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Individual-Level Evidence on the Causal Relationship Between Social Trust and Institutional Trust

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Abstract
The study accounts for the presence of endogeneity in the interdependence between social and institutional trust. Using Greece as a case study we provide valuable insights regarding the bidirectional nature of this relationship and its sign. Consequently, more accurate results might be provided regarding the determinants of both types of trust and the way in which these may be discerned in a given society. We use microdata extracted from the European Values Surveys (2002–2010) and instrumental variables techniques. Social trust is constructed as a three-item scale variable comprising generalized trust, fairness and helpfulness. The institutional trust variable is constructed as the sum of seven variables referring to trust in political institutions, civil security institutions and, supranational political institutions. In line with the hypothesis formed here, the results indicate the presence of endogeneity in the social and institutional trust interrelationship. When accounted for, this endogeneity entails different results as regards the sign of the effect that institutional trust exerts upon social trust, which turns from positive to negative. The study contributes to the limited empirical knowledge regarding the micro level two-way causal relationship between social trust and institutional trust. The study's findings provides us with a more informative and accurate picture of the underlying dynamics of building trust in a society. Important research and policy level issues draw from these findings.

Keywords Generalized trust · Institutional trust · Social trust · Endogeneity · Greece

JEL Classifications D91 · H83

1 Introduction

Trust is acknowledged as a core feature of societies. It is an 'irreducible and multidimensional social reality' (Lewis and Weigert 1985: 967) that underlies not only individuals' actions but also, the order of the society (Luhmann 2000). As such, trust is found in all types of societies (e.g. capitalist and socialist, poor and rich), and constitutes the

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behavioural underwriting of the national culture (Hayashi et al. 1999; Yamagishi 2001). If trust is good, i.e. it has a socially desirable content (Levi 1996), then it provides the cultural basis for achieving democratic governance, economic prosperity and the well-being of individuals (Putnam 1993; 1995; Fukuyama 1999; Knack 2002; Dasgupta 2005; Growiec and Growiec 2016; Fu 2018).

The social mechanisms underlying the processes of building, maintaining and restoring trust as a cultural functioning, might best be discerned at the national level. National culture is a powerful, and relatively stable, superstructure that consists of common patterns of thinking (collective beliefs, social norms etc.) amongst otherwise heterogeneous individuals (Yamagishi 2001; Tabellini 2008, 2010). The qualities of a national civic culture are, thus, illustrative paradigms of the levels of cooperation and competition, freedom and sanctioning or, else, of the way in which trust (or distrust) has been embedded in the rules underlying power and authority to all members and groups of the society (Tabellini 2008, 2010; Tabellini and Harari 2009; Fukuyama 1999). Therefore, when analysing trust, and its determinants, we should better acknowledge it as a context specific phenomenon (Glanville and Paxton 2007) embedded in an overwhelming diversity of national-level societal frameworks (Pichler and Wallace 2007; Bjørnskov 2007; Wagner et al. 2009; Fu 2018).

Social trust and institutional trust can be said to be the two most important types of trust in a society. Social trust is taken to denote generalised trust, i.e. trust to unknown (general) others in a society, while institutional trust refers to regime support and confidence in government and other social structures such as, political parties, the parliament, etc. (Wagner et al. 2009). Following Putnam's (1993, 1995) seminal contribution, regarding the role of social trust in promoting and sustaining viable economies, much research has been devoted on analysing the relationship between these two types of trust. However, particular emphasis has been placed on identifying the key determinants of generalised trust in a society and, cross-country comparisons emerged as the best way to discern the most prominent trust-enhancing societal features (Rothstein and Stolle 2008; Wagner et al. 2009; Bjørnskov 2008). The causal interrelationship between these two types of trust is little analysed in the available literature (Inglehart 1999; Bjørnskov 2006; Robbins 2012). In most cases, inverse causality is implicitly assumed and, this is often done as a means to explain the mixed findings of macro-level cross-country studies. So, analysis of the available empirical findings suggests that aggregation actually masks much of the underlying national level complexities. Thus, only indirect results may emerge via implicit assumptions about the role of trust upon perceived institutional quality and peoples' satisfaction with democracy (Marozzi 2015; Ariely 2015). Furthermore, declining levels of average support to regime performance in developed countries, verify the need to analyse the micro-level causal interrelationship between trust and institutions if we are to understand the 'national setting character' of these phenomena (Pichler and Wallace 2007; Bjørnskov 2008; Li et al. 2005; Marozzi 2015). At the national level, culture can affect the success of formal rules and constraints (Mathers and Williamson 2011) and trust is the building property of collective units (Lewis and Weigert 1985) that cooperate in order to respond to social dilemmas and challenges (Gambetta 2000).

Greece is at the search of how to empower trust as a fundamental feature of individuals, and the society at large. The detrimental effects of the financial crisis have made it even more crucial for the country to enhance its trust leverage. Following the harsh financial consolidation measures, trust in Greece has declined significantly, albeit not in all its types. Available data regarding the pre and post crisis period in Greece show that, institutional trust, e.g. trust in political and impartial institutions (Ervasti et al. 2018), and satisfaction with democracy (Daskalopoulou 2018a), declined considerably. Nonetheless, generalised

trust did not collapse and equality concerns have been empowered (Ervasti et al. 2018; Daskalopoulou 2018b).

Within this context, the present study undertakes a micro-level analysis of the causal interrelationship between individual levels of social trust and institutional trust in the case of Greece. In particular, we test for the presence of inverse causality or, else, the possibility that social and institutional trust endogenously determine one another. Further, we propose a more informative social trust variable that is constructed as a three-item scale variable comprising not only generalized trust (which is the most commonly used measure of social trust), but also fairness and helpfulness. This way a more direct content to the expectations assigned to social trust might be available and inform the interpretation of the empirical findings. The institutional trust variable is constructed as the sum of seven variables referring to trust in key institutions, such as, political institutions, civil security institutions and, supranational political institutions. Empirical analysis verifies the presence of endogeneity in the social and institutional trust interrelationship and, thus, two stages instrumental variables techniques are used for the estimation of the empirical models. Interestingly, when accounted for, endogeneity entails different results as regards the sign of the effects that the variables exert upon one another. In particular, the social trust effect on institutional trust remains statistically significant and positive but the institutional trust effect upon social trust turns from positive to negative. The results are robust to various specifications of the institutional trust variable. The results of the present study provide a more informative and accurate picture of the underlying dynamics of building trust in a society and are, thus, relevant to policy level in the field.

The remainder of the paper is organised as follows. Section 2 provides a brief discussion regarding the interrelationship between generalised trust and institutional trust in order to set the theoretical context of the analysis. Section 3 presents the data and methods used in the empirical analysis. Section 4 is devoted to the presentation of the study's findings and Sect. 5 concludes the paper.

