European Journal of Government and Economics

European Journal of Government and Economics

Number 9, issue 1, June 2020

European Journal of Government and Economics

Voting turnout in Greece: expressive or instrumental?

Irene Daskalopoulou[a]*

[a] University of Peloponnese, Department of Economics, Greece

* Corresponding author at: daskal@uop.gr

Abstract. The study analyses the micro-level determinants of voting turnout rates in Greece. In particular, we test for the effects of citizens' socio-economic features, political participation, activism and trust as pointing to either an expressive or instrumental voting decision process. The analysis involves bootstrap logistic regression techniques and ESS data covering the 2002-2011 period. Evidence is found of instrumental voting in Greece as suggested by the effects of absolute and relative income and the effect of civic participation and trust variables. In addition, the profile of voters is differentiated in the pre- and during the crisis periods. The study makes a twofold contribution. First, the suggested analysis is unique for Greece, and thus it provides important information regarding citizens' motives towards electoral participation. The second contribution relates to the study's relevance to policy analysis and design. Results suggest that not only ideology but also the economic agenda might be an important predictor of electoral participation and consequently, legitimization and the quality of democracy in Greece.

1. Introduction

Voting is perhaps the single most important evidence of the legitimacy pertaining to a democratic regime. As an essential element of participation, voting turnout constitutes the *sine qua non* of democratic elections and a means for people to legally take part in collective decision making processes and change their governing officials (Lipset, 1959; Dahl, 1982; Lijphart 1999; Schmitter and Karl, 1991). In that sense, political democracy is about regulating the political power held by elites in contrast to non-elites (Bollen, 1980), i.e. it is a synthesis of political freedom and political equality (Munck, 2016). The quality of democracy is subject to the existing nexus between the political system of a society and other characteristics, e.g. the modernization process, social justice and a market–based economic system (Lipset, 1959). These characteristics are actually societal choices and phenomena with multifaceted causes and consequences (Bollen, 1990; Munck and Verkuilen, 2002). Furthermore, they account for the difference between democracy and democratic standards, i.e. the difference between the formal rule of law and socio-political and economic outcomes (Lipset, 1959; Hewitt, 1977; Dahl, 1984; Gastil, 1987; Munck, 2016).

Participation in that sense is a critical element of democracy as operationalized in practice, since it practically safeguards political freedom and political equality from turning into mere formalities (Munck, 2016). When the majority of citizens have the power to change the status quo, then democracy carries the most desirable properties of stability, legitimacy and effectiveness (Lipset, 1959; Dahl, 1982; Lijphart 1999; Schmitter and Karl, 1991; Munck, 2016). These properties contribute to socio-economic welfare as different individual preferences are matched via elections (Lipset, 1959; Schmitter and Karl, 1991). Given that electoral participation may fluctuate alongside national contexts (e.g. compulsory voting, political system), types of elections, and time, important insights might be provided via country-level evidence regarding the individuals' decision to participate in national elections.

From the early 1980s onwards, voting abstention rates in Greece constantly increase at a slow, albeit standard, rate. This fact indicates the presence of a possibly persistent trend that merits deeper analysis. Political rights and political liberties in Greece are sufficient to characterize the country as a fair and stable political democracy (Danopoulos, 2017). Nevertheless, political accountability in the country is weak, in all its aspects (vertical, horizontal, and social) a fact that hampers the quality of democracy (Danopoulos, 2015). Increasing abstention rates point to a legitimization crisis that most probably relates to the wider civic culture qualities of the Greek society (Daskalopoulou, 2018a). The analysis of the various political, social and economic factors as predictors of voting turnout might offer important insights to the topic. To that extent, we analyze the effect of civic culture features on the probability of voting turnout in Greece. In particular, the present study has a twofold aim. First, we are interested in sketching the profile of voters (compared to non-voters) in order to identify the socio-economic and demographic characteristics of people who are more likely to participate in this crucial democratic legitimization process. The second aim relates to identifying the possible effect that formal and latent political participation forms, activism and trust might exercise upon an individual's decision to participate in national elections in Greece. Taken together these voting determinants will allow us to differentiate between expressive participation (acts motivated by sense of identity and obligation to neighbors or community, for example) and instrumental participation (acts motivated by the functional and political concerns of people such as protect personal investments and promote local businesses, for example) (Dahl, 1984; Talo and Mannarini, 2015) as the underlying motive of voting turnout in Greece.

As regards the study's contribution, two points need to be made. First, the suggested analysis is unique for Greece as no previous study has been performed in this area and will thus provide us with important information regarding people's motives towards electoral participation. The second contribution relates to the study's relevance for policy analysis and design. During the past decades, Greece has made important achievements with regard to its integration in the European Union (EU) regulation framework and procedures. Nevertheless, the country's socio-economic and institutional basis has proven unable to handle the impact of the financial crisis while the governmental authorities and political organizations have largely failed to gain widespread support for the necessary structural changes that might ensure Greece's

sustainable socio-economic development (Bitros, 2013; Bitros and Karayiannis, 2013). The decade of crisis was thus a period of profound asymmetry between individuals' motives and policy-makers' objectives. A clearer understanding of the motives underlying political participation procedures and the content of consent attributed to voting is crucial as for the country to be able to build stronger institutions that will help her address future challenges (Baltas, 2013; Bitros, 2015). Here we assume that knowledge on the potentially expressive or instrumental voting character of features such as economic status, formal and informal participation, activism and trust might enhance our understanding of how to build social consensus via actively supporting the key societal decision-making mechanisms of voting participation. The empirical analysis is based on ESS data referring to the 2002-2011 period for Greece. Analysis differentiates between the pre-crisis (2002-2008) and the crisis period (2011) and yields important evidence with regard to the profile of voters and the instrumental nature of their electoral participation.

The rest of the paper is organized as follows: Part 2 is devoted to a brief presentation of the study's theoretical context. Part 3 presents the model and data. Part 4 presents the results and Part 5 concludes the paper with a discussion of the study's findings.

2. Theoretical context: the democracy-participation relationship

Political democracy is a synthesis between political freedom and political equality rules that are set forth in order to facilitate collective decision making in the presence of different preferences (Lipset, 1959; Munck, 2016). It is a political system *'… which supplies regular constitutional opportunities for changing the governing officials'* (Lipset, 1959: 71), and regulates the difference in political power held by elites and non-elites (Bollen, 1980). Furthermore, constitutional democracy carries stability, legitimacy and effectiveness because it is the vehicle for achieving the wider socio-economic goals of society (Lipset, 1959; Dahl, 1982; Lijphart 1999; Schmitter and Karl, 1991). To that extent, political democracy is inexorably linked to social and economic goals, but it is not identical to social democracy and/or economic democracy (Lipset, 1959; Hewitt, 1977; Dahl, 1982; Gastil, 1987). Socio-economic concerns often enter the discussion regarding the quality of a democracy. This relates directly to the nexus between the political system and other societal choices such as the modernization process of societies, social justice and a market–based economic system (Bollen, 1990; Munck and Verkuilen, (2002).

