



Journal of Intercultural Management and Ethics

JIME

ISSN 2601 - 5749, ISSN-L 2601 - 5749

published by

Center for Socio-Economic Studies and Multiculturalism

Iasi, Romania

www.csesm.org

TABLE OF CONTENT

Editorial	3
Rodica Gramma	
Legalization of Euthanasia: Critics and False Theological Arguments	7
Mircea Gelu Buta	
“Are You Ashamed to Talk About It?” Pornography, Moral Incongruence, Morality, Ethics, and Religious Distress in Romania	13
Tudor-Daniel Huțul, Adina Karner-Huțuleac	
Communication Ethics in Local Public Administration in the Age of Facebook	25
Cristina Gavriluță, Alexandrina Cucu	
Contributions to the Ethics of Economic Science. Liberalism and its Alternatives	33
Aurelian Virgil Băluță, Rada Alexandru Cristian	
Intercultural Aspects in the Accounting System in Romania and Republic of Bulgaria	49
Mihaela Bebeșelea	
Sunk Sub: Looking Under the Hood	55
Thomas D. Zweifel	
Using Nonlinear and Structural Equations (Sem) for Testing the Correlation Between Political Culture and Substantive Democracy. Cross-National Comparisons	65
Silviu-Petru Grecu	
How Can the Balint Approach Contribute to Contemporary Management Education?	81
David M. Brock, Clive D. Brock	

USING NONLINEAR AND STRUCTURAL EQUATIONS (SEM) FOR TESTING THE CORRELATION BETWEEN POLITICAL CULTURE AND SUBSTANTIVE DEMOCRACY. CROSS-NATIONAL COMPARISONS

Silviu-Petru Grecu PhD

Associate Professor, Faculty of Philosophy and Social-Political Sciences

“Al. I. Cuza” University, Iași, Romania

E-mail: silviu.grecu@uaic.ro

Abstract

This paper aims to test the relationship between political culture and substantial democracy in European countries. Substantial democracy could be achieved through an elevated level of political deliberation and an active role played by citizens in conventional or unconventional forms of political participation. The study used secondary statistical data for observing and estimating the correlation between political culture and both deliberative and participatory democracy. Using a quantitative research design, based on structural equations modeling (SEM) and both nonlinear equations of regression and differential equations with partial derivatives, we estimated direct and indirect effects generated by the political culture in the field of substantial democracy. The sample is represented by EU-27 countries plus the UK. Empirical findings suggest new significant research directions for understanding the correlation between cultural variables and the quality of substantial democracy.

Keywords: substantial democracy, political culture, SEM models, civil society, civil rights

1. Political culture and substantial democracy. A systematic literature review

This paper aims to test the link between political culture and the level of participatory democracy. Scholars have underlined that democracy is a political regime based on civic culture and civic engagement (Almond & Verba, 1963; Huntington, 1991; Cohen & Arato, 1994; Colaresi, 2003; Almond et al., 2004; Cheibub, 2007). Together with strong political institutions, institutional transparency, constitutional design and political competition, democracy should be based on cultural and political values (Goodin, 1996; Hooghe & Stolle, 2003; Kopstein & Lichbach, 2005; Roller, 2005; Rhodes, Binder, & Rockman, 2006). The core of liberal democracy must remain “individuals” with their social, political and economic needs and rights. Democratic regimes should preserve “human values” and political liberties throughout society. In this respect, democracies have a responsibility to safeguard human rights, human values and human dignity (Sartori, 1987; Dahl, Shapiro, & Cheibub, 2003; Lijphart, 2012). In this respect, democratic regimes should be based on a set of common cognitions, beliefs and political attitudes. Formal and non-formal education are seen as vectors for spreading democratic values throughout society. Political socialization and cultural environment could predict the further evolutions of both political rights and civil liberties. This paper is structured into four sections for presenting the systematic literature review related to the complex interaction between political culture and democracy, research methods, empirical findings and several discussions and significances related to the statistical results.

An important variable which could fulfil the democratic sphere is represented by political culture. Defined in terms of implicit and explicit civic attitudes, political culture creates premises for sharing political knowledge and shaping further political behaviors (Newton & Van Deth, 2010). Moreover, political culture could refer to conscious or unconscious beliefs, which are transferred throughout society using different conventional or

unconventional channels. In the early 1950s, political scientists observed that political behavior is strongly influenced by traditional media, social neighborhoods, geographical proximity, and primary and secondary types of political socialization. In this respect, both human personality and social attitudes are explained, in various proportions, by the influence of social and cultural variables. For example, anthropologists have argued that social personality is a complex mechanism, which consists of individuals' ability to respond and react to social or cultural stimuli. In order to explain the evolutions of different social and political systems, we aim to emphasize the role played by cultural variables in shaping different patterns of political behavior. For this reason, the cultural environment plays an important role in generating social stability, political coherence, individuals' integration in social and political activities and institutional design. In the 1950's-1960's Almond and Verba theorized the impact of the political culture in the field of political regimes (Almond & Verba, 1963, pp.3-43; Newton & Van Deth, 2010, pp.170-174). Using long-term quantitative comparisons between five nations, political scientists discussed three types of political culture: parochial culture, subject culture and participative culture. This theoretical assumption is based on the citizens' responses to three questions related to political emotions, political cognition and political orientations. Related to these variables, scholars used a model based on several indicators as: a. system as a general object; b. input objects; c. output objects; d. self as an object (Almond & Verba, 1963, p. 17).

As a "flow" of political knowledge, political culture could be seen as a tool for both developing and assessing individuals' beliefs, cognitions, political emotions and ideological orientations. In order to emphasize the role of political culture in the field of political regimes, Almond and Verba pointed out that parochial political culture could be related to authoritarian political regimes, subject culture could be associated with post-authoritarian order and participative political culture is specific to Western democracies. If we analyze political culture in terms of input and output, we highlight the fact that there is positive feedback only in democratic systems, based on participative and civic culture. In this respect, participative culture is a key variable for defining and explaining the dynamics from procedural to substantive democracy. Countries developed in the field of participative and civic culture are more likely to become full democratic regimes. In order to extend the concept of full democracy, we aim to argue that the functioning of government, rule of law, free and fair elections, political engagement, political accountability, respect for human rights and political participation should be seen as the main pillars of substantive democracy (Jacobs & Shapiro, 1994). Although there are several differences, we assume the fact that substantive democracy (Welzel & Klingemann, 2008; Trebilcock & Chitalkar, 2009, pp. 192-224) could be seen in terms of participatory democracy, being based on civic engagement, citizens' involvement in political debates, political elections, institutional design and political feedback by governmental outcomes. Beyond procedural democracy, substantive democracy refers to the complete and complex involvement of the citizens in all the aspects which are regulated by the political rules and norms (Fetrati, 2003, pp. 379-390; Branco, 2016; Carnevale & Occhipinti, 2020). This fact includes political information, political participation in decision-making and political assessment of the governmental public policies (Lühiste, 2013; Fiedlschuster, 2018; Ma, Liang, & Wan, 2023). Even though the normative theory of democracy sustains individuals' involvement in public affairs (assuming the participatory democracy model), there are a lot of difficulties and discrepancies in national political practices.