2 Theoretical Context

The present study undertakes an individual level analysis of the causal interrelationship between social trust and institutional trust in an attempt to provide empirical evidence on the micro-level dynamics of building trust in a society. Before proceeding to the discussion of the study's theoretical context and research hypothesis, it is useful to briefly present the theoretical concepts of social and institutional trust. Social trust is taken to denote generalised trust, i.e. trust that is extended to persons not known to an individual and for whom the individual holds a set of "default expectations" regarding their "trustworthiness" (Yamagishi 2001: 143). Generalised trust is about honesty, goodwill, benign intent and the belief that others will avoid free-riding behaviours in the pursuit of common goals (Yamagishi and Yamagishi 1994; Fukuyama 1995; Uslaner 2002). Institutional trust is different from generalised trust. It refers to knowledge-based trust that can be strategic (Yamagishi and Yamagishi 1994; Uslaner 2002; Linde and Ekman 2003), i.e. it is trust that depends on individuals' experiences in particular domains (Glanville and Paxton 2007). In that sense, institutional trust is endogenously influenced by institutional performance in these domains (Newton 1999). Even more importantly, individuals can discern amongst institutions that implement public policies (and are, thus, critical for their personal welfare) from those that might represent their ideology or interests (Norris 1999; Rothstein and Stolle 2008).

Trust is a deeply rooted social reality that underlies the social order in all its expressions (Lewis and Weigert 1985). According to Lewis and Weigert (1985: 971), "the practical significance of trust lies in the social action it underwrites". As such, trust constitutes the most prominent component of social capital, the latter being equivalent to civic culture (Hayashi et al. 1999). In turn, trust is the underlying principle of all economic, social, and political institutions of a society (Yamagishi 2001; Bjørnskov 2008; Tabellini 2010). Empirical evidence regarding the procedures of building and maintaining trust verify that, both generalised trust and institutional trust are socially embedded phenomena which, produce high quality (democratic) institutions (Glanville and Paxton 2007; Newton 1999). Thus, trust and institutions are interrelated and mutually supported societal phenomena (Inglehart 1999).

Given the above, the interrelationship between generalized trust and institutional trust has been at the core of the discussion devoted to identifying the mechanism(s) that are capable of producing trust in a society. In this respect, two wide research approaches have been developed around: (a) a cultural-historical perspective, and (b) an institutional perspective (Uslaner 2002; Paraskevopoulos 2010). Certain aspects of the trust building process may be clarified by means of employing each analytical perspective. At first, the cultural-historical perspective was considered a rather deterministic context suggesting that, when it comes to building trust in a society, path dependence cannot be escaped. On the other hand, the institutional perspective suggested that, trust is a dynamically evolving societal feature and institutions are a mechanism conducive to building trust in a society (Putnam 1993; Fukuyama 1999; Rothstein and Stolle 2008). As expected, much empirical research has been dedicated to identifying the analytical validity of these two approaches (Paraskevopoulos 2010). We might summarize the bulk of the produced empirical evidence as pointing to significant cross-country differences since, it is both culture and institutional quality that intervene in the creation of trust (Uslaner 2002; Rothstein and Stolle 2008; Wagner et al. 2009). Trust, is neither a historical residue (Fisman and Khanna 1999) nor, a psychological predisposition of individuals (Glanville and Paxton 2007). Rather, it is the perceived quality of regime performance that can affect an individual's depth of support to democracy (Sullivan and Transue 1999).

On the other hand, democracies evolve via dynamic changes in the types of trust (Newton 1997; Fukuyama 2014). Cross-country fluctuations in the interrelationship between trust and institutional quality over time, cannot be fully understood in an aggregate macro-level context (Wagner et al. 2009). Thus, lack of adequate research regarding the causal interdependence between social trust and institutional trust at the individual level, also emerges as an important issue (Brehm and Rahn 1997; Rothstein and Stolle 2008; Bjørnskov 2006; Robbins 2012). Micro-level analysis is of importance given the heterogeneity of individual preferences as an underlying principle of the collective decision making processes used to operationalize freedom and democracy in modern societies (Fukuyama 1999; Schneider 2017). Individuals understand institutions to broadly mean the "rules of the game in a society" (Wagner et al. 2009: 34). Thus, the way in which these institutions are evaluated in response to their expectations might differ considerably (Gesthuizen et al. 2009). Indeed, individuals are found to understand democracy as an indicator inclusive of institutional quality and higher regime performance in a number of areas such as, political freedom and equality, human rights and social justice, inclusion and cohesion, economic freedom and a market–based economic system (Munck and Verkuilen 2002; Yamagishi 2001). Extant literature suggests that, the trust—institutions relationship coevolves with a democratization process wherein societies mature via changing types of trust and the underlying maturity processes cannot find large scale equivalents across countries (Newton

1999; Fukuyama 1999). According to Schuller (2007), trust is a context specific phenomenon, and can be best identified as a meso-level construct, that interrelates the macro-level institutional trust of a society with the micro-level interpersonal trust of individuals. As such, trust is intended to show the importance of relationships for a society, as well as, the importance of power and power relations (Nooteboom 2007; Van Staveren and Knorringa 2007).

Trust, therefore, is functional and leads to individuals that are able and willing to cooperate in order to solve social dilemmas (Gambetta 2000). However, the ways in which individuals do so is an issue that renders context specific research. Using pre and post crisis data for the Netherlands, Van der Cruijsen et al. (2016) find that it is the personal financial crisis experiences that negatively affect generalized trust. Fritsche et al. (2017) use experimental evidence for Germany and Spain to analyse the personal consequences of the economic crisis. They find differences in the intragroup and intergroup responses of individuals when their sense of personal control is threaten and the individuals are lacking their own ability to affect important aspects of their environment (Fritsche et al. 2017). In a similar manner, diverse results are present in the case of Greece. Generalised trust and equality considerations seem to resist the financial crisis shock albeit, institutional trust and regime support declined significantly during this period (Ervasti et al. 2018; Daskalopoulou 2018a, b).