According to Schmitter and Karl (1991: 83), we might identify political democracy through the presence of key democratic institutions such as: a) *consensus*, i.e. people's degree of agreement with substantive political actions and the role of the state, b) *participation*, i.e. rules supporting active and equal participation in politics should one wishes to, c) *access*, i.e. equal opportunities of groups to express their preferences, d) *responsiveness*, i.e. rulers must be held accountable for their actions through regular and fair processes, and e) *parliamentary sovereignty*, i.e. the legislature must not be the only body that makes rules or even be the only

body with the final authority to decide which laws are binding. These democratic institutions appear through an immense variety of empirical manifestations (Munck, 2016). The crucial role of the social environment of politics is clearly evidenced in the cross-national differences in democracy. We might categorize the origins of these differences into four wide areas. The first one relates to cross-national differences in the political system and the legitimacy of a country's institutions (e.g. confidence in a country's government and parliament) (Klingemann, 1999; Karp et al., 2003; Aarts and Thomassen, 2008; Ariely, 2015). The second one relates to the type and stock of social capital and in particular trust and solidarity as key societal features (Fukuyama, 2001; 2014; Putnam, 1995; Newton, 1997; Marozzi, 2015). The third area of differences among countries relates to the role of mass media and their interaction with society (Newton, 1997; Fukuyama, 2014; Ceron and Memoli, 2016). Finally, the fourth area relates to differences in what is known as abstract types of civic participation and engagement, or else disengagement, which is thought to be a genuine and active style of participation in modern economies (Ekman and Amnå, 2012; Talò and Mannarini, 2015). Thus, citizenship and the decision-making standards in a democracy evolve through societal characteristics such as mutual trust, fairness and the willingness to compromise, trust in institutions, civil organizations and social movements, and so on, or else, 'civic culture' (Dahl, 1984; Schmitter and Karl, 1991; Bollen, 1990; Newton, 1997; Norris 2001; Fukuyama, 2001; Yamagishi, 2001).

Given the democratic legitimization power of political participation, the developed countries view the increasingly declining turnout rates in their national (and supranational) electorates as an unexpected 'paradox' (Powell, 1986; Flickingerand Studlar, 1992). Cross country studies have come to analyze the phenomenon, and their evidence suggest that electoral participation is affected by the quality of institutions underlying a democratic regime, e.g. the role of mass media freedom and political representation, socio-demographic characteristics and political preferences, economic conditions and the political system (Matsusaka, 1995; Feddersen and Pesendorfer, 1996; Sobbrio and Navarra, 2010; Lewis-Beck and Nadeau, 2012; Birch, 2018). Summarizing the common ground in the field, a number of studies suggest that voting turnout is influenced by a great number of factors which might be distinguished into three wide sets namely, the socio-economic environment, institutions, and party systems (Powell, 1986; Blais and Dobrzynska, 1998; Franklin, 2001; Grönlund and Setälä, 2007).

While acknowledging these three sets of factors as crucial in determining turnout, their variation across national and supranational contexts suggests that we are still far from a thorough understanding of why people vote. At the theoretical level, macro approaches lack a plausible theory of human motivation that might be used to provide comprehensive explanations of electoral participation thus leading to a general aggregate level theory (Lane and Ersson, 1990). Indeed, differences in institutional arrangements and cultural factors account for cross-national variation in voter turnout rates (Jackman and Miller, 1995). Through a meta-analysis that assesses the empirical evidence of 83 aggregate-level studies, Geys (2006) argues that we indeed lack a 'core' model of voter turnout. On the other hand, micro level studies increasingly stress the need to analyze further the role of differences in political preferences, institutions and

the socio-economic environment in order to acquire more comprehensive knowledge of such phenomena as voting turnout. Indicative are the findings of Sobbrio and Navarra (2010) who stress that political preferences and education seem to play a significant role in the likelihood of 'communicating voting' and this expression is different between left-wing and right-wing voters. Similarly, in their individual level study Grönlund and Setälä (2007), analyze institutional trust, and in particular trust in parliament, as a key determinant that increases the likelihood of voting.

In the present study, we analyze voting turnout in Greece using individual level data that will allow us to determine the role of socio-demographic and economic conditions as well as the role of individual level preferences over institutions and the political system of the country. Available knowledge includes very few studies regarding the determinants of voting in Greece. At the macro level of analysis, indicative is the study of Alogoskoufis and Philippopoulos (1991) who extend the 'rational partisan model' to introduce the role of inflation and unemployment dynamics as voter determinants. More recently, the study of Nezi (2012) uses individual level data to test for the 'grievance asymmetry' hypothesis in relation to support for the incumbent party while Kosmidis (2013) analyses the link between voting intentions and the state of the economy during the crisis period. Other studies deal with the role of mass media in voting and voting intentions in Greece (Papagiannidis et al., 2012) and the role of subjective individual perceptions in economic voting (Freire and Costa Lobo, 2005).

Here, we follow Dahl (1984) and Talo and Mannarini (2015) and we try to differentiate between *expressive participation* (acts motivated by sense of identity and obligation to neighbors, community etc.) and *instrumental participation* (acts motivated by the functional and political concerns of people such as protect personal investments and promote local businesses etc.) as determinants of voting turnout in the case of Greece. To do so we set a twofold aim that consists of: 1) sketching the socio-demographic and economic profile of voters (compared to non-voters) and, 2) identifying the possible effect that formal and latent political participation, activism and trust might exercise upon an individual's decision to participate in elections in Greece. Taken together, these two sets of voting determinants will allow us to draw more informed conclusions regarding the individuals that are more likely to participate in such a crucial democratic legitimization process such as parliamentary elections.

Assessing the quality of democracy in post-1974 Greece[1], Danopoulos (2015; 2017) concludes that the country's quality of democracy is fair, but is in need of improvement. Daskalopoulou (2018a) reports low individual level rates of satisfaction with democracy in Greece that depend largely upon the perceived quality of civil institutions in the country. With constantly decreasing voting turnout rates in Greece, concern has grown over key aspects of our democracy, namely legitimization and representation. Voting turnout in Greece is compulsory. This is a quite important characteristic of the Greek democracy since, in terms of political democracy, mandatory electoral participation is a fair institution, an equitable and effective coordination device to support for the provision of democracy as a public good (Birch, 2018).