Contemporary political realities show several perspectives related to the impact of participatory democracy in the field of political projects (Hilmer, 2010; Kutay, 2015; Bherer, Dufour, & Montambeault, 2016). Most of the examples are related to budgetary participatory democracy. Western European capitals and smart cities could be associated with a model of participatory democracy in the field of public economic affairs (Smith & Martin, 2022;

Esposito, Felicetti, & Terlizzi, 2023; Pickering, 2023). Thus, citizens could participate in decision-making at the local level for sustaining their opinion or decisions in the field of local finances. ICT development could increase the number of cities in which residents could have the possibility to participate in local decision-making using electronic platforms and votes (Della Porta, 2019; Dacombe & Parvin, 2021; Touchton & McNulty & Wampler, 2023)

In accordance with these premises, participative political behavior depends on the level of political culture, the values included in the cultural model, the magnitude of the social networks and interactions and the citizens' political orientation. Thus, cultural perspective is more likely related to political behavior and political accountability. Besides the perspectives introduced in political sciences by Almond and Verba, historical heritage plays an important role in shaping a sustainable model of political culture. Countries characterized by rapid political and economic development are more likely to develop participative political cultures. In this meaning, Western democracies like France, the United Kingdom, Germany and Scandinavian states have an elevated level of the Democracy Index and engage in political practices that promote civic engagement in public affairs. "Early" and "middle" developed countries established a balance between citizens' interests, robust political institutions and democratic identities. Their historical past, marked by modern political revolutions and a profound commitment to human dignity and social values, serves as a significant predictor for their current model of political culture.

Current research papers on the topic of participative political culture and democracy highlight that an elevated level of substantial democracy should be obtained through self-expression and liberal values. Inglehart and Welzel's cultural map shows that there are significant statistical differences between societies based on survival and societies based on self-expression (Inglehart & Welzel, 2005). These discrepancies are relevant when we take into account traditional and secular societies. Societies based on self-expression are more likely to have full democratic systems and develop political practices related to participatory democracy. Statistical data reflect that Australia, New Zealand, the USA, the UK, Western Europe and Nordic states are based on self-expression and have obtained an increased score associated with the level of national democracy. In contrast, African and Asian countries (with few exceptions) are more likely to be associated with hybrid political regimes and survival values. In order to complete the perspective introduced in the field of political culture by Inglehart and Welzel, Hofstede proposed a new measure of the social culture based on the difference between individualist and collectivist cultures. In addition to this index, Geert Hofstede proposed several cultural dimensions as masculinity, power distance, uncertainty avoidance and long-term orientation (Hofstede, 2001). However, the individualist-collectivist index reflects the degree of the integration of individuals into different social groups. Moreover, when we analyze this aspect we should take into account the level of social inclusion and the degree of social progress.

Concerning the importance of political culture in the field of substantial democracy, we agree on the fact that cultural values are an important predictor of both participatory and deliberative democracy. Better social achievement of the political values (tolerance, freedom, equality, equity, human dignity, and respect for civil rights and political liberties) is an important piece of the puzzle which reflect the citizens' involvement in public affairs. This piece of the puzzle is relevant for building fair social and political institutions, fair and regular elections, an input-output model of decision-making and a consolidated democratic order.

2. Research Methodology

Using a quantitative research design, this paper aims to answer several research questions such as "What is the magnitude of the correlation between political culture and the level of deliberative democracy?"; "How relevant are political values in shaping a model of

participatory democracy?"; "What is the impact of the political culture in the field of participatory and electoral democracy?" In accordance with these research questions, the paper has the following research objectives:

Objective 1 (O₁): to analyze the evolution of the participative culture in European countries.

O₂: to estimate the statistical association between political culture and the level of deliberative democracy.

O₃: to estimate the statistical association between political culture and the level of participatory democracy in European countries.

O₄: to observe the impact of political values in the field of substantial democracy.

In order to achieve these research objectives, we aimed to test several research hypotheses:

Hypothesis 1 (H₁): An increased level of political culture is strongly related to an elevated level of deliberative democracy.

H₂: Self-expression values are an important predictor of participatory democracy in developed countries.

H₃: States characterized by an increased level of civic culture are more likely to promote substantial democracy.

Concerning the statistical data, this paper used secondary quantitative data collected from academic and political sources. In this meaning, data related to the level of democracy, functioning of government, political culture, political participation and civil rights were collected from The Economist Intelligent Unit (EIU). This is an international think-tank that provides yearly assessments of the quality of the national democracy rated from 1 to 10. Taking into consideration this premise, EIU ranked political regimes in four categories: authoritarian regimes (values from 1 to 4.00), hybrid political regimes (values from 4.01 to 6.00), flawed democracies (values from 6.01 to 8.00) and full democracies (values from 8.01 to 10). An additional important resource used in data curation and analyses is the Varieties of Democracy Institute (V-Democracy). This is an academic research institute which provides data related to five components of democratic regimes, using indicators and sub-indicators. V-Democracy uses the following components for measuring democratic regimes: electoral democracy, participatory democracy, egalitarian democracy, liberal democracy and deliberative democracy. Data are presented through a statistical scale of 0 to 1. The lowest values of these indices are related to the lack of democracy in the analyzed political system. The highest scores are relevant for an elevated level of democracy. Besides, political variables we collected data related to the level of civil society engagement in public decisions and the importance of the political leader. All these data were analyzed in connection with economic determinants such as GDP and GDP/ capita. Both GDP' values were collected from the official database provided by World Bank. Political values, as well as traditional-secular societies and survival- self-expression were collected from World Values Survey (WVS). World Values Survey is a research institute which provides data and methodologies for analyzing different components of the social and political culture.

The sample of the study is composed of the 27 EU member states plus the United Kingdom. We used a time series over a twelve-year period, with the data representative for the period 2010-2022. Table 1 presents the research variables used in our statistical analysis:

Variables	Symbols	Units of Measurement	Data sources:
Deliberative Democracy Index	DD	[0;1]	Varieties of Democracy Institute (V DEM) ¹ , University of Gothenburg
Participatory Democracy Index	PD	[0;1]	Varieties of Democracy Institute (V DEM), University of Gothenburg
Political Participation Index	PP	[0;1]	The Economist Intelligence Unit (EIU) ²
Political Culture	PC	[0;10]	The Economist Intelligence Unit (EIU)
Civil Liberties	CL	[0;10]	The Economist Intelligence Unit (EIU)
Functioning of the Government	FG	[0;10]	The Economist Intelligence Unit (EIU)
GDP/ capita	GDP	\$/ capita	The World Bank Data ³
Civil Society	CS	[0;1]	Varieties of Democracy Institute (V DEM), University of Gothenburg
Pearson of the Leader	PL	[0;1]	Varieties of Democracy Institute (V DEM), University of Gothenburg
Traditional/ Secular values	TS	[0;100]	World Values Survey ⁴
Survival/ Self-Expression	SSE	[-3.5;+3.5]	World Values Survey

Table 1: Research Variables

The aim of the paper is to use Structural Equations Modeling (SEM) for observing relevant factors which could be related to deliberative and participatory democracy in European countries. The SEM method is based on the covariance between the dependent variable and other factors both for exploring or confirming possible links or associations between data (Cameron & Trivedi, 2005).