Within this context, the main research hypothesis that is formulated and tested here is that 'individual levels of social and institutional trust endogenously affect one another and the outcome of this interrelationship can be either positive or negative given the underlying forces causing particular trust dynamics to occur in a given society at a given time'. Two interrelated reasons support the importance of providing further evidence about Greece. Greece has not only been the most severely affected, by the financial crisis, country. It is, still, after almost a decade of harsh financial consolidation measures, in search of a paradigm that will allow her to move towards a more viable socio-economic and political pathway. The adversity of the financial crisis effects, and the fall behind with the necessary adjustments, are the result of structural impediments that have brought Greece to the point in which it actually suffers the dysfunctionalities of a long-standing negative trust complex (Paraskevopoulos 2007; Bitros 2013). First, it is important to study the underlying trust generation and enhancing mechanisms for a country that needs to 'restart' having a low social capital stock, the latter being essential for dealing with large scale social dilemmas and challenges (Paraskevopoulos 2007; Jones et al. 2008; Rontos and Roumeliotou 2013; Daskalopoulou 2018b). Second, and perhaps even more important, is the fact that the accumulated social capital seems to be negative. Trust in Greece has largely the form of group specific capital embedded in: (a) widespread rent-seeking network linkages (Bitros 2013; Bitros and Karayiannis 2013; Petrou and Daskalopoulou 2014); (b) change-resistant high-power groups, such as the public servants (Bitros 2013; Daskalopoulou 2018b); and (c) a democratic regime deficit (Danopoulos 2015; Daskalopoulou 2018a). This type of trust empowers practices such as political favouritism, excess statism, and partisan politics at the civil service sector (Bitros and Karayiannis 2013). Even worse, these processes are 'self-reinforcing phenomena' sustained by a bureaucratic state model (Sotiropoulos 2015) and a problematic relationship between the public and private spheres of the economy (Bitros 2013; Kazakos 2006). It is indicative that, the financial crisis measures implemented so far, are inefficient horizontal interventions which, actually avoid (or delay) the necessary structural adjustments that the country's governance model needs (Bitros 2013; Baltas 2013). In that sense, whilst trust is functional, we must acknowledge that distrust is also functional. In the case of Greece, this raises important challenges to the system, with a trend towards

atomism, in contrast to collectivism, being the most important dysfunctionality of the system (Sotiropoulos and Bourikos 2014). Based on this knowledge, we argue here that the bidirectional relationship between social and institutional trust in the case of Greece, might as well be negative.

3 Empirical Analysis

3.1 Empirical Model and Estimation Methods

In line with the theoretical discussion presented above, we might expect institutional trust and social trust to endogenously determine one another. Thus, the following system of Eq. (1) might be used to express this causal interdependence:

$$\begin{aligned} IT &= f(ST, \mathbf{x}) \\ ST &= g(IT, \mathbf{y}) \end{aligned} \tag{1}$$

where IT and ST stand for an individuals' institutional trust and social trust levels, respectively, and $\mathbf{x}$, $\mathbf{y}$ are vectors of other independent variables. If two-way causation is found to hold, then the system of Eq. (1) should be estimated simultaneously. Ideally, we might expect this two-way causal relationship to be a positive cumulative trust process, i.e. we expect $f'(ST) > 0$ and $g'(IT) > 0$ to hold. However, as mentioned in the case of Greece, the presence of negative effects might be also observed pointing to the case where trust might not extent to general others (social trust) and institutions (institutional trust) in the same way.

In order to empirically test the hypothesis formulated here we employ the following empirical system of structural equations:

$$IT = \beta_0 + \beta_1 ST + \beta_2 A + \beta_3 E + \beta_4 G + \beta_5 P + \beta_6 C + \beta_7 HS + \beta_8 Y + u \tag{2}$$

$$ST = \delta_0 + \delta_1 IT + \delta_2 A + \delta_3 E + \delta_4 G + \delta_5 P + \delta_6 C + \delta_7 HS + \delta_8 Y + v \tag{3}$$

where IT and ST are defined as earlier, and the rest are variables capturing individuals' socio-economic and demographic characteristics, namely age (A), education (E), gender (G), living with partner (P), children (C), household size (HS), and income (Y). The β's and δ's are the coefficients to be estimated, and u and v are error terms.

Since the available data refer to random samples of individuals observed in different time periods (waves), panel analysis and pseudo-panel analysis techniques cannot be used (Wooldridge 2010; Verbeek 2008). Thus, pooled regression analysis is performed in order to estimate Eqs. (2) and (3). As regards endogeneity, the Hausman specification test can be employed in order to decide if reverse causality is present and consequently how Eqs. (2) and (3) might be best estimated. If the Hausman specification test indicates endogeneity then the two equations form a system and cannot be estimated separately using OLS techniques. In such a case, two stages instrumental variables techniques (TSLS) can be employed to obtain consistent estimates of the parameters (Wooldridge 2010).

3.2 Data and the Construction of Variables

Analysis is based on individual level (micro) data drawn from the European Social Value Surveys (ESV) rounds 1, 2, 4 and 5, corresponding to the 2002, 2006, 2008 and 2010

waves, respectively, for Greece. Overall, a sample of N = 9759 observations has been used in the analysis. Given the research aim at hand it is always a crucial issue to decide whether the variables that might be used to approximate the concepts/features relevant to an analysis should better be chosen from a set of existing ones or there is a need to develop new ones, or use a combination of existing ones and some which have been developed in the context of a given study (Hathcoat et al. 2016). According to Hathcoat et al. (2016) the variables (whether existing or computed ones) are to be chosen on the basis of their directness and validity. The directness of an instrument is a relative attribute, i.e. there is a continuum of instruments ranging from those that might be considered more direct to less direct ones, with the former being always more preferable (Hathcoat et al. 2016). The second selection criterion refers to validity, and, in particular, construct-underrepresentation and construct-irrelevant variance. Construct-underrepresentation indicates that a variable is too narrow (i.e. it is missing something important) and construct-irrelevant variance indicates that the variable is too broad (i.e. the scores are inadvertently influenced by something redundant) (Hathcoat et al. 2016). Munck and Verkuilen (2002: 8–9) suggest that "there is no hard and fast rule" in selecting the attributes to be included in a definition of a concept and, thus, the decision process is intimately linked to theory and the avoidance of extremes (i.e. too broad or too narrow definitions with regard to the study's theoretical goals). Given these considerations, below we present the way in which the variables used in the analysis have been chosen and constructed. More specifically, three sets of variables are defined namely the endogenous variables, the exogenous variables, and the instruments. The definitions of these variables along with basic descriptive statistics are presented in Table 1.

3.2.1 Dependent (Endogenous) Variables

The first step is to construct the latent variables of social trust (ST) and institutional trust (IT) that are meant to indicate the individuals' scale of social and institutional trust, correspondingly.

