracism.

We have also shown that different works stress a negative relation between trust in political institutions and conspiracism. The third hypothesis will thus read as follows:

H3. The lower the level of trust, the higher the level of conspiracism.

Finally, we have seen that no clear evidence emerges from previous studies for what concerns the relationship between political traits and conspiracism. Some studies (Sunstein and Vermeule 2009; Barreto et al., 2011) argue that conspiracism is basically a populist, right-wing phenomenon. Other contributions present evidence showing that the highest levels of conspiracies are to be found in (both left and right) extremist sections of the electoral body; others found no relationship between partisanship and conspiracism (Oliver and Wood, 2014). Hypothesis 4 is thus split in two, mutually exclusive sub-expectations:

H4a. The more right-wing an individual is, the more she will present higher levels of conspiracism.

H4b. The more extremist an individual is, the more she will present higher levels of conspiracism.

DATA

In the present study, we test our hypotheses by employing data from the most recent waves of the Italian National Election Study (ITANES) 2013-2016 panel. In particular, we will mainly use the ninth wave, which was collected shortly after the constitutional referendum of December 4, 2016 (more precisely, between December 7 and 13, 2016). Interviews were collected by CAWI mode.¹ The 2016 post-referendum survey is the last wave of a longer panel, which started during the election campaign for the National Elections of 2013. From 2013 to 2016 (in occasion of 2013 Italian National Elections, 2014 European Elections, 2015 Regional Elections and 2016 Constitutional referendum), at least two waves per year were collected—generally a pre-electoral and a post-electoral one. In the survey, 3,027 people were interviewed. In this wave of the study, it has been asked to respondents how much they evaluate as plausible, on a 0-10 scale (where 0 means "Not plausible at all" and 10 means "Completely plausible"), different conspiracy theories. In particular, it has been asked to evaluate the following sentences:

1. "Moon landings never happened, and proofs have been fabricated by NASA and the US government" ("Moon")
2. Vaccines harm the immune system and expose it to diseases (Vaccines)
3. The Stamina method invented by Davide Vannoni for curing neurodegenerative diseases has been hindered by big pharmaceutical groups (Stamina)
4. Vapor trails left by aircraft are actually chemical agents deliberately sprayed in a clandestine program directed by government officials (ChemTrails)

¹The data were collected by a commercial online community (SWG), from which names and email addresses were randomly selected. Our variables are thus not representative of the Italian population. As a result, data suitable for point estimations cannot be generalized to the population. We will take into account the issue in the final paragraph of the paper.

These questions are similar to those employed in other works: especially the first, second and fourth item were adapted from a battery used in the Cooperative Congressional Election Study (2011) and aim at tapping whether the respondent is willing to believe in several widespread conspiracy theories (the "fake moon landing" theory, the theory according to which vaccines are harmful and the "chemical trails" conspiracy theory). The third item is, on the contrary, completely original and is based on a case that had huge media resonance in Italy, that of the so-called Stamina method (see the Introduction for more information).

Other variables employed to test our hypotheses will be educational level (coded as "Low", "Medium" and "High"), level of religiosity (operationalized as a question that asks respondents how much is God important in their lives, on a 0-10 scale) and trust, operationalized with four items of the stealth democracy scale (Hibbing e Theiss-Morse, 2002).² In addition, to test hypotheses on the relation between political traits and conspiracism, we will employ a the left-right self-placement scale³ and a variable measuring the voting intention in the following National Elections (coded as "Sinistra Italiana", "PD", "Forza Italia", "Movimento 5 Stelle", "Lega Nord", "Fratelli d'Italia", "Others", "Abstainers/Undecided").⁴

The following section is aimed at analyzing three crucial aspects of the nature of conspiracism in Italy and the relationship between conspiracism and personal, value-related and political traits. First, we will investigate how much spread in the population is the tendency to evaluate plausible the four conspiracies that we have submitted to our sample. Secondly, it will be tested whether these items can represent a coherent latent construct, to form a conspiracy scale. Third, by employing linear regression models (in a fashion similar to that of Oliver and Wood, 2014), we will test our four hypotheses.

DESCRIPTIVE RESULTS AND RELIABILITY ANALYSES

Table 1 shows the distributions of the four conspiracies, recoded in people who firmly do not believe in the conspiracy (0), who tend not to believe in the conspiracy (1-5) and who believe in the conspiracy (we interpret those who give a 6 or more as believers). A relevant amount of the sample (around 40%) firmly refuses the proposed conspiracies. For

²The Stealth democracy scale has been constructed by taking into account four elements of the original scale that have been demonstrated to be part of the same latent construct by means of a Principal Component Analysis. The items are a set of 0-10 scales that ask to the respondent their degree of agreement with the following statement: "Parties are necessary to defend special interests of groups and social classes"; "People have not enough knowledge or interest to decide about political problems"; "Parties guarantee that people can participate in politics in Italy"; "Without parties there cannot be democracy". After having been tested for reliability, to assure comparability with other predictors, the variable has been rescaled in a 0-10 scale.