Let be y_1, y_2, z_1 - variables and M- the mathematical model. y_1, y_2 are endogenous variables and z_1 is the exogenous variable:

$$y_1 = \gamma_1 + \beta_1 \cdot y_2 + \varepsilon_i$$

γ_1 = intercept; β_1 = regression coefficient; ε_i = residuals

$$y_2 = \gamma_1 + z_1$$

Using the ratio between the partial derivatives we estimate the coefficient β :

$$\beta_1 = \left(\frac{\partial y_1}{\partial z_1} \right) \div \left(\frac{\partial y_2}{\partial z_1} \right) \Rightarrow \beta_1 = \frac{\partial y_1}{\partial y_2}$$

Let be $y_1 = DD$; $y_2 = PC$; $z_1 = F$, where $F = \{CL; FG; GDP; CS; PL; TS; SSE\}$, using data from the research sample we can deduce that:

¹ Varieties of Democracy Institute (V DEM), University of Gothenburg, available online at <https://www.v-dem.net/> (accessed on 10 May 2023).

² The Economist Intelligence Unit, Democracy Index, available online at <https://www.eiu.com> (accessed on 25 May 2023).

³ World Bank, GDP growth, available online at <https://data.worldbank.org/indicator/NY.GDP.PCAP.KD.ZG?view=chart> (accessed on 25 May 2023).

⁴ World Values Survey, Inglehart- Welzel's Cultural Map, available online at <https://www.worldvaluessurvey.org/wvs.jsp> (accessed on 10 May 2023).

$$\beta_1 = \frac{\partial DD}{\partial F} \div \frac{\partial PC}{\partial F} = \frac{\partial DD}{\partial F} \cdot \frac{\partial F}{\partial PC} \Rightarrow \beta_1 = \frac{\partial DD}{\partial PC}$$

If $y_1 = PD$; $y_2 = PC$; $z_1 = F$, where $F = \{CL; FG; GDP; CS; PL; TS; SSE\}$

$$\beta_2 = \frac{\partial PD}{\partial F} \div \frac{\partial PC}{\partial F} = \frac{\partial PD}{\partial F} \cdot \frac{\partial F}{\partial PC} \Rightarrow \beta_2 = \frac{\partial PD}{\partial PC}$$

If $y_1 = ED$; $y_2 = PC$; $z_1 = F$, where $F = \{CL; FG; GDP; CS; PL; TS; SSE\}$

$$\beta_3 = \frac{\partial ED}{\partial F} \div \frac{\partial PC}{\partial F} = \frac{\partial ED}{\partial F} \cdot \frac{\partial F}{\partial PC} \Rightarrow \beta_3 = \frac{\partial ED}{\partial PC}$$

In addition to structural equations, we used both linear and nonlinear regression models as follows:

$$y_i = \beta_0 + \beta_1 \times x_1 + \beta_2 \times x_2 + \dots + \beta_n \times x_n + \varepsilon_i$$

$$y_i = \beta_0 + \beta_1 \times x_1 + \beta_2 \times x_2^2 + \dots + \beta_n \times x_n^k + \varepsilon_i$$

where

y_i = dependent variable; β_0 = intercept; $\beta_{1,n}$ = regression coefficients;

$x_{1,n}$ = independent factors/ predictors; ε_i = standardized residuals

The numerical values of the variables are normally distributed with Kolmogorov-Smirnov (K-S) >0.135, $p > 0.05$. In accordance with these premises, this paper tested the association between deliberative, participatory and electoral democracy with cultural factors represented by the political culture index, traditional/ secular values and survival/ self-expression indices.

The following sections present the main empirical findings related to the correlation between political culture and both deliberative and participative democracy. Moreover, the following sections are presented discussions, based on the significance resulting from the quantitative analyses. However, in this section we correlated the empirical findings with research guidelines and academic literature for highlighting the complex interaction between cultural variables and substantial democracy.

3. Results

Concerning the statistical distribution of the research variables, we used them as criteria for classifying data on the historical past and political and cultural heritage. In this respect, we used two categories of countries based on their shared political past: post-communist countries from the Central and Eastern part of the EU-27 and democratic countries, which are specific to Western, Southern and Nordic EU-27. In the last category, we included the United Kingdom as a former member state of the European Union. We used this data split procedure for stressing the differences that occurred between the two groups of political systems. The observed disparities are the product of different historical backgrounds and specific ways of social development. Table 2 shows the main differences between post-communist and democratic political systems. Regarding the level of political culture, democratic countries are more likely to have a participative and civic model. There is a significant difference in the average values, with democratic countries having values that are 1.35 times larger than post-communist countries ($\mu=5.90, \sigma=1.08$ in post-communist countries and $\mu=8.07, \sigma=1.07$ in democratic states). Similar differences are registered in the field of political participation and the functioning of government. Closer values are met in the field of civil liberties and participatory democracy. Statistical results show that there is a significant difference between means in the field of deliberative democracy.

	POST-COMMUNIST COUNTRIES						DEMOCRATIC COUNTRIES					
	Mean	Std. Deviation	Skewness	Kurtosis	Minimum	Maximum	Mean	Std. Deviation	Skewness	Kurtosis	Minimum	Maximum
FUNCTIONING OF GOVERNMENT	6.24	0.99	-0.05	-0.84	4.52	7.77	7.94	1.01	-0.49	0.72	5.65	9.53
POLITICAL PARTICIPATION	6.03	0.98	0.60	0.52	4.63	8.19	7.48	1.17	-0.54	-1.14	5.28	8.89
POLITICAL CULTURE	5.90	1.08	0.01	-1.33	4.38	7.40	8.00	1.07	0.17	-0.76	6.25	9.90
CIVIL LIBERTIES	8.20	0.62	-0.31	-0.19	6.94	9.07	8.95	0.50	-0.87	0.41	7.82	9.63
CIVIL SOCIETY	0.81	0.08	0.11	0.47	0.66	0.95	0.93	0.04	-0.29	-1.33	0.85	0.99
PEARSON OF LEADER	0.70	0.40	0.70	0.88	0.08	1.59	0.57	0.72	2.55	7.26	0.08	2.85
DELIBERATIVE DEMOCRACY	0.65	0.11	-0.86	-0.19	0.42	0.77	0.80	0.06	-0.85	1.67	0.66	0.87
ELECTORAL DEMOCRACY	0.80	0.08	-1.08	-0.16	0.64	0.88	0.88	0.03	-1.90	5.31	0.79	0.91
PARTICIPATORY DEMOCRACY	0.57	0.08	-0.83	-0.32	0.43	0.68	0.63	0.04	-0.18	2.02	0.54	0.72

Table 2: Descriptive statistics. Central tendency, dispersion and distribution

Democratic systems are more prone to develop deliberative models of democracy than post-communist political systems ($\mu=0.65$, $\sigma=1.11$ in post-communist countries and $\mu=0.8$, $\sigma=0.06$ in democratic states).