Social trust (ST) As mentioned earlier, one of the study's aims is to provide a meaningful approximation to the social trust concept and, one that can be analyzed as drawing from, and strengthening the, institutional basis of a country. To that extent, we need an instrument for the social trust variable that can be meaningfully applied to reflect its content as one distinct and workable component of the social capital variable. The single variable of generalized trust (GT) is most commonly used as the trust component of the social capital concept under the assumption that we might obtain a reliable and valid instrument of the social trust attribute in a society and make (individual level and country-level) comparisons on the basis of that instrument. Nevertheless, despite of being the most popular measure of social trust (Inglehart et al. 2004), concerns suggest that GT draws from a general question and answers might well reflect individual understandings of the type of other persons (Knorringa and van Staveren 2006), or their intentions (Nooteboom 2007). Indeed, GT has been found a valid instrument to predict, the rate of people returning lost wallets with their content intact (Knack 2001), aggregate features such as corruption or the prevalence of violent crime (Lederman et al. 2002; Uslaner 2002) and, even the respondents' own trustworthiness (Glaeser et al. 2000). Thus, GT might reflect a general psychological orientation that is shaped from a large number of individual level and societal factors (Marschall and Stolle 2004). With the use of GT the important issues of the content of trust (the associated expectations of individuals), and the radius of trust (just how small or large

Table 1 Definitions of variables and basic descriptive statistics. *Source*: Author's calculations

Variables	Mean	SD
Endogenous variables (scale variables and items)		
Social trust (ST = average of 3 items)	3.62	1.968
Most people can be trusted or you can't be too careful	3.88	2.400
Most people try to take advantage of you. or try to be fair	3.76	2.259
Most of the time people helpful or mostly looking out for themselves	3.20	2.227
Institutional trust (IT = average of 7 items)	3.82	2.058
Trust in country's parliament	3.35	2.646
Trust in the legal system	4.59	2.802
Trust in the police	5.10	2.827
Trust in politicians	2.42	2.318
Trust in political parties	2.42	2.311
Trust in the European Parliament	3.98	2.766
Trust in the United Nations	3.47	2.692
Political institutions trust (PIT = average of 3 items)	3.09	2.361
Security institutions trust (SEIT = average of 2 items)	5.28	2.625
Supranational institutions trust (SUIT = average of 2 items)	4.08	2.615
Exogenous variables (socio-economic and demographic variables)		
Age (log of years)	48.20	18.630
Education (log of years)	10.56	4.488
Gender (dummy, 1 = male)	.44	.496
Marital status (dummy, 1 = lives with husband/wife)	.60	.489
Household size (log N of persons)	2.73	1.321
Children (dummy, 1 = child lives at home)	.41	.491
Income (ordinal variable in twelve income categories)	4.82	2.209
Wave 2 dummy (1 = 2006)	.25	.431
Wave 4 dummy (1 = 2008)	.21	.409
Wave 5 dummy (1 = 2010)	.28	.448
Instrumental variables		
Important to help people and care for others well-being (1–6, 6 = not at all like me)	1.91	.865
Domicile, the respondents' place of residence (1–5, 5 = farm or home in countryside)	2.26	1.283
Sociability, how often socially meet with friends, relatives or colleagues (1–7, 7 = every day)	3.97	1.688
Father education (1–5, 5 = tertiary education completed)	1.65	1.183
Mother education (1–5, 5 = tertiary education completed)	1.49	1.024
Voting, participation in formal democratic procedures (dummy, 1 = voted last national election)	.14	.346
Political background, a person's own placement on the left to right political scale (0–10, 0 = left)	5.40	2.162
Important that government is strong and ensures safety (1–6, 6 = not at all like me)	1.69	.956
Important to do what is told and follow rules (1–6, 6 = not at all like me)	2.78	1.354
Important to live in secure and safe surroundings (1–6, 6 = not at all like me)	1.67	.925
Important that people are treated equally and have equal opportunities (1–6, 6 = not at all like me)	1.74	.874

Descriptive statistics are based on non-missing values. For dummy variables mean reports frequency of 1

is the 'general others' group), might actually be neglected (Granovetter 1985; Delhey et al. 2011). This is quite important since we might mix the content of trust with the outcomes of trust (Lyberaki and Paraskevopoulos 2002). Indeed, available knowledge provides mixed results regarding the determinants of GT, its usefulness as a social trust instrument, and the causal mechanisms that underlie its effect on other crucial societal features (Bjørnskov 2007; Rothstein and Stolle 2008). In addition, the issue of endogeneity in the interrelationship between social trust and other forms of trust, such as the institutional trust considered here (Uslaner 2003; Bjørnskov 2007; Rothstein and Stolle 2008), requires the use of a reliable and valid instrument that can be informative. Given that, we argue here that it is important to link the generalised trust (GT) variable "Most people can be trusted or you can't be too careful" (the so-called 'standard' trust variable, Uslaner 2002) with other trust related variables indicating specific overall expectations regarding other peoples' actions. To that extent, the social trust variable is constructed here as the sum of three variables referring to the generalised trust variable already mentioned, a fairness variable ("Most people try to take advantage of you, or try to be fair") and a helpfulness variable ("Most of the time people helpful or mostly looking out for themselves"). This variable can be taken to denote the general moral basis of a society, a set of unwritten rules and norms that govern everyday life. Thus, we can argue here that the social trust variable indicates individuals' expectations that in general, others, unknown to him/her, will be helpful and fair in their everyday interactions.

Institutional trust (IT) The institutional trust variable is taken to denote political support, i.e. perceived regime performance or, else, people's expectations regarding the performance of institutions in the fields of economy, safety, justice etc. (Grönlund and Setälä 2012; Marozzi 2015). In that sense, institutional trust refers to system trust, i.e. it rests upon a 'presentational' base (Luhmann 1979). This means that this type of trust is activated when people perceive everything to be in 'proper order' (Lewis and Weigert 1985). As such, system trust is vitally important for the effective functioning of political power (Lewis and Weigert 1985). Given these, the institutional trust variable is constructed here as the sum of seven variables referring to trust in key institutions such as the ones referring to democratic rule and safety. In particular we use the following seven items: "Trust in country's parliament", "Trust in the legal system", "Trust in the police", "Trust in politicians", "Trust in political parties", "Trust in the European Parliament", "Trust in the United Nations".

All the aforementioned items used to construct the social and institutional trust variables are measured on a positively coded ten-point Likert scale. To verify the internal consistency of the ST and IT variables a Cronbach's alpha reliability test was run on the sample. Reliability statistics, as shown in Table 2, indicate that internal consistency is very good, in the case of the social trust variable, and excellent in the case of the institutional trust variable. In order to analyse more thoroughly the effect of different types of institutions upon social capital, and vice versa, we have also constructed three sub-IT variables. Given the theoretical discussion regarding the nature and role of institutions and, the possible changes in the way in which individuals evaluate them, we split the Institutional Trust variable into three separate variables indicating trust to: (a) political institutions (PIT) ("Trust in country's parliament", "Trust in politicians", "Trust in political parties"), (b) civil security institutions (SEIT) ("Trust in the legal system", "Trust in the police") and, (c) supranational political institutions (SUIT) ("Trust in the European Parliament", "Trust in the United Nations").