³The original scale is a 0-10 scale that has been recoded as follows: 0 and 1 are coded as "Left"; 2, 3 and 4 "Center-left"; 5 "Center"; 6, 7 and 8 "Center-right"; 9 and 10 "Right"; People who do not want to locate themselves are coded separately as "Does not locate".

⁴It is necessary to stress that, for upcoming analyses, religiosity scale was collected in wave 7, the stealth democracy battery was collected in wave 8. All the other variables have been collected in wave 9.

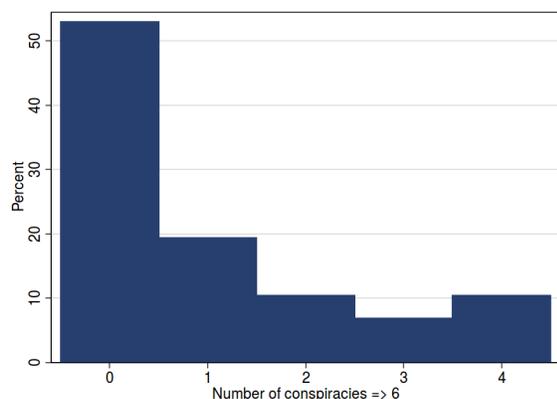


Figure 1. Number of conspiracy theories in which respondents believe.

what concerns the Stamina case—which monopolized for a while the attentiveness of public opinion a couple of years ago—the situation is less clear: people, indeed, tend not to refuse entirely the conspiracy (the peak around 0 is less pronounced). A more informative measure of the relevance of the phenomenon comes from Figure 1, which shows, in a more parsimonious way, the number of theories to which respondents believe. Also in this case, we define believers as those who gave a score of 6 or more to the items. The figure thus shows us that about 53% of our sample gives an under-6 score to every conspiracy proposed. This means that 47% of the sample considers plausible at least one conspiracy theory (very similarly to what registered in American studies). Further, a 10% of the sample thinks plausible all the four items. Although our data cannot be directly generalized to the population (given the CAWI nature of the data collection), it seems interesting to notice that the share of people who believe in at least one conspiracy theory (about half of our sample) is relevant.

The four conspiracist items present a high internal consistency. Overall, the average inter-item correlation is 0.62, and the Cronbach alpha is 0.87, with none of the items presenting a peculiar distribution compared to the others. We can thus say that our four items measure the same latent concept (which, consistently with previous literature, can be defined as conspiracist ideation). The main consequence of this result is that it is possible to produce a conspiracism scale by summing each individuals scores of the four items. The scale resulting from the sum (a 0-40 scale) has been rescaled on a range between 0 (which represents an individual who does not believe in any conspiracy) and 10 (representing individuals who believe firmly in every conspiracy proposed).

Believing	Conspiracies			
	Moon	Vaccines	Stamina	ChemTrails
0	41.5	37.2	25.9	45.3
from 1 to 5	38.1	38.7	36.2	33.5
from 6 to 10	20.4	24.1	37.9	21.2
Total	100.0	100.0	100.0	100.0
N	2,889	2,892	2,816	2,885

Table 1. Distribution of the level of believing in four conspiracy theories

FINDINGS

To test the first three hypotheses, we have fitted three multivariate linear regression models (Table 2). In the first model, the dependent variable is the rescaled conspiracism scale and presents, as predictors, basic socio-demographic characteristics (age, gender and educational level).

As it is possible to see in Model 1 of Table 2, women tend to be more conspiracist than men, as well as younger people. As far as our first hypothesis is concerned, we can see that the coefficient for the educational level is big and significant. In other words, it seems that higher educated people tend to believe less in conspiracies (the coefficient of -1.56 means that higher educated people are placed, on average, about 1.6 points lower on the conspiracism scale).

Model 2 assesses the relevance of religious beliefs in explaining our dependent variable. We have stressed that, since conspiracies are, to some extent, a type of para-religious belief, it is possible that people who are more acquainted with this kind of reasoning will be more prone to believe in such theories. As it is possible to see, the effect of the religiosity scale is positive and significant. Being the range of the predictor a 0-10 scale, the .14 coefficient states that, on average, the difference between an entirely non-religious and a very religious person is about 1.4 points.