---

[1] In 1974, democracy has been restored in the country after the collapse of the dictatorship that ruled the country from 1967.
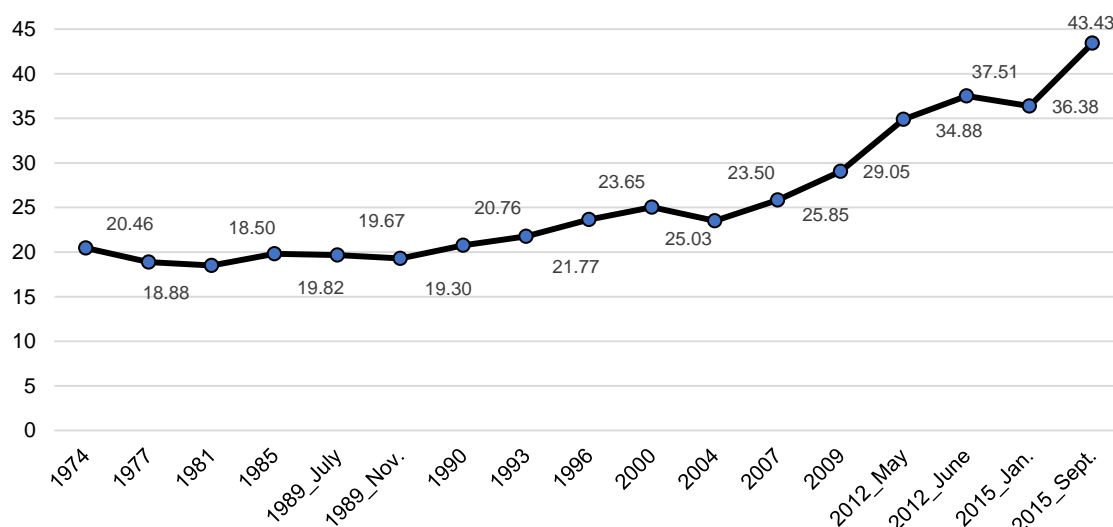
Figure 1. Voting abstention in parliamentary elections in Greece since 1974. Source: Own calculations based on Parliamentary elections data available at:

https://www.hellenicparliament.gr/en/Vouli-ton-Ellinon/To-Politevma/Ekloges/Eklogika-apotelesmata-New/

To that extent, both political and socio-economic equality are to be expected as the outcomes of a democracy (Birch, 2018). Nevertheless, Greece's aim of preserving electoral participation as compulsory is rather vague.

The compulsory voting clause is practically invalid since penalties to non-voters were rarely applied ever since the enactment of compulsory voting in the country while, in 2001 the interpretive act allowing for the introduction of penalties to non-voters was withdrawn (Malkopoulou, 2014). To that extent, we might relate compulsory voting to citizens' sense of duty towards the democratic regime, but the expected legitimization outcome of such a regime quality rule might not be fully realized.

As Figure 1 shows, voting abstention in parliamentary elections in Greece has more than doubled in the last four decades, from 20.46% in 1974 to 43.43% in 2015. In the latest parliamentary elections held on July 2019, the abstention rate was again very high, reaching 42.09%. These percentages might be somewhat overestimated due to old records cataloguing a bigger eligible to vote population. Nonetheless, the voting abstention trend is recorded as important and persistent.

Within this context, we analyze the individual level motivation and mobilization determinants of voting turnout in Greece by means of testing the following hypotheses:

> H1. The socio-demographic and economic characteristics of respondents affect their voting turnout decision.

H2. Formal political participation will exercise a statistically significant and positive (negative) effect on the probability of voting.

H3. Latent political participation will exercise a statistically significant and positive (negative) effect upon the probability of voting if it operates as complementary (substitute) to formal political participation.

H4. Activism will exercise a statistically significant and positive (negative) effect upon the probability of voting if it operates as complementary (substitute) to formal political participation.

H5. Trust will exercise a statistically significant and positive (negative) effect upon the probability of voting.

The presence and the sign of the above-described effects are expected to provide us with important insights as regards the individuals' expectations, perceptions, and the overall motivation and mobilization factors that underlie their decision to vote. H1 is considered the benchmark model that controls for the socio-demographic and economic characteristics of individuals which together with H2-H5 will provide us with important information about the profile of voters and the importance of economic or expressive considerations in this decision.

3. Empirical model and data

3.1. The model

As explained in the previous part, the aim is to identify those factors that will enhance the probability that an individual participates in elections. Thus, a person's decision to vote may be modelled as a binary (dichotomous) dependent variable of the form:

$$y = \begin{cases} 1, if\ person\ i\ voted \\ 0, otherwise \end{cases}, \qquad [1]$$

where y is the dependent variable denoting voters and non-voters amongst those that are eligible to vote. In principle, any continuous probability distribution defined over the real line will suffice to obtain consistent predictions of the probability of the outcomes expressed in equation [1] (Greene, 1997). Either a normal distribution (probit model) or a logistic distribution (logit model) can be used to model the above outcomes. The two distributions are expected to give similar predictions unless the sample contains very few responses/non-responses (i.e. very few values of Y equal to 1 or Y equal to 0) and/or there is wide variation in an important independent

variable (Greene, 1997; Amemiya, 1981). In our case, there is a very large difference in the percentage of voters compared to that of non-voters (see Table 1) so we have chosen to use a logistic distribution. In that case we get a logit model of the form:

$$\text{Prob}\left(y=1\right)=\frac{e^{\beta' x}}{1+e^{\beta' x}}=\Lambda\left(\beta' x\right),$$

[2]

where $\Lambda(.)$ indicates the logistic cumulative distribution function, x is a vector of explanatory variables, and β is a set of corresponding parameters that reflect the impact of changes in x on the probability of y*. Bootstrap logistic regression has been performed in order to obtain robust estimations and account for the lower (compared to the estimated voting abstention rate during the period of analysis) percentage of non-voters in our sample. Our estimation procedures involve stratified resampling using 50,000 samples and 95% bias corrected and accelerated (BCa) confidence intervals (Efron and Tibshirani, 1986). The goodness of fit measures usually reported are the percent correctly predicted and various pseudo-R squared measures, the most often cited being the likelihood-ratio test statistic suggested by McFadden (1974). Here, we report the χ^2 value of the omnibus test of the null hypothesis that the regression slopes for all predictors in the model are equal to zero, the log likelihood value (-2LL) which also tests for the significance of the explanatory variables model (full model) compared to the null model, two pseudo-R^2 values[2] that tell us approximately how much variation in the outcome is explained by the model and, the Hosmer and Lemeshow test of the goodness of fit, which is a Chi-square (χ^2) test of whether or not the model is an adequate fit to the data[3] (Pituch and Stevens, 2016). It should be noted though that goodness-of-fit measures in the case of binary response models is not as important as statistical and economic significance of the explanatory variables (Wooldridge, 2002; Estrella, 1998). A final note refers to the interpretation of the logit model coefficients. The estimated β's indicate the amount of increase (or decrease, if the sign of the coefficient is negative) in the predicted log odds of Y = 1 that would be predicted by a 1 unit increase (or decrease) in the predictor, holding all other predictors constant. Thus, in the case of the logit model the slope coefficient *B* is interpreted as the rate of change in the "log odds" of the dependent variable (Y) as an independent variable (X) changes. Because this explanation is not very intuitive, it is accustomed to compute the more intuitive exp*B,* which is the effect of the independent variable on the odds ratio[4].