Table 2 Reliability statistics. *Source*: Author's calculations based on ESV data

Scale variable	Cronbach's alpha	Cronbach's alpha based on standardized items	N of items	Total cases	Valid cases
Social trust scale (ST)	.819	.820	3	9759	9694
Institutional trust scale (IT)	.906	.909	7	9759	6483
Cronbach's alpha if item deleted					
ST1—Most people can be trusted or you can't be too careful					.754
ST2—Most people try to take advantage of you, or try to be fair					.713
ST3—Most of the time people helpful or mostly looking out for themselves					.785
IT1—Trust in country's parliament					.886
IT2—Trust in the legal system					.893
IT3—Trust in the police					.907
IT4—Trust in politicians					.885
IT5—Trust in political parties					.888
IT6—Trust in the European Parliament					.886
IT7—Trust in the United Nations					.895

A commonly accepted rule for describing internal consistency using Cronbach's alpha suggests that values as $\alpha \geq .9$ are considered to indicate excellent consistency and values as $.9 > \alpha \geq .8$ are considered to indicate very good internal consistency (DeVellis 2012)

3.2.2 Independent (Exogenous) Variables

The standard socio-demographic and economic characteristics of individuals are used as explanatory variables in both the ST and the IT equations. Given the available knowledge in the field we expect to find statistically significant effects of these variables upon the observed levels of social and institutional trust, thus helping us to identify the profile of more trusting individuals (Rontos and Roumeliotou 2013; Daskalopoulou 2018b). Furthermore, we use three time dummies to account for the different periods in the data (i.e. the four waves), and capture potential structural breaks in our models referring to time effects (Daskalopoulou 2018b).

3.2.3 Instrumental Variables

In instrumental variables estimation procedures, the variables chosen as instruments need to have three crucial properties, namely, they need to be correlated to the endogenous variable, uncorrelated to the error term and, should not be part of the model explaining the dependent variable. In addition, we need at least one such instrument for the case of one endogenous variable. In our case, we need to define two sets of instruments, one for the social trust variable, as endogenous in the institutional trust equation and, one for the institutional trust variable, as endogenous in the social trust equation. Given ESV data availability and extant literature in the field, we have selected a total number of four instruments for the social trust variable and, a total number of six instruments for the institutional trust variable. This choice has been based on first, the need to

build an IV model that is relevant and second, the need to avoid error term correlation in the structural models.

Social trust instruments The four variables are: (1) norms, which refers to the respondents self-reported perceptions about the importance of helping other people (a direct measure of helpfulness); (2) domicile, which refers to the respondents' place of residence; (3) sociability, which refers to the respondents' habits about personal communications with friends, relatives and colleagues; and (4) the objective socio-economic status of individuals, which refers to a composite measure of parental education (i.e. father and mother education) plus family income (the variables are standardised prior to adding them together to account for different scales in their measurement).

These instruments have been chosen based on either, their direct relation to the endogenous variable (e.g. norms) or, the arguments of extant literature suggesting their link to social trust. Thus, apart from the norms of helpfulness, we account here for the place of residence given the ongoing discussion over the spatial character of trust (Pickvance 2003; Mayer 2003; Purdue 2001; DeFilippis 2001; Tóth 2015; Agger and Jensen 2015). Indeed, space matters in the analysis of social capital embeddedness and realisation (DeFilippis 2001; Purdue 2001; Tóth 2015). Sustainable urban living for example relates to issues such as neighbouring, friendship and voluntary initiatives to promote well-functioning communities (Pickvance 2003; Mayer 2003; Agger and Jensen 2015). In addition, sociability is taken into consideration since it constitutes a key mechanism for the construction of trust (Marschall and Stolle 2004; Growiec et al. 2017). Finally, the objective socio-economic status variable has been created to account for the potential effect of social status on individual levels of trust. In the relevant literature, similar measures are developed (Adler et al. 2000). Social status has been found to predict trust (Navarro-Carrillo et al. 2018), pro-environmental social action (Eom et al. 2018) and the way social events are explained by individuals (Kraus et al. 2009).

Institutional trust instruments The six instruments that were chosen to capture the political support effect of this variable are: (1) voting, the participation of a person in formal democratic choice procedures; (2) political background, a person's own placement on the left to right political scale; and four variables referring to the importance that the person attributes to (3) having a strong government, (4) following rules, (5) living in a safe country and (6) living in a country where people have equal opportunities and are treated equally.

These instruments have been chosen as direct proxies of the endogenous variable of institutional trust, and of the three sub-variables of trust in political institutions, civil safety institutions, and supranational political institutions. Institutional trust can be taken to denote the values and norms that pertain a civil society, and might thus be considered as an indicator of a country's perceived quality of public institutions (Fukuyama 1999; Ariely 2015). This is in line with Hudson's (2006) argument who suggests that trust in institutions is endogenous to their performance. Thus, institutional trust can be measured by the degree of cooperation that an individual might be willing to give to the state, e.g. in the form of voting (Jones and Hudson 2000). According to Sullivan and Transue (1999) political participation and political tolerance are two psychological orientations that indicate an individual's depth of support to democratic governance. To that extent we have accounted for voting as a variable explaining IT levels, and for perceived safety and equality as evidence of high quality (democratic) institutions (Paraskevopoulos 2010). In addition, we use the importance of following rules variable, to account for individuals' norms and values towards supporting a democratic civil regime (Munck and Verkuilen 2002). Finally, we account for political preferences as a crucial factor of abstract engagement to politics and civic issues (Daskalopoulou 2018b; Talò and Mannarini 2015).

4 Results

Three important tests need to be performed for TSLS estimation method to be appropriate and the results robust. The first, refers to testing for the exogenous variables that are assumed to be endogenous in the structural models. The Hausman specification test has been used to check for the endogeneity assumed here between the social trust (ST) and the institutional trust (IT) variables. The standard Hausman procedure tests for the null hypothesis that the suspected variable is exogenous and, thus, the model should better be estimated via OLS. First, the ST and the IT variables were regressed on all exogenous variables and then the residuals of these two regressions have been used as exogenous variables in the OLS endogeneity estimations of ST (with IT residuals) and IT (with ST residuals). Table 3 presents the results of the several Hausman tests that have been used to define endogeneity of ST in IT and of IT in ST, respectively. The same procedure has been followed for testing PIT, SEIT and SUIT as endogenous to ST and, ST as endogenous to PIT, SEIT and SUIT, respectively. In all cases, the null hypothesis of exogeneity is rejected and thus, OLS is not appropriate (Table 3). Since our findings verify simultaneity TSLS regression techniques are employed to obtain consistent estimates of the ST and IT variables.

