

**Lisa Schmidhuber**

Vienna University of Economics and Business

**Alex Ingrams**

Leiden University

**Dennis Hilgers**

Johannes Kepler University Linz

# Government Openness and Public Trust: The Mediating Role of Democratic Capacity

Research Article

**Abstract:** *The open government paradigm implies that public processes are becoming more transparent, public information is available online, and citizens and nongovernmental organizations are encouraged to interact with public administration through new platform-based forms of participation and collaboration. Though these governmental efforts to open up organizational procedures to the public are meant to strengthen the relationship between citizens and the government, empirical evidence is currently sparse and mixed. This article argues that positive impacts of openness depend on citizen's democratic capacity defined as the individual sense of empowerment to influence governmental systems. By matching individual survey data from the European Social Survey with secondary institutional data, the authors investigate the relationship between individual- and structural-level variables. Findings indicate that structural openness is, in general, positively associated with higher trust. Further, the effect of openness on public trust is partially mediated by an individual's perception that they have meaningful opportunities for political participation.*

## Evidence for Practice

- Cross-national evidence shows that, in general, European countries investing in government openness benefit from a higher level of citizen trust in the public system.
- If governments focus on satisfying citizens' expectations regarding democratic decision-making possibilities, they are likely to reap more rewards in terms of greater citizen trust.
- Improving citizens' sense of empowerment to influence governmental systems helps translate openness reforms into greater levels of citizen trust.

Much debate surrounds the effects of unstable or declining levels of public trust in the public sector and its institutions (Keele 2007; Kettl 2019; Van de Walle, Van Roosbroek, and Bouckaert 2008). Low or declining levels of trust are seen as one of the main forces driving changes in government (McNabb 2009). Indeed, declining trust is explicitly used by policymakers as a justification for reforms that open up organizational processes to citizens, nongovernmental organizations, and other external actors (Chesbrough and Di Minin 2014; Grimmelikhuijsen and Feeney 2017; Kim and Lee 2012; Noveck 2009).

Some evidence does show that openness in terms of information and participation can strengthen citizen trust in the government system (e.g., Cook, Jacobs, and Kim 2010; Grimmelikhuijsen 2012; Kim and Lee 2012). However, scholars such as O'Neill (2002) and Hood (2007) argue that transparency can create suspicion and a blame culture in government that erodes trust. Other evidence backs up this

argumentation (e.g., Bailard 2014; Grimmelikhuijsen et al. 2013; Tolbert and Mossberger 2006), and there has generally been a shift in scholarship towards understanding the social and political contextual conditionalities of the openness–trust relationship (Cucciniello, Porumbescu, and Grimmelikhuijsen 2017).

The purpose of the present research is to contribute a better, contextual understanding of the impact of “open government” (Evans and Campos 2013; Lee and Kwak 2012; Meijer, Curtin, and Hillebrandt 2012) on citizen trust in government based on country differences in preexisting levels of openness, and the conditional effect of democratic capacity as individual sense of empowerment to influence governmental systems. We probe one particular contextual puzzle in the relationship between democracy and openness: while open government scholarship tends to treat these as two complementary values, that approach appears simplistic when we consider mixed findings that citizens often decline to participate when they are

**Lisa Schmidhuber** is a postdoctoral researcher at the Institute for Public Management and Governance, Vienna University of Economics and Business, Austria. Her research interests include public innovation management (open government, citizensourcing, and open data), digital transformation, and innovation in accounting practices.

**Email:** [lisa.schmidhuber@wu.ac.at](mailto:lisa.schmidhuber@wu.ac.at)

**Alex Ingrams** is an assistant professor at the Institute of Public Administration, Leiden University, the Netherlands. He researches and teaches in areas related to governmental transparency and public participation, governance reforms, and the influence of digital technologies on public sector information management.

**Email:** [a.r.ingrams@fgga.leidenuniv.nl](mailto:a.r.ingrams@fgga.leidenuniv.nl)

**Dennis Hilgers** is a professor of public and nonprofit management at the Institute for Public and Nonprofit Management at Johannes Kepler University Linz, Austria. His research focuses on managing innovation and performance in the public sector.

*Public Administration Review*, Vol. 00, Iss. 00, pp. 1–19. © 2020 The Authors. *Public Administration Review* published by Wiley Periodicals LLC on behalf of The American Society for Public Administration. DOI: 10.1111/puar.13298.

satisfied that government is sufficiently open (Hibbing and Theiss-Morse 2002), decide to participate only as a result of sensing low transparency, or quite the opposite, decide to actually disengage in despair as a result of sensing low transparency (Bailard 2014). We focus our analysis on advanced democratic countries, arguing that trust does indeed come from a high level of structural openness but that this is at least partially mediated by a citizen's perception that they can participate in the political system in a meaningful way.

A nuanced understanding of the conditional relationship between governmental openness and public trust has both theoretical value as well as implications for government openness policies. Thus, the study offers the following contributions to research on open government. First, this article addresses the question of why government openness is associated with more trust by laying out the characteristics of a *trust regime* associated with an open government. Second, it asks whether the connection between trust and preexisting structural level of country openness is conditional on the individual sense of empowerment to influence governmental systems. To answer this research question, the article examines cross-level interdependencies of specific individual- and country-level determinants of public trust. It provides evidence of the trust outcomes of government efforts to open up organizational processes to the public in terms of public participation as well as transparency, thus addressing the gap in the literature (e.g., Ebdon and Franklin 2006; Khagram, Fung, and de Renzio 2013). Furthermore, and according to Grimmelikhuijsen et al. (2013), studies on transparency have considered the influence of country and cultural differences only to a limited effect. We advance research on government openness and trust by testing the effect of government openness on trust in a European cross-national comparative setting.

The remainder of the article is structured as follows. First, we present the theoretical foundation, develop our hypotheses, and illustrate our research model. Second, we describe our sample and our measures and explain our analytical method. Third, we report our results. Finally, we provide a discussion of our findings and outline suggestions for future research and implications for theory and practice.

## Public Trust in Government

### *Specifying the Trust Construct within Citizen–State Relations*

Many authors from diverse disciplines (e.g., sociology, psychology, and political science) have tried to define and model trust (e.g., Lewis and Weigert 1985; Luhmann 2011; Mayer, Davis, and Schoorman 1995; McKnight and Chervany 2001; Rousseau et al. 1998). The OECD (2015, 156) defines trust in government as “the confidence of citizens and businesses in the actions of government to do what is right and perceived as fair.” Trust is also related to individual expectations and beliefs, as when Bélanger and Carter (2008, 167) describe it as “one’s perceptions regarding the integrity and ability of the agency providing the service.” Rousseau et al. (1998, 395) define trust as “a psychological state comprising the intention to accept vulnerability based upon positive expectations of the intentions or behavior of another.” Similarly, Van de Walle and Bouckaert (2003) see trust as a direct result of the gap between citizens’ expectations and their perception of the actual functioning of the government.

## Trust Regimes

Many typologies, models, and theories attempt to distinguish between types of trust (e.g., Lewicki and Bunker 1996; Muthusamy and White 2005; Rousseau et al. 1998; Sako 1992; Thomas 1998). Bouckaert (2012) distinguished between three different types of trust regimes, each of which can be matched with a different public approach or public management concept. The first such approach is the Weberian or Neo-Weberian hierarchical system of a traditional bureaucracy, characterized as an identity-based trust regime in which rights and duties are clearly defined and the public sector is shaped by professional bureaucrats whose role and responsibility as public servants is the basis of trust. The second, the new public management (NPM) approach, meanwhile, uses a calculus-based trust regime, which is grounded in rational choice, economically defined exchange, and accountability. Citizens provide data about their expectations, perceptions, satisfaction, and trust with regards to government services, and the public sector reveals benchmarks and makes quality models, financial data, and budget performance available.