Model 3 insert the Stealth democracy scale, employed here as a proxy of trust in political institutions. Trust is expected to be negatively, and significantly correlated with conspiracism. The magnitude and the statistical significance of the coefficient, in our results, do not show a relevant correlation between the two constructs. Table 3 tests our fourth hypotheses. We build Model 1 and 2 of Table 3 as identical to Model 3 of Table 2, but we add the recoded version of the left-right self-placement scale and the voting intention variables.⁵ As far as the other control variables are concerned, we see that, by adding political traits variables, other predictors maintain their significance levels, even if the magnitude of the coefficients decreases slightly.

We have stressed above that, *ceteris paribus*, we could have no effect whatsoever of the political placement, we could see a left-right gradient, in which left-wing people are less conspiracist than right-wing people, or a third possible outcome, in which more extreme people tend to be more conspiracist than centrist citizens. Model 1 shows that, at least in our sample, the second alternative is corroborated (namely, H4a). People located in the left part of the political spectrum generally have lower predictions for the scale of conspiracism, while center-right and, especially, extreme right-wing people tend to present significantly higher predictions of conspiracism. Figure 2 (left panel) shows an even clearer gradient through linear predictions for the left-right self-placement fitted in model 1 of Table 3.

The high level of conspiracism among people who do not locate on the left-right scale deserves some additional attention. This evidence can suggest a further association between conspiracism and voting behavior, as long as most of the people not locating themselves on the left-right scale, indeed, do

⁵The effect of the left-right self-placement has also been tested by employing the non-recoded version of the variable, leading to equivalent results.

Indep. variables	Model 1		Model 2		Model 3	
	Coef.	S.E.	Coef.	S.E.	Coef.	S.E.
Educational level (ref. Primary)						
Secondary	-0.78***	(0.18)	-0.81***	(0.18)	-0.78***	(0.18)
Tertiary	-1.56***	(0.19)	-1.52***	(0.19)	-1.50***	(0.19)
Gender: Female (ref. Male)	0.85***	(0.12)	0.74***	(0.11)	0.74***	(0.11)
Age/10	-0.36***	(0.04)	-0.39***	(0.04)	-0.38***	(0.04)
Religiosity			0.14***	(0.02)	0.15***	(0.02)
Trust (Stealth democracy)					-0.04	(0.02)
Constant	5.41***	(0.29)	4.77***	(0.29)	4.91***	(0.31)
Observations	2,003		2,003		2,003	
R-squared	0.09		0.12		0.12	

Standard errors in parentheses
 *** p_i0.01, ** p_i0.05, * p_i0.1

Table 2. A set of OLS regression models studying conspiracism scale (socio-demographic and value-based predictors)

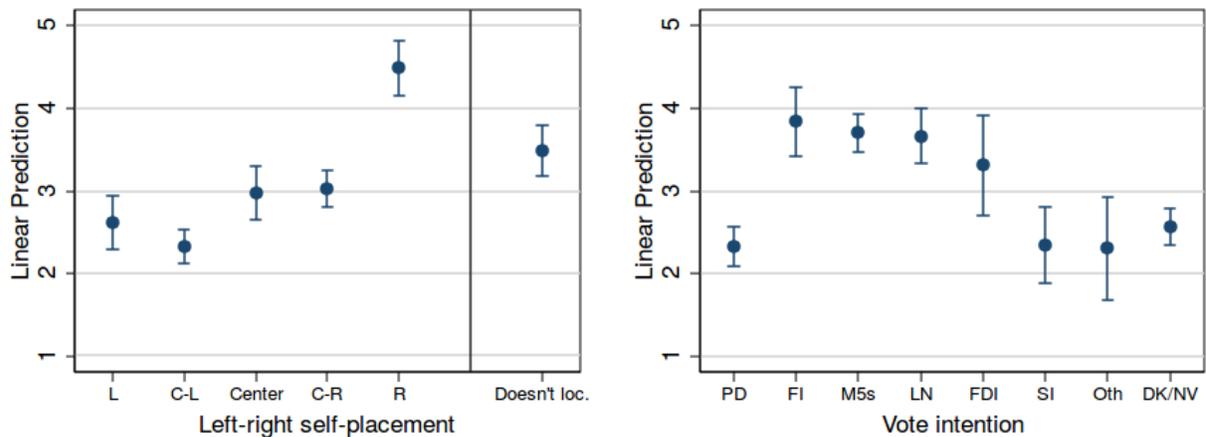


Figure 2. Linear predictions for left-right self-placement and vote intention (Table 3 estimates).

declare to vote for Movimento 5 Stelle (Maggini, 2013). The result is quite straightforward since Movimento 5 Stelle’s appeals repeatedly denounced the manipulative nature of official media. Further, the political leader of the Movimento, Beppe Grillo, sustained different conspiracy theories, such as that of seigniorage, as well as anti-vaccine theories (Vignati, 2013). It seems thus plausible that Movimento 5 Stelle’s supporters are more prone to present conspiracist traits.