Having established endogeneity and thus, the need to use two stage instrumental variable techniques, the other two crucial tests actually refer to the robustness of the two stages instrumental estimation results via verifying instrument validity and relevance. As mentioned above, one crucial element in the TSLS procedure is that the instruments chosen are uncorrelated to the regression error terms of the dependent variable. This property of the instruments can be tested when there are more instruments than endogenous variables (overidentifying restrictions). In that sense, it is a test of validity, i.e. it gives us information on the possible overfit of the endogenous variable in the presence of more than one instruments (Ruud 2000; Sargan 1958). The Sargan test procedure has been used here to test the null hypothesis that instruments are valid. The results of these tests are presented as model diagnostics in the lower parts of Tables 5 and 6. The null hypothesis cannot be rejected in any of the cases analyzed here.

Finally, the test of relevance verifies the usefulness of the chosen instruments, i.e. the property that they are sufficiently strongly correlated to the endogenous variable. Using the first stage regressions we can test for the hypothesis that the instruments used explain a sufficient amount of variation in the endogenous variable (Staiger and Stock 1997; Stock and Yogo 2002). As a rule of thumb, Staiger and Stock (1997) suggest that, the F-statistics

Table 3 Hausman tests of endogeneity in the structural equations model. *Source*: Author's calculations

H_0 Hypothesis	Coefficient	*p* value	Decision with respect to H_0
IT_{res} exogenous in ST	.197	< .001	Rejected
ST_{res} exogenous in IT	.203	< .001	Rejected
PIT_{res} exogenous in ST	.167	< .001	Rejected
$SEIT_{res}$ exogenous in ST	.194	< .001	Rejected
$SUIT_{res}$ exogenous in ST	.144	< .001	Rejected
ST_{res} exogenous in PIT	.248	< .001	Rejected
ST_{res} exogenous in SEIT	.168	< .001	Rejected
ST_{res} exogenous in SUIT	.153	< .001	Rejected

of instrumental variables equations in the first stage should be larger than 10 to ensure that the maximum bias in IV estimators is less than 10%. Following Stock and Yogo (2002), who provide quantitative definitions of weak instruments for the general case of n endogenous regressors in TSLS, we estimate a first-stage F-statistic for testing the hypothesis that the instruments do not enter the first stage regression of TSLS (Cragg and Donald 1993; Staiger and Stock 1997). The results of these tests are also presented as model diagnostics in the lower parts of Tables 5 and 6. The null hypothesis that the instruments are irrelevant (i.e. weak instruments) is rejected in all cases. The results of the first stage IVs regressions provide important insights relevant to the analysis performed here. These results are summarized in Table 4. As anticipated, social trust is positively affected for individuals of a higher socio-economic status and for those who meet more often with friends and relatives. Interestingly, trust is lower for people living in the countryside. This finding may be attributed to the reduced safety considerations that have emerged in many peripheral areas of the country. Informative are the results in the case of the institutional trust variable as well. Institutional trust is higher for right-wing voters and for individuals placing more importance on equality considerations. On the other hand, negative effects are observed for voters and for individuals that place importance on following rules in a society. These results are robust when the three sub-IT variables are considered. In the case of PIT, SEIT and SUIT, safety considerations, as part of the state's obligations, also carry negative effects on institutional trust. Overall, we could infer the existence of a commitment to democratic governance, on the one hand, and a 'disappointment' as regards the function of the state, on the other.

Given that the empirical models' appropriateness and robustness have been verified the following empirical results might be reported as key findings of the present study. In particular, Table 5 reports the results of estimating Eqs. (2) and (3) via TSLS. The initial OLS results are also reported for comparison purposes as quite significant changes are observed in the estimation results when endogeneity is taken into account. Focusing on TSLS results we see that the socio-economic and demographic characteristics of individuals exert statistically significant effects upon the ST and IT variables. In particular, ST is positively affected by age, education and income. Institutional trust is positively affected by age and negatively affected by education. The second set of variables regards the effect of time upon the variables of interest. When endogeneity is taken into account, we observe that ST deteriorates for the 2008 and 2010 waves. In the case of institutional trust we see that deterioration refers to the whole period of analysis. Finally, as regards the causal effects between ST and IT, TSLS results would tend to indicate a positive effect of social trust upon institutional trust and a negative effect of institutional trust on social trust. This is a quite interesting finding potentially suggesting a difference in the ways in which individuals handle their trust expectations towards general others and institutions.

In order to test for the sensitivity of the above empirical evidence we test for the robustness of our findings using three different specifications (sub-variables) of the IT variable. Despite the very good internal consistency of the IT variable used here we have decided that it is important to test for a possible difference stemming from the type of institutions or their origin. In that sense, we want to test how sensitive our results are to more narrow specifications of the IT variable. In turn, a more informed argument can be made as regards the path via which institutional trust negatively affects social trust. Thus, we also test for the possibility that the trust in political institutions (PIT), civil security institutions (SEIT) and supranational political institutions (SUIT) are endogenous in the function determining the social trust variable. Again, the Hausman specification test has been used to check for the possible endogeneity between the social trust (ST) variable and the trust in political

Table 4 Weak instruments tests. *Source*: Author's calculations

	Social trust	Institutional trust	Political institutions trust	Civil security institutions trust	Supranational political institutions trust
Constant	1.159*** (.030)	1.118*** (.033)	.908*** (.040)	1.423*** (.029)	1.249*** (.035)
Important to help people and care for others well-being	−.013 (.009)				
Objective socio-economic status	.031*** (.004)				
Domicile	−.026*** (.006)				
Sociability	.027*** (.005)				
Placement on the left to right political scale		.046*** (.004)	.040*** (.005)	.048*** (.003)	.035*** (.004)
Voting		−.160*** (.025)	−.136*** (.032)	−.091*** (.022)	−.055** (.027)
Important to live in secure and safe surroundings		−.013 (.010)	−.026** (.012)	−.017** (.009)	−.026** (.011)
Important to do what is told and follow rules		−.054*** (.006)	−.059*** (.008)	−.037*** (.005)	−.030*** (.007)
Important that government is strong and ensures safety		5.601E−5 (.010)	.010 (.012)	−.009 (.009)	−.001 (.010)
Important that people are treated equally and have equal opportunities		.053*** (.010)	.083*** (.012)	.031*** (.009)	.033*** (.011)
Model diagnostics					
N	6123	6764	6173	6830	5884
Adj. R^2	.028	.050	.036	.049	.022

Table 4 (continued)

	Social trust	Institutional trust	Political institutions trust	Civil security institutions trust	Supranational political institutions trust
F-test(df) (prob)	45.399(4) (<.001)	60.311(6) (<.001)	39.860(6) (<.001)	59.388(6) (<.001)	23.109(6) (<.001)