In this trust regime, declining public trust is a result of the government’s performance failure, and the public sector must increase performance to restore trust in the government. Objective government performance is often difficult to establish among different stakeholders, and so a third kind of trust regime considers public trust as more of a subjective evaluation related to the individual interpretation of information on government performance (Welch, Hinnant, and Moon 2005). This is a *relational* trust regime, where trust is based on information and shared values and objectives, and which Bouckaert (2012) relates to the new public governance (NPG). Here, citizens express trust in their government by collaborating with it, and the public sector invites them to engage in codesign, co-decision-making, coproduction, and coevaluation. Electronic government is becoming an important “facet of governance,” and with the rise of information and communication technology (ICT), citizens’ expectations regarding services and information provision are increasing (Welch, Hinnant, and Moon 2005, 377).

The trust regime in open government is a fourth iteration. Open government is a governance approach focusing on the ability of citizens to online “monitor and influence government processes through access to government information and access to decision-making arenas” (Meijer, Curtin, and Hillebrandt 2012, 13). Although open government shares some characteristics with NPG, such as its focus on collaboration and citizen participation in governmental work (Bingham, Nabatchi, and O’Leary 2005; Osborne 2006), open government is also a distinct concept from NPG. It is strongly related to technological progress such as internet platforms or mobile and ubiquitous connectivity (Piotrowski et al. 2018). Opening up governments aims at integrating citizens into the political system as active participants and coproducers by intensive use of all kinds of opportunities of digitalization (Ingrams 2015; Lee and Kwak 2012; Mergel and Desouza 2013; Schmidhuber et al. 2017). Open government reformers intend to involve citizens as suppliers of policy solutions and respond to their right to information by disclosing and revealing governmental data online (Evans and Campos 2013; Meijer, Curtin, and Hillebrandt 2012). As the aim of this article is

to evaluate the effect of openness in government on citizen trust, we supplement Bouckaert's (2012) three public approaches and their trust regimes with our own open government model. Accordingly, the reciprocal trust regime is based on a mutual exchange of knowledge and an interactive and participate decision-making process where trust has to be reciprocal. Table 1 gives an overview of these four public management concepts, their characteristics, and their trust regimes.

### Public Trust and Government Openness

Whereas some earlier studies dealing with the contribution of NPM reforms on public trust found no association between management reform efforts and public confidence in government (Kettl 2000, 56; Pollitt and Bouckaert 2004), we argue that open government

is a type of *trust regime* that actually increases public trust. This line of argument is mainly based on the characteristics of an open government as follows.

**Transparency and Government Openness.** For one, an open government is characterized as an organization that provides information on its activities, such as budgetary and financial data. Grimmelikhuijsen and Welch (2012, 563) define transparency as “the disclosure of information by an organization that enables external actors to monitor and assess its internal workings and performance.” Whereas NPM reforms focus on improving transparency or effects of policy outcomes to increase citizen trust (see e.g., Welch, Hinnant, and Moon 2005), in terms of open data, trust is expected to be built by providing “ready availability of

**Table 1** From the Bureaucratic Model to Open Government: Public Approaches and Corresponding Trust Regimes

|   | <b>Bureaucratic Model</b><br>(Weber 1922)<br>(Mises 1944)<br>(Niskanen 1971)  | <b>New Public Management</b><br>(Aucoin 1990)<br>(Hood 1991)<br>(Osborne and Gaebler 1992)<br>(Dunleavy and Hood 1994)<br>(Pollitt and Bouckaert 2004)   | <b>New Public Governance</b><br>(Kooiman 1999)<br>(Bingham, Nabatchi, and O'Leary 2005)<br>(Osborne 2006, 2010)<br>(O'Leary and Bingham 2009)  | <b>Open Government</b><br>(Lee and Kwak 2012)<br>(Meijer, Curtin, and Hillebrandt 2012)<br>(Evans and Campos 2013)<br>(Ingrams 2015, 2020)  |
|---|---|--|--|---|
| Characteristics                         | Public administration as “legal regiment”<br>Coordination mechanism: <i>Hierarchy</i><br>Legitimation through: <i>Administrative acts and procedures</i>                      | Public administration as entrepreneurial and lean organization<br>Focus on efficiency and economy<br>Coordination mechanism: Market<br>Legitimation through: <i>Cost/benefit perspective</i>   | Inter-organizational governance<br>Coordination mechanism: <i>Network</i><br>Legitimation through: <i>Service outcome</i>  | Involvement of an unobvious environment by means of IT<br>Broadcast search for accessing external input<br>Coordination mechanism: <i>Call</i> (informal cooperation beyond hierarchy and contracts)<br>Legitimation through: <i>Transparency, participation, and collaboration</i> |
| Means of control                        | Rule of law<br>Professional qualification and career-rule<br>Separation of civil and administrative property  | Competition and decentralization<br>Privatization and contracting out<br>Global budgeting and modern reporting<br>Human Resource Management<br>Separation of operative administrative management and politics as a strategic planner | Emphasis on service processes and outcomes<br>Collaboration and networks<br>Neocorporatism<br>Public value management<br>Trust and confidence in political-administrative system   | Open call for participation on platforms<br>Self-identification and self-integration in network arrangements<br>Online community building<br>Tools of open innovation<br>Basis: Open data   |
| Appropriate for                         | <i>“Constitutional state”</i><br>Static environment<br>Short-term thinking and action (“period one model”)<br>Law-driven society<br>Separation of politics and administration | <i>“Economic state”</i><br>Dynamic, global environment<br>Citizen and service orientation<br>Bureaucracy pathology and value-for-money demands to increase accountability  | <i>“Complex Welfare State”</i><br>Public-private partnership,<br>Public-public partnership<br>Multiple inter-dependent actors contribute to the delivery of public services<br>Efficacy of public service delivery systems<br>Public value vs. private value | <i>“Digital Society”</i><br>Changing demands towards communication, participation, and involvement<br>Increase in acceptance and trust<br>Collaborative decision-making and agenda setting  |
| Citizen's role                          | Passive   | Citizen as a client  | Citizen-consumers<br>Coproducer, partner, and evaluator of public services   | Citizen as active part of the system and coproducer<br>Supplier of solutions and in need of information   |
| Trust regime                            | Identity-based trust  | Calculus-based trust   | Relational trust   | Reciprocal trust  |
| Citizen trust in public sector          | Define clear rights and duties<br>Dos and don'ts<br>Connecting to citizens  | Provide data on expectations, perceptions, satisfaction, and trust   | Willingness for partnerships<br>Communicate shared objectives  | Interaction with government and its institutions<br>Participation in citizen-sourcing<br>Acceptance of new platform-based collaboration activities  |
| Trust of the public sector in community | Professional bureaucrats<br>Clear legal handling of procedures<br>Transparent due process   | Benchmarks<br>Quality models<br>Performance reports  | Co-designing, codeciding, co-producing, coevaluating<br>Allowing volunteers  | Offering participation and collaboration possibilities<br>Taking citizen knowledge seriously<br>Disclosure of public data   |
| Citizen trust increases through         | Level of professionalization of government  | Level of performance   | Level of service outcomes  | Level of data disclosure and participation  |

Notes: Trust regimes (identity-based, calculus-based, and relational trust) according to Bouckaert (2012).

information about what governments are doing and why” (Janssen, Charalabidis, and Zuiderwijk 2012, 260).