---

[2] The versions are the Cox & Snell and the Nagelkerke tests which are again used as approximations since they vary significantly depending on sample size and specification (Cox and Snell, 1989; Nagelkerke, 1991).
[3] The null hypothesis is that the model is a 'good enough' fit to the data (*p=>.05*) and we will only reject this null hypothesis, i.e. the model is a 'poor' fit, if *p<.05*. The test is subject to sample size and the inclusion of interactions in the data so again it should be considered as an approximation (Hosmer and Lemeshow, 2013).
[4] The odds ratio is the probability of the event divided by the probability of the nonevent. For example, if expB_1 =2, then a one unit change in the independent variable X_1 would make the event twice as likely (.67/.33) to occur. For more details see: UCLA, SCG. Available at: https://stats.idre.ucla.edu/sas/modules/sas-learning-moduleintroduction-to-the-features-of-sas/.

3.2. Data and variables

The sample consists of a total number of 9,740 observations obtained from the four ESS waves that are available for Greece (Waves 1-2002, 2-2006, 4-2008 and 5-2011). A usable sample of 9,135 observations consisting of the respondents that are eligible to vote, has been selected. Voters represent 81.6% of the sample (7,863 obs.) and non-voters represent 13.9% of the sample (1,272 obs.) (Table 1).

Our dependent variable is a binary one taking the value of 1 if the respondent has voted in the last national elections and 0 if he/she hasn't. The independent variables have been divided into five sets of factors referring to: 1st) the socio-economic and demographic profile of the respondents (lnAge, lnEducation, Gender, Household size, Children, Lives with husband/wife/partner at household grid, Household Income, Income satisfaction), 2nd) their pattern of formal political participation (Worked in political party or action group last 12 months, Member of political party, Contacted politician or government official last 12 months), 3rd) their pattern of latent political participation (Feel closer to a particular party than all other parties, How interested in politics, TV watching, news/politics/current affairs on average weekday, Placement on left to right scale), 4th) their pattern of activism (Worn or displayed campaign badge/sticker last 12 months, Signed petition last 12 months, Taken part in lawful public demonstration last 12 months, Boycotted certain products last 12 months, Worked in another organization or association last 12 months), 5th) the individuals' level of generalized and institutional trust (Most people can be trusted or you can't be too careful, Trust in country's parliament, Trust in the legal system, Trust in the police, Trust in the European Parliament, Trust in the United Nations). Finally, wave dummies have been used to test for the presence of time structural breaks in our model. Table 2 presents the definition and measurement of variables as well as basic descriptive statistics for the whole sample and the voters and the non-voters sub-samples.

Table 1. Distribution of voters and non-voters in the sample.

	Wave 1	Wave 2	Wave 4	Wave 5	Total
Voters	2,139	2,050	1,692	1,982	7,863
Non-voters	248	229	252	543	1,272
Not eligible to vote	167	126	125	187	605
Total	2,554	2,405	2,069	2,712	9,740
Total usable sample	2,387	2,279	1,944	2,525	9,135

Source: Own calculations using ESS data for Greece.

Table 2. Definition, measurement and basic descriptive statistics for the whole sample and the voters / non-voters sub-samples.

Variable definition and measurement	Basic descriptive statistics					
	All		Voters		Non-Voters	
	Mean	SD	Mean	SD	Mean	SD
Socio-demographic and economic characteristics						
Age, lnAge of respondent, calculated (13-98)	48.20	18.63	50.57	17.48	43.17	20.70
Education, lnYears of full-time education completed (0-28)	10.56	4.49	10.44	4.63	11.06	4.21
Gender (dummy, 1=male)	.44	.50	.44	.50	.42	.49
Children (dummy, 1=Yes)	.41	.49	.43	.50	.30	.46
Household Size, lnNumber of people living regularly at the household	2.69	1.31	2.71	1.30	2.55	1.34
Married (dummy, 1=Lives with husband/wife/partner at household grid)	.60	.49	.65	.48	.42	.49
Household Income, in twelve income categories (1-12)	4.82	2.21	4.89	2.21	4.50	2.21
Income satifaction, (0-3, 3 = living comfortably on present income)	1.35	.89	1.37	.89	1.26	.88
Formal political participation						
Worked in political party or action group last 12 months (dummy, 1=Yes)	.04	.21	.05	.22	.02	.12
Member of political party (dummy, 1=Yes)	.06	.24	.07	.25	.01	.12
Contacted politician or government official last 12 months (dummy, 1=Yes)	.12	.32	.13	.34	.04	.20
Latent political participation						
Feel closer to a particular party than all other parties (dummy, 1=Yes)	.51	.41	.58	.49	.23	.42
How interested in politics (0-3, 0 = not at all interested)	1.05	.95	1.12	.95	.78	.90
TV watching, news/politics/current affairs on average weekday (0-7, 0 = no time at all)	1.81	1.47	1.90	1.47	1.47	1.43
Placement on left to right scale (0-10, 10 = right)	5.42	2.17	5.47	2.18	5.02	2.05
Activism						
Worn or displayed campaign badge/sticker last 12 months (dummy, 1=Yes)	.03	.17	.03	.17	.02	.13
Signed petition last 12 months dummy, 1=Yes)	.04	.21	.05	.21	.03	.17
Taken part in lawful public demonstration last 12 months (dummy, 1=Yes)	.06	.25	.07	.25	.05	.23
Boycotted certain products last 12 months (dummy, 1=Yes)	.10	.30	.10	.31	.10	.31
Worked in another organisation or association last 12 months (dummy, 1=Yes)	.05	.22	.05	.23	.02	.15
Generalized and institutional trust						
Most people can be trusted or you can't be too careful (0-10, 10 = complete trust)	3.87	2.40	3.81	2.40	4.05	2.39
Trust in country's parliament (0-10, 10 = complete trust)	3.74	2.74	3.82	2.74	3.01	2.64
Trust in the legal system (0-10, 10 = complete trust)	5.07	2.90	5.10	2.88	4.55	2.92
Trust in the police (0-10, 10 = complete trust)	5.51	2.87	5.61	2.84	4.84	2.97
Trust in the European Parliament (0-10, 10 = complete trust)	4.43	2.82	4.48	2.80	3.71	2.78
Trust in the United Nations (0-10, 10 = complete trust)	3.74	2.79	3.72	2.76	3.36	2.70

Source: Own calculations using ESS data for Greece.