The map from Figure 1 shows the differences between industrial democracies (specific for Western and Nordic Europe) and the post-communist countries from Central and Eastern Europe in the field of political culture. Dark colours are used for reflecting increased values of PC and light colours show the low values of PC. The gradient between light and dark colours show several variations of PC in the Central and Southern part of the EU-27 plus the UK.

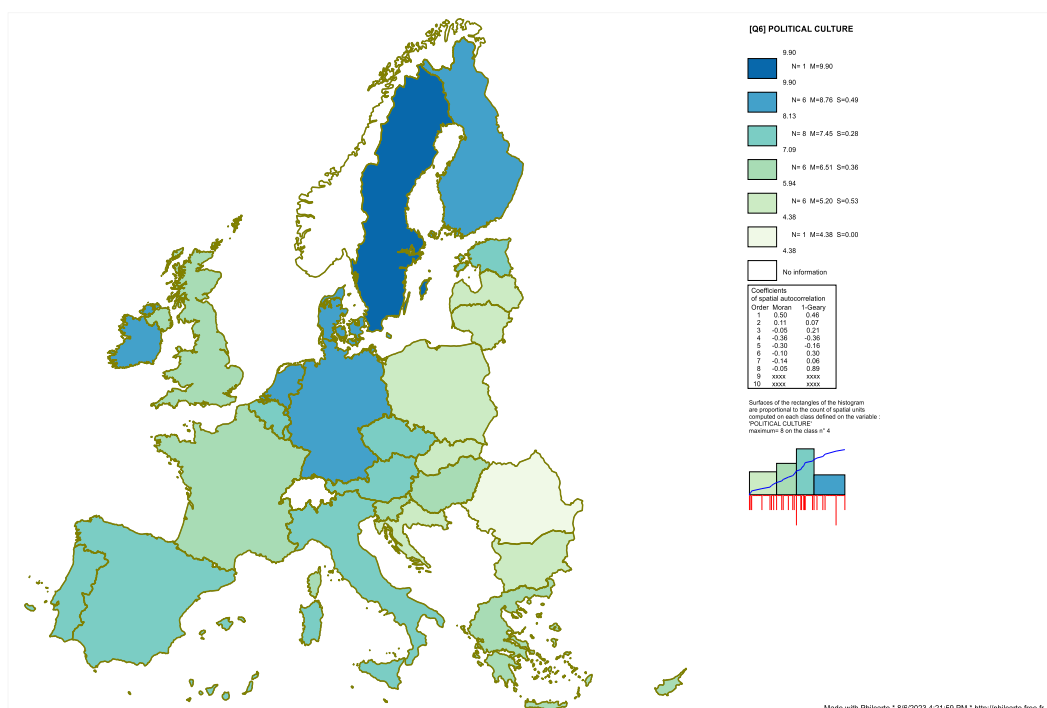


Figure 1: The map of Political Culture in EU-27 plus U.K.

Nordic and Western countries registered an elevated level of PC, being included in the sphere of participative cultures. Germany (8.13), Netherlands (8.29), Finland (8.75), Denmark

(9.38), Ireland (9.38) and Sweden (9.8) are the most representative European countries for an increased level of participative political culture. Czech Republic (7.35) and Austria (7.4) registered moderate values in the field of participative political culture. In contrast, Eastern Europe is characterized by low scores in the field of cultural variables: Romania (4.38), Bulgaria (4.38), and Croatia (5.11).

Regarding the impact of political culture in the field of deliberative democracy, we estimated a moderate positive association. An increased level of political culture could be associated with an increased level of deliberative democracy. The SEM model reflects a moderate association between political culture and deliberative democracy.

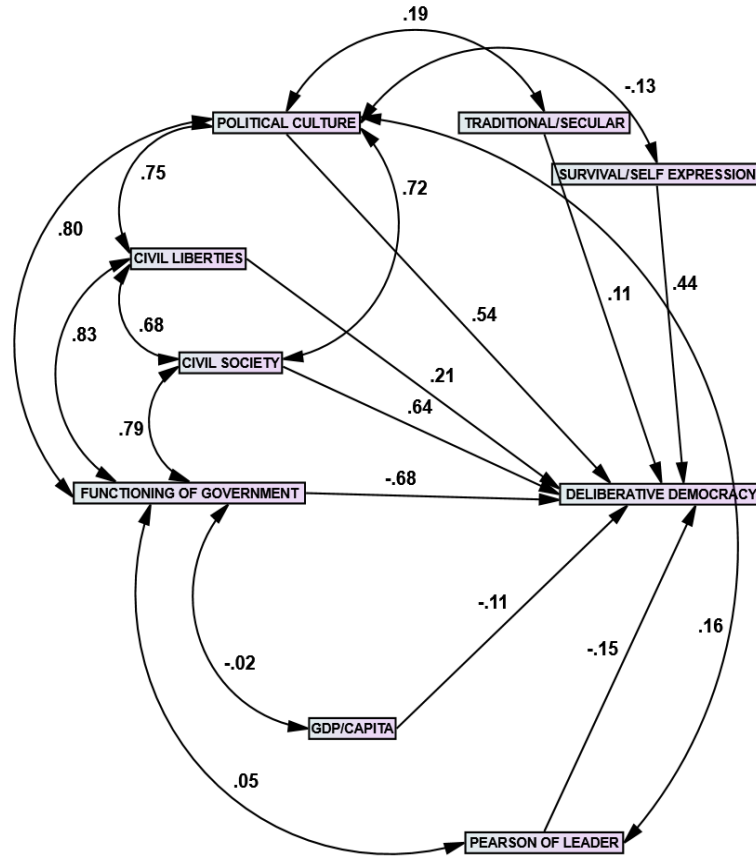


Figure 2: SEM model I: Explaining Deliberative Democracy

In accordance with the SEM model results we can underline that there are the following coefficients of association between dependent and independent factors:

$$\beta_{DD,PC} = 0.54; \beta_{DD,CS} = 0.64; \beta_{DD,FG} = -0.68; \beta_{DD,SSE} = 0.44.$$

Taking into consideration the significant associations between DD and independent factors ($\beta > 0.5; p < 0.05$) we obtained the following structural equation:

$$DD = -0.232 + 0.54 \cdot PC + 0.64 \cdot CS - 0.68 \cdot FG$$

Regarding this equation, we can stress the fact that political culture has an indirect effect in the field of deliberative democracy, being catalysed by the presence of a strong civil society ($\beta_{DD,CS} = 0.64, p < 0.05$) and limited governmental powers ($\beta_{DD,FG} = -0.68, p < 0.05$).