All coefficient estimations are based on non-missing observations

Standard errors are reported in parentheses

***, **, * report significance at the 1, 5, and 10%, respectively

Table 5 Determinants of social and institutional trust. *Source*: Author's calculations

	Pooled OLS		TSLS	
	Social trust	Institutional trust	Social trust	Institutional trust
Constant	.742*** (.122)	.832*** (.124)	.947*** (.182)	.668*** (.185)
Age	− .070*** (.025)	.149*** (.025)	.073* (.043)	.158*** (.026)
Education	.150*** (.018)	− .060*** (.019)	.165*** (.023)	− .085*** (.028)
Gender	− .012 (.016)	.008 (.016)	− .015 (.021)	.013 (.017)
Lives with husband/wife/partner	− .019 (.021)	.025 (.021)	− .010 (.027)	.027 (.022)
Children	− .043* (.022)	.012 (.023)	− .039 (.029)	.021 (.024)
Household size	− .029 (.024)	.013 (.024)	− .032 (.032)	.018 (.025)
Income	.017*** (.004)	.005 (.004)	.017*** (.005)	.001 (.005)
Wave 2 2006	.056*** (.022)	− .127*** (.022)	.018 (.030)	− .129*** (.023)
Wave 4 2008	.080*** (.024)	− .396*** (.024)	− .116** (.056)	− .394*** (.024)
Wave 5 2010	.256*** (.023)	− .711*** (.022)	− .053 (.182)	− .733*** (.028)
Social trust		.203*** (.013)		.376*** (.146)
Institutional trust	.197*** (.013)		− .312** (.124)	
Model diagnostics				
N	5770	5770	4411	5637
Adj. R^2	.073	.213	.033	.183
F-test(df) (prob)	42.466(11) (< .001)	142.560(11) (< .001)	14.758(11) (< .001)	115.767(11) (< .001)
Sargan overid test (S-value) (prob.)			.090 (< .010)	7.527 (< .010)
Weak instruments test (F-value) (prob.)			45.399 (< .001)	60.311 (< .001)

All coefficient estimations are based on non-missing observations

Standard errors are reported in parentheses

***, **, * report significance at the 1, 5, and 10%, respectively

(PIT), civil security (SEIT) and supranational political institutions (SUIT) variables. The test results verify simultaneity in all cases (Table 3). Thus, TSLS estimations have been performed for ST with PIT, SEIT and SUIT as endogenous and for PIT, SEIT and SUIT having ST as an endogenous regressor. Table 6 summarizes the results of these estimations. Results with regard to the effect of socio-demographic and economic variables differentiate especially for the institutional trust sub-variables. Social trust is positively affected by

Table 6 Determinants of social trust and trust in political, civil security and supranational political institutions. *Source*: Author's calculations

	TSLS			
	Social trust	Political institutions trust	Civil security institutions trust	Supranational political institutions trust
Constant	.701** (.279)	.040 (.222)	1.287*** (.168)	.857*** (.205)
Age	.116 (.054)	.193*** (.033)	.123*** (.024)	.057** (.029)
Education	.161*** (.044)	− .075*** (.035)	− .081*** (.025)	− .034 (.031)
Gender	.009 (.026)	.042** (.021)	− .014 (.015)	− .004 (.019)
Lives with husband/wife/partner	.012 (.036)	.018 (.027)	.039** (.019)	− .013 (.024)
Children	− .032 (.033)	.015 (.030)	− .011 (.021)	− .027 (.026)
Household size	− .030 (.037)	.042 (.031)	.032 (.023)	.076*** (.028)
Income	.013* (.007)	− .004 (.006)	.003 (.005)	− .004 (.005)
Wave 2 2006	.015 (.038)	− .068** (.029)	− .125*** (.021)	− .066*** (.025)
Wave 4 2008	− .177*** (.066)	− .424*** (.030)	− .035*** (.022)	− .1330*** (026)
Wave 5 2010	− .047 (.151)	− .846*** (.040)	− .402*** (.026)	− .583*** (.032)
Social trust		.586*** (.174)	.135 (.132)	.457*** (.154)
Political institutions trust	− .466** (.212)			
Civil security institutions trust	− .112 (.366)			
Supranational political institutions trust	.301 (.415)			
Model diagnostics				
N	3557	5025	5707	4839
Adj. R^2	.033	.162	.093	.102
F-test(df) (prob)	10.297(13) (< .001)	89.317(11) (< .001)	54.218(11) (< .001)	50.720(11) (< .001)
Sargan overid test (S-value) (prob.)	2.512 (< .010)	3.011 (< .010)	.525 (< .010)	2.062 (< .010)
Weak instruments test (F-value) (prob.)		39.860 (< .001)	59.388 (< .001)	23.109 (< .001)

All coefficient estimations are based on non-missing observations

Standard errors are reported in parentheses

***, **, * report significance at the 1, 5, and 10%, respectively

education and income. Trust in political institutions (PIT) is found to be affected positively by age and gender and negatively by education. Trust in civil security institutions (SEIT) is affected by age and marital status positively and by education negatively, while trust in supranational political institutions (SUIT) is positively affected by age and the size of household. As regards the time effects again ST is found to be negatively affected for the 2008 period while the negative time effect is verified for all sub-IT variables, i.e. it is found to hold for PIT, SEIT and SUIT. Finally, as regards the effect of social trust upon institutional trust, this remains positive and statistically significant for the PIT and SUIT variables while the negative effect of the IT to the ST variable seems to draw form the political institutions (PIT). This is a quite interesting finding suggesting a possibly close relationship of individuals with formal political institutions, a relationship that does not coincide with general societal norms of trust in others. The importance of these findings as well as limitations and issues for future research are discussed in the last section of the study.

5 Conclusion and Discussion

5.1 Social Trust and Institutional Trust in an Inverse Causality Context

The present study analyses the causal interrelationship between social and institutional trust using Greek ESV data for the period 2002–2011. Social trust is approached via a three-item variable accounting for generalised trust, fairness and helpfulness. This way a more direct and informative reference regarding the individuals' expectations, as the assumed content of the social trust variable, can be made. The institutional trust variable is approached via seven items referring to trust in political institutions (PIT), civil security institutions (SEIT) and, supranational political institutions (SUIT). Following the results of Hausman specification tests two stage instrumental variables techniques (TSLS) are used in order to analyse the social trust and institutional trust interrelationship in an endogeneity context. Important findings emerge as a result of accounting for inverse causality between the two notions.