4. Results

Table 3 presents summary statistics for the estimated models. Our benchmark model (M1) is the model including only the socio-economic and demographic and the time variables (control variables model). M1 is improved with the inclusion of the proposed participation and trust variables, and thus the full model (M2) is preferred.

Model 2 referring to the whole period under study presents a very satisfactory fit to the data and can thus be used as a reference point in the analysis of the predictors of voting turnout in Greece (Table 4). However, since there is a structural break in the model, evidenced by the statistically significant sign of the 2011 wave dummy, we have split the sample into the pre and the crisis periods and estimated models 3 and 4, respectively. After robust estimation procedures were applied the structural break in our model is estimated as negative suggesting that the probability of voting decreased in the crisis period (Table 4). Other important changes in the estimated coefficients refer to the effect of education and the income variables (Table 4).

Comparing the results of models 3 and 4 (Table 5), we see that the socio-economic and demographic profile of voters in the two periods is different (H1 is confirmed). In the pre-crisis period, the probability of voting turnout increases with age, children and income. In contrast, during the crisis, the probability of voting turnout increases with age, marriage and household size. As regards the economic condition of respondents, it is important that income satisfaction is a positive voting predictor while income levels turn to a negative predictor. The difference in the profile of voters in the two periods is important evidence. In the pre-crisis period voters are older, higher income people with children in their family. In the crisis period, we see that voting turnout is more likely to occur for older, married people with larger household size who are satisfied with their relative income position but unsatisfied with their absolute income level.

Table 3. Model statistics**.**

Model summary	M1	M2	M3	M4
N	9,135	9,135	6,610	2,525
X^2 (p)	388.581 (p<.001)	357.609 (p<.001)	232.778 (p<.001)	119.190 (p<.001)
-2LL	4,376.094	2,566.537	1,615.719	916.336
Cox & Snell R^2	.062	.078	.070	.093
Nagelkerke R^2	.114	.160	.160	.163
Hosmer & Lemeshow χ^2Test (p)	9.029 (p=.340)	6.031 (p=.644)	6.577 (p=.583)	7.590 (p=.475)
Classification[a]				
Overall percentage correct	85.7	89.4	91.3	84.9
Sensitivity	97.4	98.4	98.8	96.2

[a]Classification cutoff point 0.65.

Table 4. Bootstrap logistic regression estimates: benchmark model and full model**.**

	Benchmark model (M1)				Full model (M2)			
	B	Wald χ^2	p	Exp(B)	B	Wald χ^2	p	Exp(B)
Constant	-4.089	44.800	.000	.017	2.710	3.282	.070	15.033
Socio-demographic & economic controls								
Age	1.260	103.744	.000	3.524	.935	29.372	.000	2.547
Education	.270	8.226	.004	1.310	.222	2.523	.112	1.249
Gender	.073	.798	.372	1.076	.073	.446	.504	1.076
Married	.461	21.370	.000	1.586	.327	6.035	.014	1.387
Household Size	.374	11.862	.001	1.454	.281	3.831	.050	1.324
Children	.066	.340	.560	1.069	.254	2.778	.096	1.289
Income satisfaction	.165	10.391	.001	1.180	.107	2.309	.129	1.113
Household Income	.000	.000	.997	1.000	.005	.031	.861	1.005
wave 1 2002	.086	.446	.504	1.089	.027	.026	.871	1.028
wave 2 2006	.066	.252	.616	1.068	.175	.989	.320	1.191
wave 5 2010	-.777	45.567	.000	.460	-.348	4.832	.028	.706
Formal political participation								
Member political party					-.551	2.287	.130	.576
Contacted politician / official					-.405	3.415	.065	.667
Worked political party					.017	.002	.966	1.017
Latent political participation								
TV watching, news / politics / current affairs					-.003	.007	.935	.997
Closer to particular party					-1.031	76.478	.000	.357
Interest in politics					-.170	6.498	.011	.844
Left - right placement					.074	7.070	.008	1.077
Activism								
Worked organization / association					-.229	.458	.499	.795
Campaign badge / sticker					-.324	.456	.500	.723
Signed petition					-.483	2.001	.157	.617
Public demonstration					-.295	1.621	.203	.745
Boycotted products					.515	9.005	.003	1.674
Trust								
Generalized trust					.006	.054	.816	1.006
Country's Parliament					.024	.676	.411	1.024
Legal system					-.075	6.452	.011	.928
Police					.049	3.338	.068	1.050
European Parliament					.046	1.685	.194	1.048
United Nations					-.067	4.632	.031	.935

Table 5. Bootstrap logistic regression estimates: full model for the pre- and during the crisis periods**.**

	Full model: pre-crisis (M3)				Full model: crisis (M4)			
	B	Wald χ^2	p	Exp(B)	B	Wald χ^2	p	Exp(B)
Constant	.402	.048	.827	1.495	7.636	5.227	.022	2071.747
Socio-demographic & economic controls								
Age	1.152	27.135	.000	3.165	.642	5.048	.025	1.900
Education	.116	.396	.529	1.123	.369	2.617	.106	1.446
Gender	.165	1.379	.240	1.180	-.081	.199	.655	.922
Married	.238	1.961	.161	1.269	.404	3.262	.071	1.497
Household Size	.263	2.183	.140	1.301	.450	3.000	.083	1.568
Children	.370	3.581	.058	1.448	.062	.058	.809	1.064
Income satisfaction	-.022	.056	.814	.979	.329	8.127	.004	1.390
Household Income	.078	3.966	.046	1.081	-.095	4.137	.042	.910
wave 1 2002	.014	.006	.937	1.014				
wave 2 2006	.155	.730	.393	1.168				
Formal political participation								
Member political party	-.445	1.105	.293	.641	-.873	1.330	.249	.418
Contacted politician / official	-.414	2.414	.120	.661	-.664	2.622	.105	.515
Worked political party	.233	.275	.600	1.262	-.727	.437	.509	.483
Latent political participation								
TV watching, news / politics / current affairs	.003	.004	.952	1.003	.012	.032	.859	1.012
Interest in politics	-.201	5.053	.025	.818	-.133	1.640	.200	.876
Closer to particular party	-.945	42.842	.000	.389	-1.289	34.292	.000	.276
Left - right placement	.085	5.625	.018	1.088	.064	1.971	.160	1.066
Activism								
Worked organization / association	-.168	.175	.676	.845	-.476	.518	.472	.621
Campaign badge / sticker	.126	.055	.815	1.134	-1.210	1.217	.270	.298
Signed petition	-1.093	4.672	.031	.335	.250	.257	.612	1.284
Public demonstration	.218	.474	.491	1.244	-.657	3.651	.056	.518
Boycotted products	.526	6.028	.014	1.693	.603	4.098	.043	1.828
Trust								
Generalized trust	.013	.192	.661	1.013	-.007	.027	.869	.993
Country's Parliament	.026	.526	.468	1.027	.023	.196	.658	1.024
Legal system	-.066	2.922	.087	.936	-.078	2.753	.097	.925
Police	.045	1.650	.199	1.046	.049	1.359	.244	1.051
European Parliament	.056	1.596	.207	1.057	.032	.243	.622	1.033
United Nations	-.090	5.731	.017	.914	-.046	.551	.458	.955