While NPM reforms are based on the assumption that citizens trust governments more when they disclose good results, the makers of open government policies expect trust to increase along with the level of information (see, e.g., Open Budget Index from the International Budget Partnership) and type of data (e.g., Janssen, Charalabidis, and Zuiderwijk 2012) made available to individual users of open data technologies including reuse and distribution of machine-readable data. Instead of “output legitimacy” (Scharpf 1999, 9ff), open government thus refers to “process legitimacy.” In line with an enlightenment or modernization disclosure (Meijer 2009), individuals with better information are assumed to trust the government more. More generally, a culture perceived as open is expected to positively relate to trust (Hood 2006, 217). Disclosing information is thus seen as essential to increasing citizen trust (Grimmelikhuisen and Meijer 2014). This is in line with the ideas of knowledge-based trust regimes, in which actors only trust each other when they possess sufficient information about each other’s behaviors, intentions, and activities (Lewicki and Bunker 1996, 121f). As Van de Walle (2010) has argued, trust is consequently not possible when the availability of information is restricted.

According to the knowledge-based view (see e.g., Lewicki and Bunker 1996), public trust is strengthened by the provision of more information. Thomas (1998), among others, based the concept of “fiduciary trust” on principal agent theory. According to this theory, the distribution of information allows citizens to better understand the government and its activities and procedures. Balancing the information asymmetry between citizens and the government is thus intended to improve fiduciary trust. In line with this thinking, various methods aim at lowering the information asymmetry between the state and its citizens by providing information on the government and its decision-making processes. This study proposes that these methods help citizens to assess and gain information on government agencies. By leveraging modern information and communication technology, citizens additionally are provided with the possibility to participate in decision-making and exchange with citizens and government employees online. In this study, we assume that the more open governments are, the more citizens trust the public sector. Consequently, we hypothesize that *the structural level of government openness in a country is positively related to individual level of trust in that country’s government (Hypothesis 1).*

### **Participation and Citizen Influence**

Second, similarly to the NPM mission (Ferlie, Fitzgerald, and Pettigrew 1996, 15), an open government aims at reducing the distance between public institutions and citizens by increasing democratic possibilities. It uses new platform-based forms of citizen participation and collaboration to enhance citizen representation and responsiveness, search for solutions to social problems, and get feedback from citizens on government services (Linders 2012; Liu 2017; Schmidhuber and Hilgers 2018). Citizens are encouraged to collaborate with the government and assist the administration in creating new public services.

This form of participation in open government could be important for trust for both utilitarian and symbolic reasons. In a utilitarian

sense, according to Thomas (1998), frequent interaction between individuals can build mutual trust as it creates a greater sense of familiarity and a mutual sense of involvement in the same goals and values. Another utilitarian goal of participation is that citizens can become more confident about the trustworthiness of public services when they have an opportunity to point defects, e.g., of infrastructure, and this information is subsequently used by administration to fix problems (Janssen, Charalabidis, and Zuiderwijk 2012). This positive relationship of participation with trust comes from a perception on the part of citizens that cocreated services avoid potential areas of conflict (Roberts 2004) and generally establish more public value than services created without citizens (Janssen, Charalabidis, and Zuiderwijk 2012). In a symbolic sense, participation can increase trust because opportunities for citizens to directly get involved (even if citizens do not actively use those opportunities) signal to citizens that government is willing to be an honest partner who listens and gives citizens shared ownership in matters that affect their lives (Kweit and Kweit 2004; Tyler 1990).

While much of the foregoing research presents a persuasive case that more opportunities for participation are better for the democratic health of a government, other research also cautions that the availability of such opportunities is not sufficient to achieve better outcomes. Ingrams and Schachter (2019) and Lodge and Wegrich (2015) have demonstrated that new participation opportunities associated with open government initiatives such as social media dialogue or crowdsourcing policy recommendations can be superficial, offering no real way for citizens to influence policymakers. Trust can only be enhanced when actual capabilities are acknowledged (Welch, Hinnant, and Moon 2005). Moreover, whereas efforts to integrate citizens into government processes can increase trust, these endeavors may also result in distrust when expectations are not fulfilled (Wang and Van Wart 2007). In addition to assessing the effect of a government’s structural level of openness, this study thus evaluates the role of citizens’ perception of how much influence they really perceive themselves to have. We thus hypothesize that *individual perception of “having a say” in government and an influence on its activities positively relates to their trust in the public sector and its institutions (Hypothesis 2).*

### **Perception of Democratic Capacity and Country-Level Openness**

Despite the fact that open government is frequently equated with democratic governance systems, few, if any studies, have looked at how structural openness and individual components of democratic capacity influence one another. There is some evidence that they are interdependent in important ways. For example, Welch (2012) found that participation by citizens is a channel for increased transparency because interactions between actors are necessary for revealing and sharing new information. Information access through a structure that makes data available may be useful, but public participation in government must be enabled by both sides (the individual and government) for the data to be used for good effect. Not only is structural openness without participation inadequate, but transparency of information may actually ferment frustration and distrust if there is no invitation to respond and interact as a result of that new information. In other words, transparency without participation may even lead to distrust.



We also would argue that, by the same token, opportunities for citizens to democratically participate when information is open, act in a mediating way to influence trust. This claim has some backing from prior research. De Fine Licht et al. (2014) found in a school open administrative decision-making process that “fishbowl transparency” (where one-way information exchange is the exclusive mode of transparency) is virtually useless in enhancing the perception of legitimacy in comparison with “deliberative transparency,” where the school would actually respond and act in a participatory fashion. This is the type of transparency that Stirton and Lodge (2001) have called “voice transparency,” which is much more effective in enhancing government responsiveness as compared with more information or representation. These concepts have an important corollary in public participation literature in the “ladder of participation” of Arnstein (1969) and the “democracy cube” of Fung (2006). These authors argue that providing a one-way structure of information access is one thing, but the ability to participate meaningfully is another. Both are expected to have a positive association with public trust towards government. However, as a mechanism, evidence and logic appear to point strongly to the fact that participation offers a way for transparent institutional structures to turn openness into a positive outcome for individuals’ trust. We thus hypothesize that *individual perception of democratic capacity mediates the effect of structural government openness on trust in the public sector and its institutions (Hypothesis 3)*.

Based upon the above discussion of the relationship between citizens and the public sector, we posit the following model (figure 1). By making its actions transparent and giving citizens the possibility to voice, the government throws open its doors to citizens and thereby increases their trust and its own legitimacy.

## Data and Methods

### Data

We combined data from different sources to test our hypotheses. First, we relied on the European Social Survey (ESS) for individual-level data. The ESS is a representative, biannual, and comparative cross-sectional survey begun in 2002 and conducted in more than 30 European countries. To date, eight rounds of ESS have been collected. We chose the large-scale survey research program as it offers insights into a wide range of indicators for political participation, trust in the public sector and its institutions, and citizens’ attitudes towards the public sector; data are comparable across different countries, the survey is known for the high standards of its survey design and data collection (Lynn 2003; European Social Survey (ESS) 2018), and various prior studies on public administration research have worked with this dataset (e.g., Overman 2017; Van de Walle and Lahat 2017). To answer our research questions, we

used the seventh ESS dataset which includes information from 21 countries (Austria, Belgium, Czech Republic, Denmark, Estonia, Finland, France, Germany, Great Britain, Hungary, Ireland, Israel, Lithuania, the Netherlands, Norway, Poland, Portugal, Slovenia, Spain, Sweden, and Switzerland) and was published in December 2018 (European Social Survey Round 7 Data (ESS-7) 2014 Edition 2.2). Due to the unequal inclusion probabilities of sample respondents in some countries, we have weighted the data. As we combined countries and compared effects across groups of countries, we applied the design weight and the population size weight when conducting the analysis (European Social Survey (ESS) 2014).

Second, we drew our country-level data from the World Justice Project (WJP). The WJP is an independent, multidisciplinary organization that advocates for the rule of law. In addition to strengthening public awareness of the significance of the rule of law, advancing policy reforms, and conceptualizing practical programs for local governments, the initiative provides data on the perception of the rule of law across 102 countries (World Justice Project 2016). Data about government openness are available for 17 of the 21 countries covered by the ESS. Ireland, Israel, Lithuania, and Switzerland are not covered by the World Justice Project and are thus excluded from the analysis (8734 observations). Table 2 gives an overview of the sample distribution across the countries analyzed.