Overall, three key findings should be underlined. First, the relationship between social trust and institutional trust is not a self-reinforcing cycle. Social trust is found to positively affect institutional trust, and in the forms of PIT and SUIT in particular. This finding suggests that more trusting individuals would tend to extent their political support to national and supranational institutions such as the national parliament and the EU. On the other hand, a negative relationship is observed with regard to the effect of institutional trust upon social trust. This is a quite significant finding and robust to tests for possible sensitiveness owing to the different nature of institutions summed under the institutional trust variable. More importantly, this negative effect seems to draw from the trust in political institutions variable (PIT), suggesting that higher levels of trust in formal political institutions, such as political parties and the parliament, will negatively affect trust to general, unknown to the individual, others. A 'political path dependence pattern' might be present here. Such a pattern would suggest the existence of group specific political trust (and distrust to unknown others). This argument is further supported by the second key finding of the study which refers to the presence of significant time effects upon social trust and institutional trust. The study's evidence suggest that both social trust and institutional trust levels deteriorate during the 2002–2011 period albeit, institutional trust does so throughout the whole period, and in all its types (PIT, SEIT, SUIT). System trust deterioration activates distrust to others

since people do not perceive the institutions to function according to their expectations. So, it is possible that different groups of people are at work in the wider societal order procedures. Finally, we might distinguish as a third key finding the effect of education on ST and IT. In particular, the effect of education has been found positive for the case of social trust and negative for political and civil security institutions. This is important because, social capital is a strong cultural attribute that can help an economy reboot its performance provided that education, which is the only obvious leverage that a country might employ to foster social capital accumulation (Fukuyama 1999), works as a tool in this direction.

Summarizing the above findings, we might argue that the negative social capital accumulation period experienced by the country has led to decreasing social capital levels and low quality institutions. More educated people trust political and civil institutions less while for those who exhibit higher levels of trust in political institutions a negative effect on trust in general others is observed. To the extent that trust in institutions denotes political support an issue arises as to the relationship between social life and political life in the country. The fact that, the more individuals trust one another, the more they trust institutions, is a quite important finding. It is also in line with other EU and USA evidence which, suggest the existence of a positive relationship between social trust and political trust (Schyns and Koop 2010). Nevertheless, the negative effect of political trust on social trust is an adverse differentiation suggesting that specific group effects might be present in the country. The country does not seem to suffer the lack of widespread societal morality, however it is an alarming evidence the fact that more educated people will tend to trust one another but, not political and civil security institutions. This finding is in line with previous evidence suggesting that the country needs to set up institutions that are compatible with the society's moral norms sustained so far by social structures such as the family and the education system (Bitros and Karayiannis 2010a, b). As Bitros and Karayiannis (2010a) suggest, generalized morality is a key determinant of entrepreneurship in the country. It is a most essential tool for achieving economic prosperity in market economies and a tool for building qualitative institutions of private property, democracy, and economic freedom (Bitros and Karayiannis (2010b). Given that education is a key leverage for building bridging and bonding social capital in a society (Fukuyama 1995), distrust in institutions shows a serious decline in the stock of one crucial type of social capital. In addition therefore, Greece needs to account for the declining quality of public institutions that can strengthen public welfare, democratization and economic freedom.

5.1.1 Limitations and Further Research

Some issues should be noted here with regard to the underlying mechanisms of the causal effects between social trust and institutional trust in Greece. First, it is important to note that the study does not account for lag effects. Given that data are available for a larger time span, future studies might analyse time effects (e.g. a persistence framework analysis) to see both the behaviour of the ST and IT variables as negative or positively accumulating in response to causal interdependence. To the extent that general cultural features are more stable and changes occur much more gradually, than in many formal institutional arrangements (Tabellini 2008), time lag effects might be relevant in our analysis. The issue is further perplexed if we also consider the fact that institutions, as entailing the 'rules of the game' (Wagner et al. 2009), embed in both formal and informal arrangements of a society and govern actions through incentives. These incentives might change not only the codified structures, or written rules (i.e. the formal institutions), but also, the informal institutions

as inclusive of cultures, norms and conventions enforced by social custom (Mathers and Williamson 2011). Time, and a political culture analytical context, can provide us with valuable insights on the causal interdependence of different beliefs, norms and values with socio-cultural and political artifacts (Crothers and Lockhart 2000).

The second important issue, that should be mentioned as a limitation is that the study does not account for the possible presence of specific group effects. This refers to different occupational groups of people, e.g. public servants, entrepreneurs etc., having different bonds with political institutions in the country (Petrou and Daskalopoulou 2014). These bonds might differentiate significantly their perceptions, over who to trust and why, and this could be analysed in future research to provide additional information with regard to the potential radius of trust (Granovetter 1985) effect in the ST and IT relationship. Of equal importance would be the analysis of spatial group effects. Community social capital can become the means to further promote the quality of living conditions or, the means to overcome civil institutions' inadequacies in, for example, safety, spatial structure, etc. (Pickvance 2003; Mayer 2003; Agger and Jensen 2015). The origins, manifestations and outcomes of social capital might, all, be different in these cases (DeFilippis 2001; Purdue 2001; Tóth 2015). So, the interplay between social trust and institutional trust could also be analyzed in view of space specific social capital embeddedness patterns and realisations.

Another issue, which renders future research relates to the path—here a political support path—that can been utilised in order to bring institutional trust into the social trust variable. Here, a political support path has been chosen, but other paths are also possible. Normative perceptions about the role of institutions and their quality (e.g. trust in the presence of rent-seeking/corruption perceptions, etc.) can be studied in this respect. Universal social provisions for citizens, can be considered as another path (mechanism) of the effects of institutions on generalized trust (Kumlin and Rothstein 2005; Robbins 2012). This path would imply effects upon the subjective well-being (Inglehart 1999) and happiness levels of individuals. The existence and the possible effects of such paths merit research in the future.

Finally, an interesting future research issue might relate to the empirical operationalization of the social trust variable. Given the presence of a comparative analytical context, the predictive power of GT, in contrast to ST, might be analyzed. Taken together with the analysis of the potential time, group, and path effects mentioned above, such a study might provide valuable information about the endogenous interrelationship of social and institutional trust. This would contribute to the discussion about the usefulness and inclusiveness of the GT variable.

5.1.2 Issues Relevant to Policy Intervention

A final note should be made with regard to the policy relevance of the study's findings. The present findings are quite important in light of the country's long term need to improve government efficacy and the overall quality of institutions. The political support path, utilized here verifies the existence of causal interdependence between social and institutional trust. However, declining levels of regime support might be inferred given the observed gap between general societal trust and political trust. Thus, political support is not only conscious but also, it carries certain expectations on behalf of the individuals. In light of increased and deeper political awareness levels in the country (Baltas 2013; Bitros 2015), political distrust needs to be addressed. It erodes civil support to the government and can harm the social trust leverage of the country.

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