In the two periods, important changes are observed with regard to the effect of the social capital variables analyzed. Formal political participation exerts a statistically significant but negative effect on the probability of voting (H2 is confirmed). More specifically, formal political participation in the form of political contacts decreases the probability of voting. This effect, however, is not confirmed when the two periods are analyzed separately (H2 is not confirmed in M3, M4). Mixed results are presented in the case of latent political participation (H3 is confirmed). As shown, the probability of voting decreases for those respondents who feel closer to a particular party and show higher levels of interest in politics while it increases as placement on the left to right political scale increases. In the crisis period, feeling closer to a particular party is the only statistically significant voting predictor that again exerts a negative effect. Activism also presents mixed effects as a determinant of voting turnout (H4 is confirmed). In the pre-crisis period, the probability of voting increases for respondents which have boycotted certain products and decreases for the respondents who have signed petitions. In the crisis period, voting turnout increases for respondents who have boycotted certain products and decreases for those who have participated in public demonstrations. Finally, as regards the effect of trust on the probability of voting turnout we see that generalized trust does not affect the decision to vote while institutional trust is a voting predictor (H5 is confirmed). It is important, however, that trust in the legal system is found a negative voting predictor, and this finding is observed in both periods. Trust in supranational institutions such as the UN is also a negative voting predictor but the effect of this variable is reported only in the pre-crisis period. It could be associated with Greek citizens' increased awareness over the global role and interventions of such institutions, albeit it is a finding that merits further research in the future.

Given ESS data availability, and bootstrap estimation, other variables that could be used as explanatory variables in the current context were also tested for their possible effect. In particular, we have tested for the possible sensitiveness of our results with regard to the respondents': a) employment status and type of employment; b) political beliefs (trust in politicians, trust in political parties); c) use of other sources of information about politics (newspaper reading, politics/current affairs on average weekday, and/or radio listening, news/politics/current affairs on average weekday); and d) abstract forms of engagement (feelings about politics, e.g. politics too complicated to understand, difficulty in making mind up about political issues) (Mitsopoulos and Pelagidis, 2009; Ceron and Memoli, 2016; Daskalopoulou, 2018b; Talò and Mannarini, 2015; Ekman and Amnå, 2012). None of these variables has been found to exert a statistically significant effect on the probability of voting turnout. Excluding them from the estimated models did not affect their fit and the corresponding classification rates. It is possible that the effect of these variables is captured by the ones already included in the analysis. An additional possible explanation might relate to the high non-response rate of some of these variables (e.g. the news variables, trust in politicians, trust in political parties). In any case however, their possible effect should be tested in future research studying voting turnout (and abstention) in the post-crisis era in the country.

5. Conclusion and discussion

The present study aims at identifying the determinants of voting turnout in Greece using European Social Survey data for the 2002-2011 period and a binary dependent variable model. Five empirical hypotheses are formed and tested in the context of the study using bootstrap logistic regression techniques. Through the estimation of several models we test for the socio-demographic and economic characteristics that affect the respondents' voting turnout decision, and the effect of formal political participation, latent political participation, activism, and trust (generalized and institutional), on the probability a person decides to vote. The analysis controls for the structural break observed in the model after the onset of the economic crisis in the country and particularly after the enforcement of the first financial consolidation measures. Empirical results sketch two different profiles that are compatible with a backward turn, or perhaps a delay, in the democratic modernization process of Greece. More specifically, in the pre-crisis period, we see that the voters are people who value contemporary forms of civic engagement (latent political participation and activism) and tend to distrust formal institutions such as the legal system and supranational institutions. Taken together, these effects seem to suggest the presence of a political distrust trend (or a more apolitical stance). This trend involves older higher income respondents having children and who consider other forms of civic engagement, e.g. petitions, as a substitute to standard civil participation processes, and distrust public institutions (legal system) and supranational institutions like the UN. In the crisis period, the socio-demographic and economic profile of voters is different. Results show that age, marriage and household size are strong positive predictors of voting in that period. An interesting finding relates to the effect of the income variables. Voting turnout increases as income satisfaction increases and decreases with absolute income level. Thus, we might argue that there is a differentiated stance after the onset of the financial consolidation measures which has caused those satisfied with their income to increase their voting rates and those of higher absolute income to decrease their voting rates.

Taken together, the evidence for the two periods support the argument that citizens vote in accordance with instrumental voting. People decide on the basis of income, while 'traditional' forms of formal engagement and political attachment seem to cause negative effects. Having in mind two crucial contextual factors, namely (1) the time of the analysis (bailout programs and fiscal measures, radical political changes) and (2) the no-penalties compulsory voting clause, evidence is provided that pecuniary interests are related to strongly motivated voters.