### Measures

**Citizen Trust in the Public System.** We measured public trust in the public sector and its institutions according to various variables of trust drawn from the ESS. Following Van de Walle, Van Roosbroek, and Bouckaert (2008), trust in public administration and political institutions are strongly correlated. In general, levels of trust in one institution affect individual perception of other institutions (Christensen and Laegreid 2005, 487). Consequently, we used variables of public trust in (1) the country’s parliament; (2) the legal system; (3) the police; (4) politicians; and (5) political parties. Each variable measures the level of trust on an 11-point Likert scale, in which “0” refers to “no trust at all” and “10” to “complete trust.” By aggregating these five variables, we computed a scale measuring *citizen trust in the public system*. Next to this overall measure for citizen trust, we run separate running regression analyses using the five trust variables on different public institutions (i.e. *public trust in the country’s parliament, public trust in the legal system, public trust in the police, public trust in politicians, and public trust in political parties*).

**Government Openness.** To measure a country’s structural openness, we used the WJP’s Open Government Index (OGI). The OGI is publicly available and based on answers drawn from a general

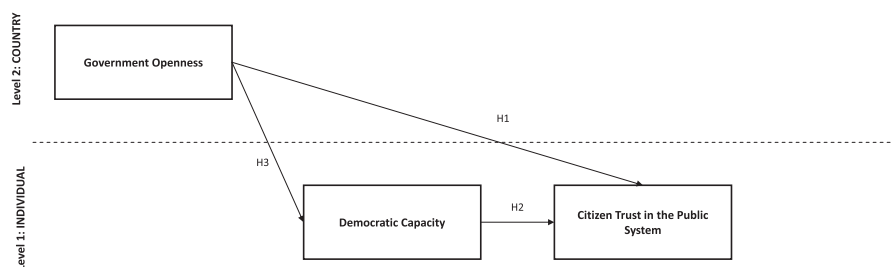


Figure 1 Conceptual Model

**Table 2** Sample Distribution across Countries

| Country         | Number of Respondents | % of Sample |
|-----------------|-----------------------|-------------|
| Austria         | 1,475                 | 5.62        |
| Belgium         | 1,651                 | 6.29        |
| Czech Republic  | 1,727                 | 6.58        |
| Germany         | 2,784                 | 10.61       |
| Denmark         | 1,311                 | 4.99        |
| Estonia         | 1,566                 | 5.97        |
| Spain           | 1,458                 | 5.55        |
| Finland         | 1,910                 | 7.28        |
| France          | 1,721                 | 6.56        |
| Great Britain   | 1,814                 | 6.91        |
| Hungary         | 1,308                 | 4.98        |
| The Netherlands | 1,707                 | 6.50        |
| Norway          | 1,321                 | 5.03        |
| Poland          | 1,122                 | 4.27        |
| Portugal        | 998                   | 3.80        |
| Sweden          | 1,534                 | 5.84        |
| Slovenia        | 841                   | 3.20        |
| All countries   | 26,248                | 100         |

Notes: The number of respondents and the countries' percentage of the sample differ among countries due to the ESS sampling strategy (European Social Survey (ESS) 2020).

population poll, using a sample of 1,000 respondents from the three largest cities of each country, as well as on a survey of in-country practitioners and academics with expertise in civil and commercial law, criminal justice, labor law, and public health. The index measures four dimensions: publicized laws and government data, the right to information, civic participation, and complaint mechanisms. For this study, we use the 2015 OGI, which covers 102 countries. OGI scores range from 0 to 1. In this paper, we define countries with a score of 1 as "open countries," whereas a score of 0 refers to "closed countries" (The World Justice Project 2016).

**Democratic Capacity.** In contrast to the measurement of structural openness, democratic capacity concerns individual citizen perception that they themselves can influence the governance system through democratic political channels. We, therefore, calculated a scale measuring individual perception of participation by using five items from the ESS. Respondents were asked to indicate on a 11-point Likert scale the extent to which they agreed with the following statements: the political system allows people to have a say in what the government does; the respondent is able to take on an active role in a political group; the political system allows people like the respondent to have an influence on politics; politicians care what people think; and it is easy to take part in politics.

### Control Variables

To ascertain whether government openness and democratic capacity increase trust in government, it is necessary to control for factors that are related to or can be hypothesized to influence trust. On the individual level, we controlled for characteristics that were previously found to be related to trust in the public sector and its institutions (Christensen and Laegreid 2005; Goldfinch, Gauld, and Herbison 2009; Hooghe and Marien 2013). We thus controlled

for *gender* (female = 0, male = 1), *age* (30 years and younger, 31–60 years, above 60 years), and *education* (ISCED1–3b = 0; ISCED3a–5 = 1). We also controlled for the respondent's *political interest*, as people with an interest in politics generally trust the government more (Christensen and Laegreid 2005), and for *political attitude*, by using individual's placement on a left-to-right scale.

Furthermore, we measured *political activity* by using individual's answers to the ESS's questions of whether they had contacted a politician or government official, worked in a political party or action group, worn or displayed a campaign badge/sticker, signed a petition, taken part in lawful public demonstration, and boycotted certain products in the last 12 months.<sup>1</sup> Based on literature on political participation (e.g., Hooghe and Marien 2013; Kern, Marien, and Hooghe 2015), we distinguished between institutionalized and noninstitutionalized political activity. We performed a principal component analysis with varimax rotation to extract the factors of individual political activity. This factor analysis resulted in two types of political activity. Signing a petition, boycotting certain products, taking part in lawful public demonstration, and wearing or displaying campaign badge/sticker load on Factor 1. We aggregated the variables to a scale and labeled it "non-institutionalized political activity." Working in a political party or action group or contacting a politician or government official load on Factor 2 and describe "institutionalized political activities."

As a further control variable, we added *individual general trust in people* and their attitudes toward human behavior, as individuals who generally have faith in humanity and believe in others are more likely to have trust in government (Bélanger and Carter 2008). We included the following three variables from the European Social Survey (11-point Likert scales), which are strongly correlated and correspond to one factor (with 64.6 percent explained variance and an Eigenvalue of 1.94): (1) "most people can be trusted" vs. "can't be too careful," (2) "most people try to be fair" vs. "most people take advantage of you," and (3) "most of the time people are helpful" vs. "mostly looking out for themselves," whereby higher scores refer to more positive attitudes toward people and general trust in individuals.

### Data Analysis

The data structure is clearly hierarchical, as individuals are nested within countries, and we, therefore, applied multilevel modeling (Di Prete and Forristal 1994; Goldstein 2003). Our multilevel regression modeling consists of country-level variables (level 2) and individual-level variables (level 1). After presenting descriptive statistics and correlations for the variables included in the regression analysis, we investigate the mediating role of democratic capacity in the relationship between government openness and citizen trust in the public system. To test the effect for the mediation hypothesis, a hierarchical linear modeling (HLM)-based multilevel mediation model is conducted. HLM allows to model both individual- and country-level variance in individual outcomes. The multilevel mediation model is a 2-1-1 model in which the influence of a level-2 variable (i.e. government openness) on a level-1 variable (i.e. citizen trust in the public system) is conveyed by a level-1 variable (i.e. democratic capacity) (Zhang, Zyphur, and Preacher 2009).