To test this further expectation, model 2, which includes a voting intention variable, is fitted. Predicted scores for the parties taken into account are presented in Figure 2 (right panel). As it is possible to see, voters of Sinistra Italiana and the PD tend to maintain lower levels of conspiracism, as well as “Other parties” voters and non-voters. On the contrary, predicted levels of conspiracism for right wing parties

(such as Forza Italia and the Lega Nord) are significantly higher (about 1.5 points above the prediction for the PD). Movimento 5 Stelle’s supporters present similar values, while Fratelli d’Italia supporters tend to present intermediate values.

CONCLUSIONS

Conspiracy theories are widespread in contemporary democracies and can have massive consequences, from the public health, political and social perspectives. Research on this topic is relatively recent, and empirical evidence, based on quantitative data, has been mainly collected in the American context. This work aimed at providing evidence concerning conspiracism in a context in which empirical evidence was absent, Italy. By relying on the CAWI panel of Italian Na-

Indep. variables	Model 1		Model 2	
	Coef.	S.E.	Coef.	S.E.
Educational level (ref. Primary)				
Secondary	-0.66***	(0.17)	-0.66***	(0.17)
Tertiary	-1.25***	(0.19)	-1.26***	(0.19)
Gender: Female (ref. Male)				
	0.72***	(0.11)	0.82***	(0.11)
Age/10				
	-0.32***	(0.04)	-0.33***	(0.04)
Religiosity				
	0.12***	(0.02)	0.13***	(0.02)
Trust (Stealth democracy)				
	0.00	(0.02)	0.01	(0.03)
Left-Right self-placement (ref: Center)				
Left	-0.36	(0.23)		
Center-Left	-0.65***	(0.19)		
Center-Right	0.05	(0.20)		
Right	1.51***	(0.24)		
Does not locate	0.51**	(0.23)		
Vote intention (ref. PD)				
Forza Italia			1.51***	(0.24)
Movimento 5 Stelle			1.37***	(0.17)
Lega Nord			1.33***	(0.21)
Fratelli d'Italia			0.98***	(0.33)
Sinistra Italiana			0.01	(0.26)
Others			-0.02	(0.34)
Don't know/No vote			0.24	(0.16)
Constant				
	4.39***	(0.35)	3.61***	(0.35)
Observations				
	2,003		2,003	
R-squared				
	0.18		0.18	

Standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Table 3. A set of OLS regression models studying conspiracism scale (political predictors)

tional Election Study, collected in late 2016, we have shown that the support for conspiracy theories is widespread in Italy. About half of ITANES 2016 sample evaluate as plausible at least one conspiracy theory among the four proposed. Also, the paper tested different hypothesis presented in other contexts. Results are only partly in line with previous literature: first, as in other contexts, the educational level is negatively correlated with conspiracism; second, we find that religiosity is positively correlated with conspiracist ideation. Third, we find no correlation between trust in political institutions and conspiracism: this can be due to the fact that stealth democracy battery does not tap the trust in institution construct completely, but it could also be a relevant outcome of the Italian context.

Finally, we have tested the correlation (controlling for both value-related and socio-demographic variables) between conspiracism and political traits, such as left-right self-placement and vote choice. Results showed that right-wing voters, as well as Movimento 5 Stelle supporters, tend to present higher levels of conspiracism. Such a result comes partly as a surprise with respect to the previous literature concerning other national contexts. Previous studies based on national sample, indeed, showed no correlation (Oliver and Woods, 2014) or a higher level of conspiracism in the (left and right) extremes of the spectrum (van Prooijen et al., 2015). This result is useful to stress the specificity of the Italian case and serves as a compelling case for the study of conspiracism ideation in Europe.

The work also presents some drawbacks that must be taken into account. The first, and most important to evaluate the relevance of conspiracism in Italy correctly, concerns the nature of the data. As we have stressed above, ITANES panel is collected using CAWI interviews and presents serious overrepresentation of young and highly educated people. For these reasons, we are not allowed to generalize our results to the entire population, especially when we refer to the distribution of the beliefs in conspiracy theories—namely, the fact that about half of the sample evaluates as credible at least one conspiracy. Having said so, and without any other survey to estimate the percentage of citizens believing in conspiracy theories, we can say that the phenomenon is plainly relevant (even if we do not know clearly *how much*).

The second caveat concerns the causal relation that we assume in the regression models. Especially for what concerns Table 3, by putting as dependent variable the levels of conspiracism and as independent variable vote choices and left-right self-placement, we are implicitly assuming that believing in conspiracies is a consequence of partisanship, and, then, that partisanship is exogenous to conspiracism. Although this approximation has been made in other studies (see Oliver and Woods, 2014), little research efforts have been made to precisely assess the relationship. We are thus persuaded that the causal relation that links the two variables needs further investigation.

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