The present findings are important also in terms of policy analysis in the field. The importance of economic considerations for voting participation clearly indicates that citizens' support to state regime is interlinked with growth and prosperity prerequisites. This, in turn, adds complexity to an existing backward spiral that commenced with the onset of the financial crisis, and the measures employed to address it, and continuous to exacerbate in the presence of other socio-economic challenges and phenomena such as unemployment and exploitation in

the workplace, migration, rising crime and insecurity etc. (Pantazidou, 2013; Voulgarelli-Christidou, 2016). Furthermore, the economic and democratic depression experienced in Greece (Bellucci et al., 2012) coincides with the citizens' deeper knowledge and understanding of how country level decisions are transferred to European Union and taken therein in favor of an enlarged but not necessarily integrated EU community (Baltas, 2013; Bitros, 2015). To the extent that Greece has still important work to do in terms of implementing the measures agreed under its bailout package and forwarding the deepening of structural reforms, widespread societal consensus is required as these measures will be coming in a 'tired' socio-economic context that is difficult to provide consent to inefficient, unfair and unproductive measures such as the ones implemented in the last years. To that extent it is important that the country builds strong institutions that might provide the societal consensus that is detrimental for the sustainability of measures that are taken in order to deal with the crisis effectively, and perhaps avoid a future one. In modern democracies, abstract types of trust prevail and thus a challenge is at hand to identify the cognitive mobilization mechanisms that will be at work in this phase of a society's overall development process (Newton, 1997). Fukuyama (2001; 2014) makes similar observations regarding the way in which quality institutions enhance trust in democratic procedures. He suggests that a society's stock of trust can be destroyed by a state that is inefficient in the provision of necessary public goods, and particularly property rights, public safety, control of the state's involvement in market activities (Fukuyama, 2001). Albeit a stable and mature constitutional democracy that sustains fair political rights and liberties to her citizens (Danopoulos, 2017) Greece faces a democratic quality and depth challenge. Increasing abstention rates point to a legitimization crisis that most probably relates to the wider civic culture qualities of the Greek society (Bitros, 2013; Daskalopoulou, 2018a). In particular, rent seeking activities, government inefficiency and partisan politics have built change resistant barriers (Bitros, 2013). To that extent, it is important to verify that in the case of Greece, the voting decision seems to have a strong instrumental character. Income matters and citizens seem to move away from political institutions and turn to alternative forms of engagement either as a complement or a substitute to formal political participation. To that extent the future might bring about a combination of reactions/trends towards voting which will involve an increase in commitment to vote as the ultimate instrument of participation; a trend towards a more apolitical (pathetic) stance; and a trend towards alternative forms of civic engagement (non-standard, abstract forms of engagement). The current findings suggest that wider alternative political engagement/disengagement mechanisms are present in Greek society, and they merit attention and future research. The analysis of the potentially long run effects that the crisis' measures and developments might have on citizens' motivation to vote is an additional issue for future research in the field.

Acknowledgments

References

Alogoskoufis, G. and Philippopoulos, A. (1991). Political Parties, Elections and Inflation in Greece, CEPR Discussion Papers 547, C.E.P.R. Discussion Papers.

Baltas, N.C. (2013). The Greek financial crisis and the outlook of the Greek economy. The Journal of Economic Asymmetries, 10(1), 32-37.https://doi.org/10.1016/j.jeca.2013.09.002

Bellucci, P., Lobo, M.C., and Lewis-Beck, M.S. (2012). Economic crisis and elections: The European periphery. Electoral Studies, 31(3), 469-471. https://doi.org/10.1016/j.electstud.2012.02.009

Birch, S. (2018). Democratic norms, empirical realities and approaches to improving voter turnout. Res Publica, 24(1), 9-30. https://doi.org/10.1007/s11158-017-9380-3

Bitros, G.C. (2013). From riches to rags or what went wrong in Greece. Journal of Economic and Social Measurement, 38(1), 5-39. https://doi.org/10.3233/JEM-130370

Bitros, G.C. (2015). European Union failures in Greece and some possible explanations. In: G.C. Bitros & N.C. Kyriazis (Eds.) Essays in Contemporary Economics (pp. 3-22). Switzerland: Springer International Publishing. https://doi.org/10.1007/978-3-319-10043-2_1

Bitros, G.C., and Karayiannis, A.D. (2013). Creative Crisis in Democracy and Economy. Springer Science and Business Media. https://doi.org/10.1007/978-3-642-33421-4

Blais, A., and Dobrzynska, A. (1998). Turnout in electoral democracies. European Journal of Political Research, 33(2), 239-261. https://doi.org/10.1111/1475-6765.00382

Bollen, K.A. (1980). Issues in the comparative measurement of political democracy. American Sociological Review, 45, 370-390. https://doi.org/10.2307/2095172

Bollen, K.A. (1990). Political democracy: conceptual and measurement traps, Studies in Comparative International Development, 25 (1), 7-24. https://doi.org/10.1007/BF02716903

Ceron, A. and Memoli, V. (2016), Flames and debates: do social media affect satisfaction with democracy?, Social Indicators Research, 126(1), 225-240. https://doi.org/10.1007/s11205-015-0893-x

Cox, D.D. and Snell, E.J. (1989). The Analysis of Binary Data (2nd ed.). Chapman and Hall. https://doi.org/10.2307/2531476

Dahl, R.A. (1982). Dilemmas of Pluralist Democracy, New Haven, Yale University Press.

Dahl, R.A. (1984). Modern Political Analysis, 4th ed., Englewood Cliffs, N.J.: Prentice-Hall.

Danopoulos, C.P. (2015). Accountability and the quality of democracy in Greece. Mediterranean Quarterly, 26(4), 110-131. https://doi.org/10.1215/10474552-3425211

Danopoulos, C.P. (2017). Civil liberties and rights, equality and the quality of democracy in Greece. Journal of Balkan and Near Eastern Studies, 19(3), 225-242. https://doi.org/10.1080/19448953.2017.1267364

Daskalopoulou, I. (2018a). Satisfaction with democracy and social capital in Greece. International Journal of Social Economics, 45(4), 614-628. https://doi.org/10.1108/IJSE-03-2017-0063

Daskalopoulou, I. (2018b). Civic participation and soft social capital: evidence from Greece. European Political Science, 17(3), 404-421. https://doi.org/10.1057/s41304-017-0114-y

Efron, B. and Tibshirani, R. (1986). Bootstrap methods for standard errors, confidence intervals, and other measures of statistical accuracy. Statistical Science, I, 54-77. https://doi.org/10.1214/ss/1177013815

Ekman, J. and Amnå, E. (2012). Political participation and civic engagement: towards a new typology, Human Affairs, 22, 283-300. https://doi.org/10.2478/s13374-012-0024-1

Feddersen, T.J., and Pesendorfer, W. (1996). The swing voter's curse. The American Economic Review, 408-424.

Flickinger, R.S., and Studlar, D.T. (1992). The disappearing voters? Exploring declining turnout in Western European elections. West European Politics, 15(2), 1-16. https://doi.org/10.1080/01402389208424903

Franklin, M.N. (2001). How structural factors cause turnout variations at European Parliament elections. European Union Politics, 2(3), 309-328. https://doi.org/10.1177/1465116501002003003

Freire, A., and Lobo, M. C. (2005). Economics, ideology and vote: Southern Europe, 1985-2000. European Journal of Political Research, 44(4), 493-518. https://doi.org/10.1111/j.1475-6765.2005.00236.x

Fukuyama, F. (2001). Social capital, civil society and development. Third World Quarterly, 22(1), 7-20. https://doi.org/10.1080/713701144

Fukuyama, F. (2014). Political Order and Political Decay: From the Industrial Revolution to the Globalization of Democracy. Macmillan.