A standard mediated regression technique is used following the procedure suggested by Baron and Kenny (1986). Testing for mediation requires three regression equations. The first equation establishes the effect between the independent variable (i.e. government openness) and the outcome variable (i.e. citizen trust in the public system). In the second equation, the significant effect of the independent variable on the mediator variable (i.e. democratic capacity) has to be tested. In the third equation, the direct effect of the independent variable on the outcome variable is established controlling for the mediator variable so that the independent and the mediator variables are predictors. If the inclusion of the mediator variable nullifies the direct relationship, then it is complete mediation. When the effect of the independent variable is reduced when controlling for the mediator variable, then it is partial mediation. A Sobel test is used to investigate the formal significance of the mediation effects (Pardo and Román 2013).

## Results

### Descriptive Statistics

First, descriptive statistics of the sample and the correlation matrix among the analyzed variables are presented in Table 3. The results of the correlation analysis provide first evidence of a significant and positive relationship between citizen trust in the public system

and government openness and democratic capacity. Mean values of study's variables broken down by countries can be found in Appendix 1. Descriptive findings indicate that democratic capacity is the highest in Denmark and Norway. Besides, relative to the different types of trust, individuals seem to trust the police the most.

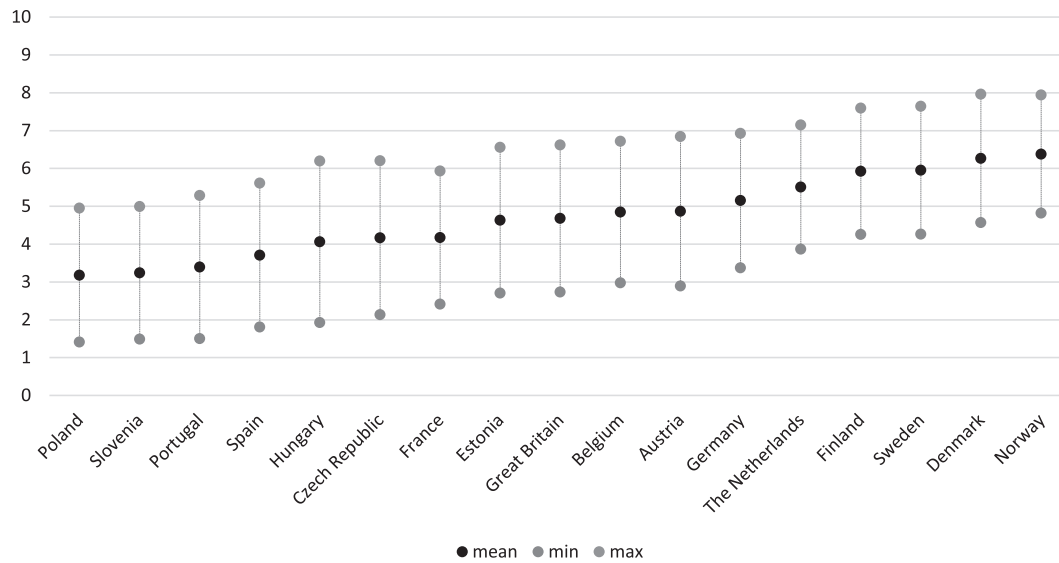
Furthermore, more focus is placed on the dependent variable of the study, citizen trust in the public system, and its variation across countries. Figure 2 illustrates the differences in the level of trust in the 17 countries studied. Poland, Slovenia, and Portugal are among those countries with low average levels of citizen trust in the public system. In contrast, individuals show high average levels of trust in the public sector in Norway, Denmark, Sweden, and Finland. The public system in the Scandinavian countries thus seems to be most trustful, as found by other studies (e.g., Huxley et al. 2016; Marozzi 2015). In line with our assumption that the public system of open countries is more trusted, Norway is known for comparable high levels of democracy and citizen participation, dominant reform trends in terms of digitalization and collaboration, and for its leading role in stimulating open government (founding member of the Open Government Partnership) (Lægread and Rykkja 2016; Lowry 2016; Wilson 2019). Similarly, Denmark is keen on implementing open government data policies and ranked high in open data indices (Gomes and Soares 2014; Jetzek 2016).

**Table 3** Sample Characteristics and Correlation Matrix

| Variables                             | 1     | 2    | 3     | 4     | 5    | 6     | 7     | 8    | 9     | 10    | 11    | 12    | 13   | 14    | 15   | 16   |
|---------------------------------------|-------|------|-------|-------|------|-------|-------|------|-------|-------|-------|-------|------|-------|------|------|
| Mean                                  | 4.55  | 4.43 | 5.26  | 6.31  | 3.35 | 3.39  | 3.59  | .70  | .11   | .20   | 2.59  | 4.94  | .50  | 2.08  | .52  | 5.30 |
| Std. Dev.                             | 1.99  | 2.54 | 2.59  | 2.33  | 2.33 | 2.28  | 1.89  | .05  | .24   | .25   | .89   | 2.15  | .50  | .68   | .50  | 1.73 |
| Min                                   | 0     | 0    | 0     | 0     | 0    | 0     | 0     | .51  | 0     | 0     | 1     | 0     | 0    | 1     | 0    | 0    |
| Max                                   | 10    | 10   | 10    | 10    | 10   | 10    | 10    | .81  | 1     | 1     | 4     | 10    | 1    | 3     | 1    | 10   |
| 1. Citizen trust in the public system | (.89) |      |       |       |      |       |       |      |       |       |       |       |      |       |      |      |
| 2. Trust in country's parliament      | .85*  | 1    |       |       |      |       |       |      |       |       |       |       |      |       |      |      |
| 3. Trust in the legal system          | .83*  | .62* | 1     |       |      |       |       |      |       |       |       |       |      |       |      |      |
| 4. Trust in the police                | .72*  | .47* | .61*  | 1     |      |       |       |      |       |       |       |       |      |       |      |      |
| 5. Trust in politicians               | .88*  | .72* | .59*  | .46*  | 1    |       |       |      |       |       |       |       |      |       |      |      |
| 6. Trust in political parties         | .84*  | .68* | .55*  | .41*  | .85* | 1     |       |      |       |       |       |       |      |       |      |      |
| 7. Democratic capacity                | .61*  | .57* | .45*  | .32*  | .58* | .57*  | (.83) |      |       |       |       |       |      |       |      |      |
| 8. Government openness                | .30*  | .24* | .28*  | .16*  | .28* | .29*  | .27*  | 1    |       |       |       |       |      |       |      |      |
| 9. Inst. political activity           | .05*  | .06* | .03*  | .01   | .06* | .06*  | .21*  | .03* | 1     |       |       |       |      |       |      |      |
| 10. Noninst. political activity       | .04*  | .06* | .06*  | -.003 | .01  | .02*  | .20*  | .10* | .32*  | 1     |       |       |      |       |      |      |
| 11. Political interest                | .24*  | .23* | .18*  | .13*  | .22* | .22*  | .39*  | .19* | .25*  | .27*  | 1     |       |      |       |      |      |
| 12. Political orientation             | .07*  | .06* | .03*  | .08*  | .07* | .06*  | .03*  | .02* | -.02* | -.16* | -.003 | 1     |      |       |      |      |
| 13. Gender                            | .03*  | .05* | .04*  | .003  | .002 | .007  | .09*  | -.00 | .07*  | -.01  | .16*  | .04*  | 1    |       |      |      |
| 14. Age                               | -.03* | -.01 | -.07* | .01   | .01  | -.03* | -.08* | .02* | .06*  | -.05* | .15*  | .05*  | .01  | 1     |      |      |
| 15. Education                         | .13*  | .14* | .15*  | .06*  | .09* | .08*  | .23*  | .07* | .12*  | .21*  | .19*  | -.02* | -.01 | -.13* | 1    |      |
| 16. General trust                     | .44*  | .37* | .37*  | .31*  | .39* | .37*  | .38*  | .28* | .05*  | .14*  | .20*  | -.01  | -.01 | .03*  | .15* | 1    |

Notes:  $N = 26,248$ ; weighted. Cronbach's alpha in parentheses.