For enhancing the quantitative results we proposed a nonlinear model for understanding the influence of these factors in the positive dynamics of deliberative democracy. Moreover, we used integral calculus, first-order derivative and a model based on partial differential

equations. Figure 3 presents the polynomial regression models between DD and independent factors as PC, CL and FG.

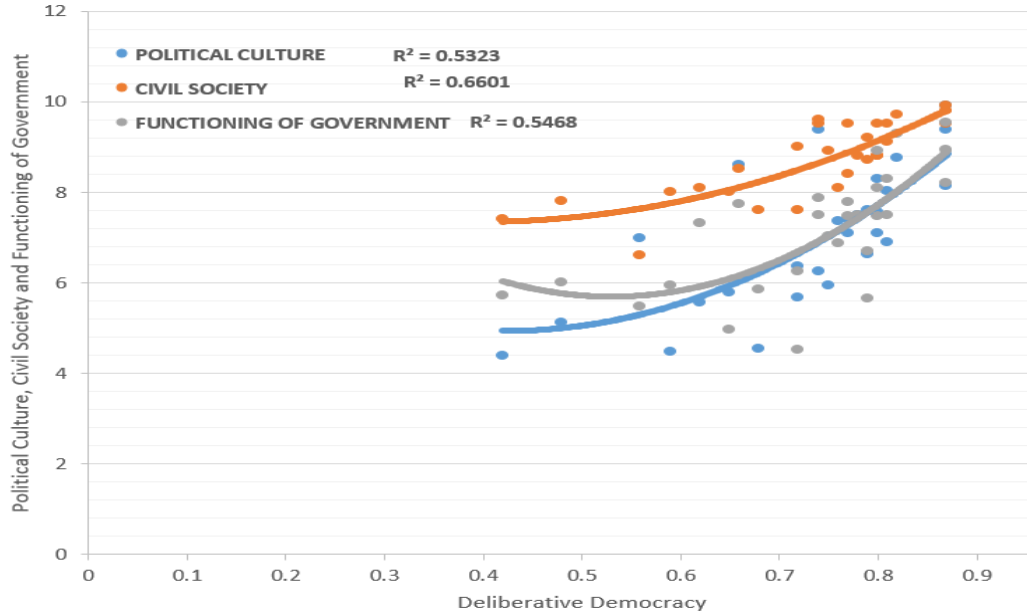


Figure 3: Polynomial Regression for Deliberative Democracy. Independent variables: Political Culture, Civil Society and Functioning of the Government

Using equations of regression we observed that the best model which fits the statistical data is a nonlinear model represented by a quadratic equation of regression. Statistical results show moderate values of R^2 , with the following scores: $R_{DD,PC}^2 = 0.53$, $R_{DD,CS}^2 = 0.66$, $R_{DD,FG}^2 = 0.54$ and $R_{DD,CL}^2 = 0.41$. In accordance with these results we have estimated the following relations between dependent and independent variables:

Let be DD, PC, CS, CL and FG, and $f(DD, PC, CS, FG, CL)$, with $f: PC \rightarrow DD$; $f: CS \rightarrow DD$; $f: FG \rightarrow DD$; $f: CL \rightarrow DD$, and $f(PC) = DD$; $f(CS) = DD$; $f(FG) = DD$; $f(CL) = DD$

$$f(PC) = f_1; f(CS) = f_2; f(FG) = f_3; f(CL) = f_4$$

$$f_1 = -0.012 \cdot PC^2 + 0.214 \cdot PC - 0.184$$

$$f_2 = -0.383 \cdot CS^2 + 1.697 \cdot CS - 0.455$$

$$f_3 = 0.06 \cdot FG^2 - 0.03 \cdot FG + 0.621$$

$$f_4 = 0.01 \cdot CL^2 + 0.096 \cdot CL - 0.146$$

Using the first order derivative of these relations we obtained:

$$\frac{d}{dPC} = -0.024 \cdot PC + 0.214; \frac{d}{dCS} = -0.766 \cdot CS + 1.697; \frac{d}{dFG} = 0.12 \cdot FG - 0.06; \frac{d}{dCL} = 0.02 \cdot CL + 0.096$$

In accordance with the previous calculus we proposed a model based on partial derivative to estimate the changes in the values of the DD taking into consideration PC and the other factors as CS, FG and CL:

$$\frac{dDD}{dPC} = \frac{\partial DD}{\partial CS} \cdot \frac{dCS}{dPC} + \frac{\partial DD}{\partial FG} \cdot \frac{dFG}{dPC} + \frac{\partial DD}{\partial CL} \cdot \frac{dCL}{dPC}$$

In order to solve this differential equation we obtained:

$$\begin{aligned} \frac{dDD}{dPC} = & \left[(-0.766 \cdot CS + 1.697) \cdot \frac{dCS}{dPC} \right] + \left[(0.12 \cdot FG - 0.06) \cdot \frac{dFG}{dPC} \right] \\ & + \left[(0.02 \cdot CL + 0.096) \cdot \frac{dCL}{dPC} \right] \end{aligned}$$

Taking into consideration the changes in the field of PC and the influences generated by CS and FG we observed that a relevant factor which could be involved in the dynamics of DD is represented by civil society. Changes in the set of values related to civil society could have an important impact on the changes related to the specific values of deliberative democracy. Also, the coefficient of FG confirms a low impact which could be produced by the changes in the numerical values of the FG in the field of DD. Moreover, civil society could be seen as an important catalyst in the further evolutions of the DD in European countries included in our statistical sample. Measuring the relation between $\frac{dDD}{dPC}$ and the other independent factors as CS, FG and CL we obtained a coefficient of determination $R^2 = 0.727$. This is an adequate statistical model which reflects that the most important variable that mediates the relation between political culture and deliberative democracy is civil society.

Regarding participatory democracy, the SEM model indicates that there are significant variables related to participatory democracy. Moreover, we can observe that relevant predictors of participatory democracy in European countries are represented by PC ($\beta = 0.63, p < 0.05$), CS ($\beta = 0.42, p < 0.05$), FG ($\beta = -0.71, p < 0.05$) and SSE ($\beta = 0.75, p < 0.05$). Figure 4 reflects the statistical relations between research variables:

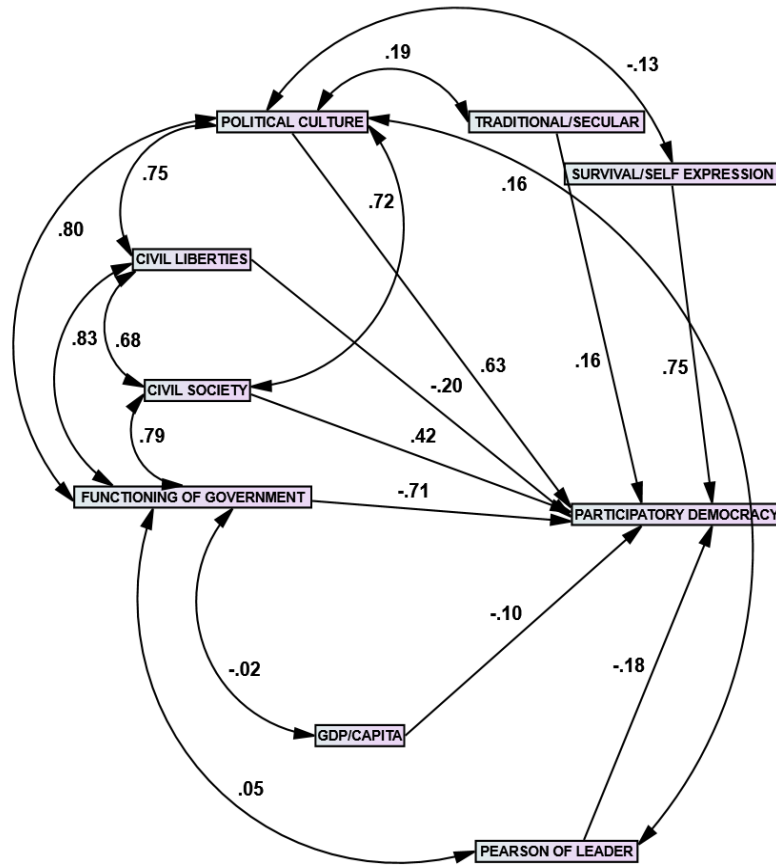


Figure 4: SEM model II: Explaining Participatory Democracy

Concerning the dynamics of the participatory democracy (PD) in our sample we estimated through structural equations that the model consists of the following variables:

$$PD = 0.368 + 0.68 \cdot PC + 0.42 \cdot CS + 0.75 \cdot SSE - 0.71 \cdot FG$$

In order to measure the impact of the independent factors in the field of participatory democracy, we used the index of political participation. In this regard, alongside the independent factors already presented (PC, CS and FG) we have introduced a new independent variable represented by civil liberties (CL). Using the best-fit models, we observed nonlinear associations between these factors and the level of political participation. There are measured weak and moderate coefficients of determination with $R^2 \in [0.40; 0.54]$.

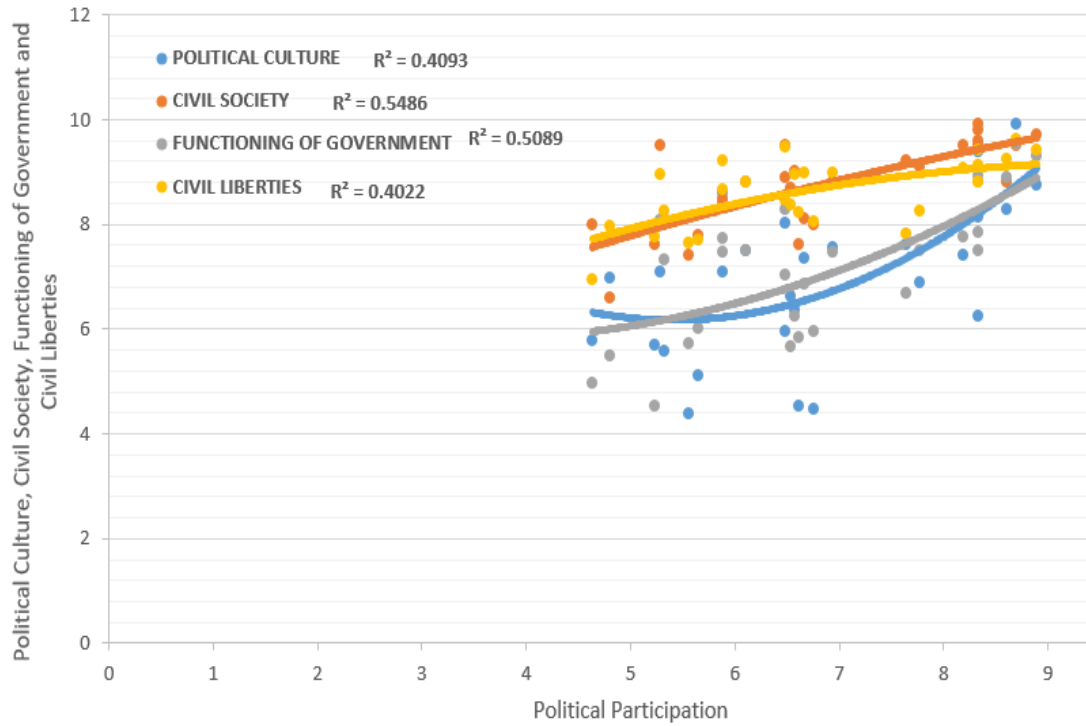


Figure 5: Polynomial and Power Regression Models for Deliberative Democracy. Independent variables: Political Culture, Civil Society, Functioning of the Government and Civil Liberties

Let be PP, PC, CS, CL and FG, and $f(PP, PC, CS, FG, CL)$, with $f: PC \rightarrow PP$; $f: CS \rightarrow PP$; $f: FG \rightarrow PP$; $f: CL \rightarrow PP$, and $f(PC) = PP$; $f(CS) = PP$; $f(FG) = PP$; $f(CL) = PP$. In accordance to our dataset, we estimated the relations between political participation and other independent variables represented by PC, CS, FG and CL. In this respect, we obtained the following relations between PP and the independent variables:

$$\begin{aligned} f(PC) &= f_1'; f(CS) = f_2'; f(FG) = f_3'; f(CL) = f_4' \\ f_1' &= 0.113 \cdot PC^2 - 0.106 \cdot PC + 8.48 \\ f_2' &= 12.61 \cdot CS^3 - 9.494 \cdot CS^2 + 5.51 \\ f_3' &= 0.051 \cdot FG^2 - 0.018 \cdot FG + 4.26 \\ f_4' &= 0.246 \cdot CL^{1.537} \end{aligned}$$

For creating the complex model of interaction between these factors we used the first order derivative of these functions:

$$\frac{d}{dPC} = 0.226 \cdot PC - 0.1067; \frac{d}{dCS} = 37.83 \cdot CS^2 - 18.98 \cdot CS; \frac{d}{dFG} = 0.102 \cdot FG - 0.018; \frac{d}{dCL} = 0.378 \cdot CL^{0.537}$$

In accordance with the previous calculus, we proposed a model based on partial derivative to estimate the changes in the values of the PP taking into consideration PC and the other factors as CL, FG and CL:

$$\frac{dPP}{dPC} = \frac{\partial DD}{\partial CS} \cdot \frac{dCS}{dPC} + \frac{\partial DD}{\partial FG} \cdot \frac{dFG}{dPC} + \frac{\partial DD}{\partial CL} \cdot \frac{dCL}{dPC}$$

Integrating the derivatives' values in the model we obtained:

$$\frac{dPP}{dPC} = \left[(37.83 \cdot CS^2 - 18.98 \cdot CS) \cdot \frac{dCS}{dPC} \right] + \left[(0.102 \cdot FG - 0.018) \cdot \frac{dFG}{dPC} \right] + \left[(0.378 \cdot CL^{0.537}) \cdot \frac{dCL}{dPC} \right]$$

The mathematical models show that important factors which are relevant to the changes in the statistical values of PP are represented by the CS and CL. Regarding the importance of the factors, we estimated the coefficient of determination of the differential equation $R^2 = 0.926$. The result shows that our model is adequate for describing the variations of the PP if other factors such as CL, CS and FG are influenced by the political culture (PC). In accordance with the theoretical perspectives of democracy, our findings highlight the fact that political participation could be explained through the interaction of civil society and civil liberties. Thus, political culture has an indirect effect in increasing the level of political participation, using civil society as a strong interface between citizens and political systems. Moreover, an increased level of respect for civil rights and political liberties is relevant in the further evolution of political participation across countries included in the sample.