Gastil, R.D. (1987). Freedom in the World: Political Rights and Civic Liberties, 1986-1987, Westport, CT, Greenwood Press.

Geys, B. (2006). Explaining voter turnout: A review of aggregate-level research. Electoral Studies, 25(4), 637-663. https://doi.org/10.1016/j.electstud.2005.09.002

Greene, W. (1997).Econometric Analysis, Prentice-Hall International, NY.

Grönlund, K., and Setälä, M. (2007). Political trust, satisfaction and voter turnout. Comparative European Politics, 5(4), 400-422. https://doi.org/10.1057/palgrave.cep.6110113

Hewitt, C. (1977). The effect of political democracy and social democracy on equality in industrial societies: a cross-national comparison. American Sociological Review, 42, 450-464. Hosmer, D.W. and Lemeshow, S. (2013). Applied Logistic Regression. New York: Wiley. https://doi.org/10.2307/2094750

Jackman, R.W., and Miller, R.A. (1995). Voter turnout in the industrial democracies during the 1980s. Comparative Political Studies, 27(4), 467-492. https://doi.org/10.1177/0010414095027004001

Karp, J.A., Banducci, S.A, and Bowler, S. (2003). To know it is to love it?, Comparative Political Studies, 36 (3), 271-292. https://doi.org/10.1177/0010414002250669

Klingemann, H-D. (1999). Mapping political support in the 1990s: a global analysis. In: P. Norris (Ed.), Critical Citizens: Global Support for Democratic Government (pp. 31-56), Oxford, UK: Oxford University Press. https://doi.org/10.1093/0198295685.003.0002

Kosmidis, S. (2013). Government constraints and economic voting in Greece. Hellenic Observatory papers on Greece and Southeast Europe (70). Hellenic Observatory, London School of Economics and Political Science, London, UK.

Lane, J.E., and Ersson, S. (1990). Macro and micro understanding in political science: What explains electoral participation?. European Journal of Political Research, 18(4), 457-465. https://doi.org/10.1111/j.1475-6765.1990.tb00243.x

Lewis-Beck, M.S., and Nadeau, R. (2012). PIGS or not? Economic voting in Southern Europe. Electoral Studies, 31(3), 472-477. https://doi.org/10.1016/j.electstud.2012.02.008

Lijphart, A. (1999).Patterns of Democracy: Government Forms and Performance in Thirty-Six Countries, New Haven, CT: Yale University Press.

Lipset, S.M. (1959). Some social requisites of democracy; economic development and political legitimacy. The American Political Science Review, 53 (1), 69-105. https://doi.org/10.2307/1951731

Malkopoulou, A. (2014). The History of Compulsory Voting in Europe: Democracy's Duty?. Routledge. https://doi.org/10.4324/9781315777399

Marozzi, M., (2015). Measuring trust in European public institutions. Social Indicators Research, 123 (3), 879-895. https://doi.org/10.1007/s11205-014-0765-9

Matsusaka, J. G. (1995). Explaining voter turnout patterns: An information theory. Public Choice, 84 (1-2), 91-117. https://doi.org/10.1007/BF01047803

McFadden, D. (1974). Conditional logit analysis of qualitative choice analysis, In: Zarembka P. (Ed.), Frontiers in Econometrics, Academic Press, NY, pp. 105-142.

Mitsopoulos, M. and Pelagidis, T. (2009). Viking in Greece: kleptocratic interest groups in a closed, rent-seeking economy. Cato Journal, 29(2), 389-406.

Munck, G. L. (2016).What is democracy? A reconceptualization of the quality of democracy. Democratization, 23 (1), 1-26. https://doi.org/10.1080/13510347.2014.918104

Munck, G.L. and Verkuilen, J. (2002). Conceptualizing and measuring democracy: evaluating alternative indices. Comparative Political Studies, 35 (1), 5-34. https://doi.org/10.1177/001041400203500101

Nagelkerke, N.J.D. (1991). A note on a general definition of the coefficient of determination. Biometrika, 78(3), 691-692. https://doi.org/10.1093/biomet/78.3.691

Nezi, R. (2012). Economic voting under the economic crisis: Evidence from Greece. Electoral Studies, 31(3), 498-505. https://doi.org/10.1016/j.electstud.2012.02.007

Norris, P., (2001). Making democracies work: social capital and civic engagement in 47 societies, No. rwp01-036.

Pantazidou, M. (2013). Treading new ground: A changing moment for citizen action in Greece. Development in Practice, 23(5-6), 755-770. https://doi.org/10.1080/09614524.2013.801399

Papagiannidis, S., Coursaris, C.K., and Bourlakis, M. (2012). Do websites influence the nature of voting intentions? The case of two national elections in Greece. Computers in Human Behavior, 28(2), 300-307. https://doi.org/10.1016/j.chb.2011.09.013

Pituch, K.A., and Stevens, J. (2016). Applied Multivariate Statistics for the Social Sciences: Analyses with SAS and IBM's SPSS (6th ed.). New York: Routledge. https://doi.org/10.4324/9781315814919

Powell, G.B. (1986). American voter turnout in comparative perspective. American Political Science Review, 80(1), 17-43. https://doi.org/10.2307/1957082

Putnam, R.D. (1995). Bowling alone: America's declining social capital. Journal of Democracy 6(1), 65-78. https://doi.org/10.1353/jod.1995.0002

Schmitter, P.C. and Karl, T.L. (1991). What democracy is … and is not, Journal of Democracy, 2(3), 75-88. https://doi.org/10.1353/jod.1991.0033

Sobbrio, F., and Navarra, P. (2010). Electoral participation and communicative voting in Europe. European Journal of Political Economy, 26(2), 185-207. https://doi.org/10.1016/j.ejpoleco.2010.01.002

Talò, C. and Mannarini, T., (2015).Measuring participation: Development and validation the Participatory Behaviors Scale. Social Indicators Research, 123(3), 799-816. https://doi.org/10.1007/s11205-014-0761-0

Voulgarelli-Christidou, C. (2016). Dangers of an urban crisis within the European Union: fuelling xenophobia and undermining democracy. Perspectives on Global Development and Technology, 15(1-2), 236-245. https://doi.org/10.1163/15691497-12341385

Wooldridge, J.M. (2002). Econometric Analysis of Cross Section and Panel Data, The MIT Press, MA.

Yamagishi, T., (2001). Trust as a form of social intelligence, In K.S. Cook (Ed.), Trust in Society (pp. 121-147), Russell Sage Foundation, New York City, New York.