\*  $p < .05$ .



Notes:  $N = 17$  countries and 26,248 individuals. Data are weighted

Figure 2 Citizen Trust in the Public System Split by Country.

### Regression Findings

Second, several analyses are conducted to test hypotheses 1–3 (Tables 4 and 5). Hypothesis 1 is a cross-level hypothesis, which states that government openness, a level-2 variable, will be positively related to citizen trust in the public system, a level-1 variable. Since a group-level variable can explain only differences between groups, first, it has to be shown that significant between-groups differences exist for the dependent variable of interest (Hofmann 1997). The null hierarchical model with citizen trust in the public system as a dependent variable provided evidence of significant between-group variance in citizen trust ( $Y_{00} = 4.72$ ,  $SE = .252$ ,  $p < .000$ ) and justified further cross-level analyses. Calculation of the intraclass correlation coefficient (ICC) showed that 23.27 percent of the variance in citizen trust exist between countries in this sample and 76.73 percent within countries or between citizens. Finally, a random intercept model is used to test hypothesis 1 controlling for factors on the individual level. The results indicate a significant, positive relationship between government openness and citizen trust. The ICC reports 6.8 percent of the variance explained.

Hypothesis 2 predicts the positive relationship between democratic capacity (a level-1 variable) and citizen trust in the public sector (a level-1 variable). Findings indicate a positive and significant association, meaning that individuals with a positive democratic capacity have more trust in the public system. The ICC is .081, meaning that 8.1 percent of variance in citizen trust is explained by both the country of the individual and individual-level fixed factors.

The cross-level mediation hypothesis 3 states that democratic capacity (a level-1 variable) will mediate the effects of government openness (a level-2 variable) on citizen trust in the public system (a level-1 variable). Before testing the hypothesis, several preconditions to support a mediation hypothesis have to be tested (Baron and Kenny 1986; Seibert, Silver, and Randolph 2004). Significant relationships have to be established between the independent

Table 4 Regression Results I

|  | (1)                                | (2)                                |
|--|------------------------------------|------------------------------------|
|  | Citizen Trust in the Public System | Citizen Trust in the Public System |
| Government openness                      | 6.630*** (2.341)                   |                                    |
| Democratic capacity                      |                                    | .528*** (.0147)                    |
| Control variables                        |                                    |                                    |
| Institutionalized political activity     | .107 (.120)                        | -.366*** (.0846)                   |
| Non-institutionalized political activity | -.609*** (.0734)                   | -.726*** (.0512)                   |
| Political interest                       | .321*** (.0209)                    | .0109 (.0229)                      |
| Political attitude (from left to right)  | .0705** (.0352)                    | .0528** (.0214)                    |
| Gender (ref. female)                     | -.00829 (.0576)                    | -.0863** (.0359)                   |
| Age (ref. young)                         |                                    |                                    |
| Intermediate                             | -.300*** (.0462)                   | -.124*** (.0307)                   |
| High                                     | -.427*** (.0928)                   | -.0669 (.0497)                     |
| Education (ref. low)                     | .180** (.0747)                     | -.0195 (.0507)                     |
| General trust in people                  | .388*** (.0221)                    | .234*** (.0129)                    |
| Constant                                 | -2.910* (1.646)                    | 1.586*** (.169)                    |
| Random-effects parameters                |                                    |                                    |
| Var (democratic capacity)                |                                    | .002 (.001)                        |
| Var (constant)                           | .203 (.075)                        | .182 (.048)                        |
| Var (residual)                           | 2.766 (.116)                       | 2.063 (.103)                       |
| ICC                                      | .068 (.023)                        | .081 (.020)                        |
| Wald chi <sup>2</sup>                    | 4,133.81***                        | 25,852.03***                       |
| Observations                             | 26,248                             | 26,248                             |
| Number of groups                         | 17                                 | 17                                 |

Notes: Robust standard errors in parentheses; weighted.

\*\*\*  $p < .01$ .

\*\*  $p < .05$ .

\*  $p < .1$ .



**Table 5** Regression Results II

|  | (3)                 | (4)                                |
|--|---------------------|------------------------------------|
|  | Democratic Capacity | Citizen Trust in the Public System |
| Government openness                      | 5.337*** (.1327)    | 3.672** (1.716)                    |
| Democratic capacity                      |                     | .527*** (.0147)                    |
| Control variables                        |                     |                                    |
| Institutionalized political activity     | .887*** (.137)      | -.365*** (.0847)                   |
| Non-institutionalized political activity | .222* (.121)        | -.727*** (.0514)                   |
| Political interest                       | .570*** (.0284)     | .0106 (.0229)                      |
| Political attitude (from left to right)  | .0340 (.0253)       | .0527** (.0213)                    |
| Gender (ref. female)                     | .153*** (.0582)     | -.0863** (.0359)                   |
| Age (ref. young)                         |                     |                                    |
| Intermediate                             | -.325*** (.0669)    | -.123*** (.0306)                   |
| High                                     | -.679*** (.107)     | -.0667 (.0496)                     |
| Education (ref. low)                     | .369*** (.0934)     | -.0189 (.0507)                     |
| General trust in people                  | .288*** (.0195)     | .233*** (.0129)                    |
| Constant                                 | -3.308*** (0.923)   | -.9767 (1.242)                     |
| Random-effects parameters                |                     |                                    |
| Var (democratic capacity)                |                     | .002 (.001)                        |
| Var (constant)                           | .117 (.044)         | .114 (.035)                        |
| Var (residual)                           | 2.429 (.0617)       | 2.062 (.103)                       |
| ICC                                      | .046 (.016)         | .052 (.015)                        |
| Wald chi <sup>2</sup>                    | 24,531.31***        | 58,041.93***                       |
| Observations                             | 26,248              | 26,248                             |
| Number of groups                         | 17                  | 17                                 |

Notes: Robust standard errors in parentheses; weighted.

\*\*\*  $p < .01$ .

\*\*  $p < .05$ .

\*  $p < .1$ .

variable and the dependent variable, between the independent variable and the mediating variable, and between the mediating variable and the dependent variable. Subsequently, a mediation hypothesis could be confirmed if the relationship between government openness and citizen trust is reduced when democratic capacity is included in the model.

The first precondition for mediation, the relationship between government openness and citizen trust is itself a cross-level relationship. As we have already confirmed that there is a significant systematic between-groups variance for citizen trust, a cross-level analysis is possible. The results of the random intercept model indicate support for a direct relationship between government openness and citizen trust, as already outlined in testing hypothesis 1. Considering the ICC, 6.8 percent of variance in citizen trust can be accounted for by both the country of the individual and individual-level fixed control variables.

The second precondition for mediation was a positive relationship between government openness, a level-2 variable, and democratic capacity, a level-1 variable. Once more, we test a cross-level relationship, so that we have to test first whether significant

between-groups differences exist for the dependent variable of interest. The null hierarchical model with democratic capacity as a dependent variable provides evidence of significant between-group variance in democratic capacity ( $Y_{00} = 3.63$ ,  $SE = .22$ ,  $p < .000$ ) and justified further cross-level analyses. Calculation of the ICC showed that 19.06 percent of the variance in democratic capacity exists between countries in this sample. Furthermore, the random intercept model shows that there is a significant positive association between government openness and democratic capacity, so that the second precondition can be confirmed (Table 5).

According to the third precondition, there has to be a significant relationship between democratic capacity and citizen trust. Note that this relationship is our hypothesis 2 and that evidence of a significant, positive relationship between the two variables is provided (Table 4). Consequently, all three preconditions for mediations are met for citizen trust (Baron and Kenny 1986).