4. Discussion

This paper presents the relationship between substantive democracy and other independent variables such as political participation, deliberation, political culture and civil society, functioning of government, political values and economic factors. The major direction of the paper consist in shaping a comprehensive model for explaining the relation between political culture and substantial democracy. In this context, our data cover relevant variables from the academic literature about the topic of participatory democracy and cultural variables. As we pointed out in the introductive part of the paper, most parts of political scientists created the theoretical link between political culture and democracy. Political culture is an important variable for understanding the nuances and differences that have occurred between different political systems (Almond & Verba, 1963, pp.3-43; Newton & Van Deth, 2010, pp.170-174; Inglehart & Welzel, 2005). This fact could be explained by the fact that political culture creates a coherent set of political beliefs, cognitions and emotions among the citizens. In this meaning, political culture shapes different patterns of political behavior and encourages different forms, conventional or unconventional, of political action.

Recent findings in political sciences and cultural studies argued that cultural mechanisms are relevant predictors of democracy. Parochial and subject cultures are more likely to be associated with authoritarian and post-authoritarian political regimes. Civic cultures are more prone to produce consolidated democracies. In practice, it is very difficult to identify a genuine form of political culture. Most parts of the country are characterized by a cultural mix between subject and civic culture. Authoritarian and hybrid political regimes are defined by a mix of parochial and subject cultures. Moreover, these arguments should be completed by the complex and crucial role played by civil society, respect for civil rights and political liberties. In accordance with these assumptions, we underline that political culture is an important factor, but real triggers which could contribute to shaping a consolidated model of substantial democracy could be represented by the convergence between civil society, governmental accountability and efficiency and political practices implemented to preserve human dignity, civil liberties and political rights (Della Porta, 2019; Dacombe & Parvin, 2021; Touchton, McNulty, & Wampler, 2023).

Using a quantitative research design, this paper shows the complex relationship between political culture and substantial democracy. It tests, through structural and differential equations, the complex interaction between cultural variables and the level of deliberative and participatory democracy. For achieving an optimal level of substantial democracy, countries should take into consideration political debates, civic engagement in public affairs, positive

feedback between civic inputs and governmental outcomes, and a fair political model that encourages political participation (in various forms: electoral participation, social movements, civic actions, political meetings, etc.)

An important finding of the paper consists in identifying several predictors alongside political culture. In this respect, an elevated level of deliberative democracy could be understood in terms of civil society and limited governmental action in the social field. Both structural and differential equations reflect that civil society is a complex and relevant variable which predicts changes in the structure of political deliberation. Moreover, civil society is seen as a catalyst for spreading different values and specific elements of political culture. It is the interface between citizens and political decision-makers. Civil society should represent citizens' needs, interests and projects in relation to power structures (individual political actors, collective actors, political institutions). The nexus between political culture and deliberative democracy is realized through an active role played by civil society ($\beta_{DD,CS} = 0.64$). The limitation of the governmental power alongside self-expression values ($\beta_{DD,SSE} = 0.44$) is more likely to be correlated with an increased level of deliberative democracy across European countries included in the sample.

Concerning participatory democracy, empirical findings suggest that political culture ($\beta_{PD,PC} = 0.63$) is considered an important variable. Alongside political culture, participatory democracy is strongly related to self-expression values ($\beta_{PD,SSE} = 0.75$). Unlike deliberative democracy, in this case, political culture and political values could be seen as direct predictors of participation. In deliberative democracy, political culture and political values are mediated by the important role played by civil society. There are different ways of shaping democratic order: 1. deliberation is mediated by civil society; 2. participation is based on civic and political culture and self-expression values. In the case of deliberative democracy, political culture plays an indirect role. In contrast, in the participatory model, political culture could emphasize self-expression, civil rights and political engagement. Quantitative results pointed out by the differential equations with partial derivatives indicate that changes in both the structure of the civil society index and civil liberties values are related to changes in the field of political participation under the influence of the political culture.

In accordance with the methodological perspectives, for achieving research objective O₁ we created a map of the political culture across EU-27 countries plus the UK. The map suggests significant differences between Western and Nordin Europe and other regions such as Southern and Central and Eastern Europe. Statistical indicators related to spatial autocorrelation reflect a moderate tendency of grouping countries by political culture (Moran= 0.50; 1-Geary= 0.46). Countries of Nordic Europe are more prone to develop deliberative models and participatory democracy. In addition, countries from Eastern Europe are more likely to be characterized by flawed democracies with a mix between subject and participative political culture. Regarding O₂ we tested through H₁ that political culture has an indirect effect in generating a robust model of deliberative democracy. However, political culture is associated with an increased level of civil society index, which is seen as an interface between citizens and political actors and institutions. Thus, for the research objectives O₃ and O₄ we tested through H₂ and H₃ the complex relationship between political culture, civil society and self-expression values. Empirical findings show that an increased level of preserving civil liberties is more likely to be correlated with civic engagement and substantial democracy.

5. Conclusion

Substantial democracy is a complex mechanism for understanding the active role played by citizens in the field of political information, political decision-making and political assessment of governmental outcomes. An elevated level of civic deliberation in convergence with an increased level of political participation should be the optimal formula for substantial

democracy. This research paper, tested through structural and differential equations the complex interaction between political culture and substantial democracy. Empirical findings suggest that civil society plays an important role in both deliberative and participatory democracy. Limited governmental powers associated with a robust civil society based on participative culture and self-expression values conduct an increased level of substantial democracy in European countries included in the sample. The study could offer significant and empirical results for scholars, decision-makers and citizens' interested in optimizing the quality of the political life in their political community.