To test for the mediation effect specified in hypothesis 3, we use a random-intercept hierarchical model with participation of citizen influence as a level-1 predictor and government openness as a level-2 predictor, and citizen trust as a level 1 dependent variable. Results indicate that, after democratic capacity was entered as a level-1 explanatory variable, the link between government openness and citizen trust shows a reduced effect of 43.29 percent, from  $b = 6.63$  to  $b = 3.67$  (Sobel test  $z = 3.997$ ,  $SE: .704$ ,  $p < .000$ ). Thus, democratic capacity partially mediates the significant effect of government openness on citizen trust. The ICC reports .052, meaning that 5.2 percent of the variance in citizen trust exists between countries in this sample. In addition, we tested to what extent the mediator, democratic capacity, varies across countries. Tables 4 and 5 also report the random effects of democratic capacity.

Next to testing the research model by using citizen trust in the public system as the dependent variable, we conducted more detailed analyses by differentiating between the different types of trust (Appendix 2). In general, the findings of these additional analyses are in line with the former results. The relationship between government openness and different types of trust (i.e. public trust in the parliament; public trust in the legal system; public trust in politicians; and public trust in the parliament) are partially mediated by democratic capacity. The formal significance of the mediation effects is investigated by applying the Sobel test. In addition, we found a full mediation of democratic capacity in terms of public trust in the police. As shown in the descriptive findings, public trust in the police is the highest in all countries analyzed.

In addition, the sample countries are divided into two groups—individuals with an average level of citizen trust in the public system below 5 and individuals with a level above—to test whether the assumptions also hold among low- versus high-level of trust individuals. Appendix 3 reports the findings of the mediated regression analysis of both groups. Among individuals with a relatively low level of citizen trust in the public system, government openness has a positive and significant effect on citizen trust. Also, democratic capacity is positively related to citizen trust. Furthermore, government openness is positively associated with democratic capacity. Finally, a partial mediation is found in model

4, as the effect of government openness on citizen trust is reduced (from  $b = 3.106$  to  $b = 2.359$ ) and remains significant when controlling for democratic capacity. The Sobel test confirms a mediation ( $z = 4.09$ ,  $SE = .1829$ ,  $p < .000$ ).

In contrast, government openness is not found to significantly relate to citizen trust among individuals with high levels of trust. The link between government openness and democratic capacity is highly significant and with comparably high effect size. Also, democratic capacity is positively associated with citizen trust in model 8, although the effect size of democratic capacity is much smaller compared with the first subsample. However, government openness shows no significant effect.

## Discussion and Conclusion

### *Discussion and Implications*

Although prior research has emphasized the importance of government openness (Evans and Campos 2013; Lee and Kwak 2012; Liu 2017; Meijer, Curtin, and Hillebrandt 2012), empirical evidence on the conditional impact of openness in terms of information and voice on citizen trust in the public sector and its institutions is scarce. Based on cross-country data, this study examines the effect of a country's structural openness characteristics and individual evaluation of citizen influence in the political system on the level of citizen trust in government.

First, results indicate that respondents who are satisfied with political participation possibilities have more trust in government. This study thus provides empirical evidence that the feeling of "having a say" in government increases citizen trust in the public sector. Many prior studies also found that some types of participation such as individual use of e-government (contacting agency through website or via e-mail and visiting government websites) have a negative effect on trust (Im et al. 2014; Morgeson, Van Amburg, and Mithas 2011). However, e-government represents a distinct kind of public service interaction where different kinds of mechanisms may pertain. Whereas e-government enables people to interact with public organizations and is characterized by the availability of governmental information and services 24 hours per day, seven days per week, opening up government in terms of voice goes beyond the dyadic relationship between citizens and public administration. Within the open government concept, external actors are intended to be integrated into the coproduction of public values, thereby becoming active parts of the system. A higher perceived level of citizen influence is then shown to result in an increase in trust toward public institutions.

Second, our results show that people have more trust in the public sector in countries with a good structure of government openness. Although scholars have previously discussed (O'Neill 2002) and empirically studied the negative effects of openness (De Fine Licht 2011; Grimmelikhuijsen and Meijer 2014), the present study points to a positive association between people living in open countries and their level of trust in the national government. On the one hand, when the government discloses public data and makes them available to the public, the public sector opens its doors to the public and makes confidence building possible. Consequently, a country's efforts to make its procedures and decision-making

processes more transparent can be seen as a building block for increasing public trust, but a democratic capacity in terms of participative decision-making is key to achieving this goal. Many scholars see openness as a "precondition for trust" (Meijer, Curtin, and Hillebrandt 2012, 22).

On the other hand, various authors warn that too much openness will lead to "more and more stories of government waste, corruption, and failure" (Fung and Weil 2010, 107). We must thus consider whether the democratic manner by which issues are addressed by open data play an important complementary role with the level of government openness. The public sector can make a wide range of datasets publicly available without ever providing effective public information (Hood 2007), offering information of actual interest to citizens, or providing citizens with participative avenues to address issues that are raised by the availability of information. Indeed, our third major finding indicates precisely that these types of avenues play a key role in the relationship between open government and trust. We find that individual perception of influence on government acts as a mediator of the effect of structural level of openness on public trust.

In summary, this study shows that individual feeling of getting integrated into political decision-making can relate to more trust in the public sector by mediating structural openness. Furthermore, both open government and perception of having a capacity to "have a say" are related to high levels of trust. Both results also indicate that trust in open governments has a reciprocal relationship. On the one hand, governments trust citizens by making data available to them and allowing them to influence politics. On the other hand, citizens trust the public sector and its institutions. These positive attitudes of the public system are further related to a positive assessment of citizen influence. A practical implication of these findings is that governments are definitely not well advised to publish data, set up a legal infrastructure for information access, open organizational processes to its citizens, and then lean back. Similarly to knowledge-based and identification-based trust (Lewicki and Bunker 1996), we assume that reciprocal trust needs time to develop and has to be actively managed.

To build up this ambidextrous organizational ability to reveal public data and simultaneously identify and integrate external knowledge (Raisch and Birkinshaw 2008), a sophisticated open government strategy is required as a political agenda. Singular political programs and administrative projects can only serve as impulses for a development that may take decades to develop moderating and retaining skills in the administrations and political bodies (Prashant and Harbir 2009). Open government is more than a trend and has the potential to permanently change the entire understanding of the political-administrative system, affecting the inner circle of democratic and constitutional governance structures. After years of initial trials and technical pilots in selected areas, it is necessary to classify data and types of openness, which can create public value in terms of increased innovation potential, efficient performance and strengthened legitimacy. For private and public organizations alike, the development and implementation of strategies of openness is an issue that political domain, the administrative practice, and the scientific community should not underestimate.

### Limitations and Directions for Future Research

Despite notable strengths (e.g., cross-country analyses of similar government inventions), this study also has limitations. First, we used country-level data to measure the effect of government openness on public trust and did not ask respondents to what extent they use and have access to public data. Knowledge about individuals' experiences with open data would enable us to judge the effect of open data use on the level of trust. However, as no cross-country study on open data use exists, we were not able to incorporate individuals' open data experiences into our study. Second, while we have shown that the feeling of having influence on politics is positively associated with trust, we do not know which activities are necessary to increase this feeling.

Beyond addressing these limitations, future research could build on our findings in various ways. While this study makes an initial step towards exploring the impact of both data disclosure and participation, future scholars may, first, extend our model by investigating additional predictor variables of government openness. This would encompass a more differentiated analysis of transparency (De Renzio and Wehner 2015) and the effect of different types of participation (Olken 2007). Relatedly, this research shows that government openness is supposed to increase the level of an individual's trust in the public sector. However, as public trust is a subjective term (Nye, Zelikow, and King 1997), further studies should focus on evaluating the effect of individual perception of information disclosure on public trust. Furthermore, whereas we have measured citizen trust in various public institutions, we are not able to make statements about public trust in the local government. Consequently, testing the research model in the local government context would be a fascinating area for future research.