References

- Almond, G., Powell Jr G., Strøm, K., & Dalton, R. (2004). *Comparative Politics Today, A World View*. Pearson Longman.
- Almond, G., & Verba, S. (1963). *The Civic Culture*. Political Attitudes and Democracy in Five Nations. Princeton University Press.
- Bherer, L., Dufour, P., & Montambeault, F. (2016). The participatory democracy turn: an introduction. *Journal of Civil Society*, 12(3), 225-230. <https://doi.org/10.1080/17448689.2016.1216383>
- Branco, M.C. (2016). Economics for substantive democracy. *Review of Social Economy*, 74(4), 369-389.
- Cabannes, Y. (2004). Participatory budgeting: a significant contribution to participatory democracy. *Environment and Urbanization*, 16(1), 27-46. <https://doi.org/10.1177/095624780401600104>
- Cameron, A.C., & Trivedi, P.K. *Microeconometrics. Methods and Applications*. Cambridge University Press.
- Carnevale, A., & Occhipinti, C. (2020). Ethics and Decisions in Distributed Technologies: A Problem of Trust and Governance Advocating Substantive Democracy. In: Bucciarelli, E. & Chen, SH. & Corchado, J. (eds) *Decision Economics: Complexity of Decisions and Decisions for Complexity*. Advances in Intelligent Systems and Computing, vol 1009, Cham: Springer. https://doi.org/10.1007/978-3-030-38227-8_34
- Cheibub, J. A. (2007). *Presidentialism, Parliamentaryism and Democracy*. Cambridge University Press.
- Cohen, L. J., & Arato, A. (1994). *Civil Society and Political Theory*. The Massachusetts Institute of Technology Press.
- Colaresi M. (2003). *Democratization relationship*. Oxford University Press.
- Dacombe, R., & Parvin, P. (2021). Participatory Democracy in an Age of Inequality. *Representation*, 57(2), 145-157. <https://doi.org/10.1080/00344893.2021.1933151>
- Dahl, A.R., Shapiro, I., & Cheibub, A. J. (2003). *The Democracy Source Book*. The Massachusetts Institute of Technology Press.
- Della Porta, D. (2019). For participatory democracy: some notes. *European Political Science*, 18, 603–616. <https://doi.org/10.1057/s41304-018-0198-z>
- Esposito, G., Felicetti, A., & Terlizzi, A. (2023). Participatory governance in megaprojects: the Lyon–Turin high-speed railway among structure, agency, and democratic participation. *Policy and Society*, 42(2), 259–273. <https://doi.org/10.1093/polsoc/puac029>
- Fetrati, J. (2023). Non-violent resistance movements and substantive democracy. *Democratization*, 30(3), 378-397.
- Fiedlschuster, M. (2018). EU Concepts of Democracy and Civil Society. In: Fiedlschuster, M. (Ed.) *Globalization, EU Democracy Assistance and the World Social Forum* (pp. 81-111), Cham: Palgrave Macmillan, Palgrave Studies in European Political Sociology. https://doi.org/10.1007/978-3-319-70739-6_3
- Goodin, R. (1996). *The Theory of Institutional Design*. Cambridge University Press.

- Hilmer, J.D. (2010). The State of Participatory Democratic Theory. *New Political Science*, 32(1), 43-63. <http://dx.doi.org/10.1080/07393140903492118>
- Hofstede, G. (2001). *Culture's consequence. Comparing values, behaviors, Institutions and Organizations across Nations*. Sage Publications Ltd, Second Edition.
- Hooghe M., & Stolle, D. (2003). *Generating Social Capital, Civil Society and Institutions in Comparative Perspective*. Palgrave MacMillan.
- Huntington, S. P. (1991). *The Third Wave: Democratization in the Late Twentieth Century*. University of Oklahoma Press.
- Inglehart R., & Welzel C. (2005). *Modernization, Cultural Change and Democracy. The Human Development Sequence*. Cambridge University Press.
- Jacobs, L., & Shapiro, R. (1994). Studying Substantive Democracy. *PS: Political Science & Politics*, 27(1), 9-17.
- Kopstein, J., & Lichbach, M. (2005). *Comparative Politics, Interests, Identities and Institutions in a Changing Global Order*. Cambridge University Press.
- Kutay, A. (2015). Limits of Participatory Democracy in European Governance. *European Law Journal*, 21(6), 803–818.
- Lijphart, A. (2012). *Patterns of Democracy, Government Forms and Performance in Thirty-Six Countries*. Yale University Press.
- Lühiste, K. (2013). Social Protection and Satisfaction with Democracy: a Multi-level Analysis. *Political Studies*, 62(4), 784-803.
- Ma, H., Liang, Y., & Wan, J. (2023). Is the Right to Vote Equal to Democracy? — An Analysis of Substantive and Procedural Democracy in the United States. *SHS Web Conference*. 154. <https://doi.org/10.1051/shsconf/202315401020>
- Newton, K., & Van Deth, J. (2010). *Foundations of Comparative Politics, Democracies of the Modern World*. Cambridge University Press.
- Pickering, J. (2023). Can democracy accelerate sustainability transformations? Policy coherence for participatory coexistence. *International Environmental Agreements: Politics, Law and Economics*, 23, 141–148. <https://doi.org/10.1007/s10784-023-09609-7>
- Rhodes, R. A. W., Binder S. A., & Rockman B. A. (2006). *The Oxford Handbook of Political Institutions*. Oxford University Press.
- Roller, E. (2005). *The Performance of Democracies, Political Institutions and Public Policy*. Oxford University Press.
- Sartori, G. (1987). *The Theory of Democracy Revisited*. Chatham House Publishers INC.
- Smith, A., & Martín, P.P. (2022). Going Beyond the Smart City? Implementing Technopolitical Platforms for Urban Democracy in Madrid and Barcelona. In Mora, L. & Deakin, M. & Zhang, X. & Batty, M. & de Jong, M. & Santi, P. & Appio, F.P. (Eds) *Sustainable Smart City Transitions* (pp.280-299), Routledge.
- The Economist Intelligence Unit, *Democracy Index*, available online at <https://www.eiu.com> (accessed on 25 May 2023)
- Touchton, M., McNulty, S., & Wampler, B. (2023). Participatory Budgeting and Community Development: A Global Perspective. *American Behavioral Scientist*, 67(4), 520–536. <https://doi.org/10.1177/00027642221086957>
- Trebilcock, M., & Chitalkar, P. (2009). From Nominal to Substantive Democracy: The Role and Design of Election Management Bodies. *The Law and Development Review*, 2(1), 192-224. <https://doi.org/10.2202/1943-3867.1037>
- Varieties of Democracy Institute (V DEM), University of Gothenburg, *V-Democracy Index*, available online at <https://www.v-dem.net/> (accessed on 10 May 2023)

- Welzel, C., & Klingemann, H. D. (2008). Evidencing and Explaining Democratic Congruence: The Perspective of Substantive Democracy. *World Values Research*, 1(3). <http://dx.doi.org/10.2139/ssrn.2390577>
- World Bank, GDP growth, available online at <https://data.worldbank.org/indicator/NY.GDP.PCAP.KD.ZG?view=chart> (accessed on 25 May 2023)
- World Values Survey, *Inglehart- Welzel's Cultural Map*, available online at <https://www.worldvaluessurvey.org/wvs.jsp> (accessed on 10 May 2023)