Second, whereas we took a snapshot of individuals' feelings of trust and participation, as well as the countries' levels of openness, future scholars should investigate the effect of openness on the citizen–state relationship in a more dynamic analysis. Future scholars are also well advised to adopt a qualitative approach to analyzing the effect of open governments on trust. In-depth case studies such as Khagram, Fung, and de Renzio (2013) or Goldfrank and Schneider (2006) would further enhance our understanding of the effects of governmental attempts to improve the vision and voice (Meijer, Curtin, and Hillebrandt 2012) of administrative processes. Finally, the limited evidence gained from studies based on experimental design (De Renzio and Wehner 2015) calls for further investigation in this field.

Third, this research aims at explaining the varying levels of citizen trust in public systems and pinpoints participation possibilities and government openness as significant antecedents. Future scholars should endeavor to discover further determinants of public trust, as citizen trust cannot be influenced solely by data disclosure and public participation in politics. As open government is characterized by the intensive use of modern information and communication technologies, future research should ask how governments can increase the trust of individuals who are not able to utilize ICTs (see digital divide), or not willing to do so, and involve them in politics or inform them about subjects such as fiscal matters.

Fourth, this study mainly focuses on the antecedents of public trust. Further studies should emphasize the outcomes of increased trust. Are governments with close citizen–state interactions more effective? This further relates to the efficacy of citizen influence. Previous studies have questioned whether citizen–state collaborations increase public trust because citizens feel involved in government or because they improve state efficacy (see Nye, Zelikow, and King 1997; Parent, Vandebek, and Gemino 2005). Further studies must investigate the link between openness and performance, although this analysis will remain challenging both empirically and conceptually (Van de Walle and Bouckaert 2007; Van de Walle, Van Roosbroek, and Bouckaert 2005).

### Acknowledgements

The authors thank the anonymous reviewers for their time spent reading the article and for their insightful comments and suggestions. Additionally, Alex Ingrams thanks the Tilburg University Institute of Governance, where he was employed for some of the time spent researching and writing for the article.

### Notes

- 1 We excluded the available ESS item “worked in another organization or association,” as individuals from Slovenia were not asked this question.

### References

- Arnstein, Sherry. 1969. A Ladder of Citizen Participation. *Journal of the American Institute of Planners* 35(4): 216–24.
- Aucoin, Peter. 1990. Administrative Reform in Public Management: Paradigms, Principles, Paradoxes and Pendulums. *Governance* 3(2): 115–37.
- Bailard, Catie Snow. 2014. *Democracy's Double-Edged Sword: How Internet Use Changes citizens' Views of their Government*. JHU Press.
- Baron, Reuben M., and David A. Kenny. 1986. The Moderator-Mediator Variable Distinction in Social Psychological Research: Conceptual, Strategic and Statistical Considerations. *Journal of Personality and Social Psychology* 51: 1173–82.
- Bélanger, France, and Lemuria Carter. 2008. Trust and Risk in e-Government Adoption. *The Journal of Strategic Information Systems* 17(2): 165–76.
- Bingham, Lisa Blomgren, Tina Nabatchi, and Rosemary O'Leary. 2005. The New Governance: Practices and Processes for Stakeholder and Citizen Participation in the Work of Government. *Public Administration Review* 65(5): 547–58.
- Bouckaert, Geert. 2012. Reforming for Performance and Trust: Some Reflections. Network of Institutes and Schools of Public Administration in Central and Eastern Europe. *The NISPAcee Journal of Public Administration and Policy* 5(1): 9–20.
- Chesbrough, Henry, and Alberto Di Minin. 2014. Open Social Innovation. In *New Frontiers in Open Innovation*, edited by Henry Chesbrough, Wim Vanhaverbeke, and John West, 169–90. Oxford: Oxford University Press.
- Christensen, Tom, and Per Lægveid. 2005. Trust in Government: The Relative Importance of Service Satisfaction, Political Factors and demography. *Public Performance and Management Review* 28(4): 487–511.
- Cook, Fay Lomax, Lawrence R. Jacobs, and Dukhong Kim. 2010. Trusting What you Know: Information, Knowledge, and confidence in social security. *The Journal of Politics* 72(2): 397–412.
- Cucciniello, Maria, Greg A. Porumbescu, and Stephan Grimmelikhuisen. 2017. 25 Years of Transparency Research: Evidence and Future Directions. *Public Administration Review* 77(1): 32–44.
- De Fine Licht, Jenny. 2011. Do we Really Want to Know? The Potentially Negative Effect of Transparency in Decision Making on Perceived Legitimacy. *Scandinavian Political Studies* 34(3): 183–201.



- De Fine Licht, Jenny, Daniel Naurin, Peter Esaiasson, and Mikael Gilljam. 2014. When Does Transparency Generate Legitimacy? Experimenting on a Context-Bound Relationship. *Governance* 27(1): 111–34.
- De Renzio, Paolo, and Joachim Wehner. 2015. *The Impacts of Fiscal Openness: A Review of the Evidence*. International Budget Partnership: Incentives Research.
- Dunleavy, Patrick, and Christopher Hood. 1994. From Old Public Administration to New Public Management. *Public Money and Management* 14(3): 9–16.
- Ebdon, Carol, and Aimee L. Franklin. 2006. Citizen Participation in Budgeting Theory. *Public Administration Review* 66(3): 437–47.
- European Social Survey Round 7 Data (ESS-7). 2014. *Data file edition 2.2*. NSD - Norwegian Centre for Research Data, Norway – Data Archive and distributor of ESS data for ESS ERIC. doi:10.21338/NSD-ESS7-2014. (data downloaded August 13 2019)
- European Social Survey (ESS). 2014. *Weighting European Social Survey Data*. Retrieved August 18 2018 from [https://www.europeansocialsurvey.org/docs/methodology/ESS\\_weighting\\_data\\_1.pdf](https://www.europeansocialsurvey.org/docs/methodology/ESS_weighting_data_1.pdf).
- European Social Survey (ESS). 2018. *ESS-7 2014 Documentation Report. Edition 3.2*. Bergen, European Social Survey Data Archive, NSD - Norwegian Centre for Research Data for ESS ERIC. doi:10.21338/NSD-ESS7-2014.
- European Social Survey (ESS). 2020. Sampling. Retrieved July 27 2020 from [https://www.europeansocialsurvey.org/methodology/ess\\_methodology/sampling.html](https://www.europeansocialsurvey.org/methodology/ess_methodology/sampling.html).
- Evans, Angela, and Adriana Campos. 2013. Open Government Initiatives: Challenges of Citizen Participation. *Journal of Policy Analysis and Management* 32(1): 172–203.
- Ferlie, Ewan, Lynn Fitzgerald, and Andrew Pettigrew. 1996. *The New Public Management in Action*. Oxford: Oxford University Press.
- Fung, Archon. 2006. Varieties of Participation in Complex Governance. *Public Administration Review* 66(s1): 66–75.
- Fung, Archon, and David Weil. 2010. Open Government and Open Society. In *Open Government: Collaboration, Transparency, and Participation in Practice*, edited by Daniel Lathrop and Laurel Ruma, 105–13. Sebastopol, CA: O'Reilly Media.
- Goldfinch, Shaun, Robin Gauld, and Peter Herbison. 2009. The Participation Divide? Political Participation, Trust in Government, and e-Government in Australia and New Zealand. *Australian Journal of Public Administration* 68(3): 333–50.
- Goldfrank, Benjamin, and Aaron Schneider. 2006. Competitive Institution Building: The PT and Participatory Budgeting in Rio Grande Do Sul. *Latin American Politics and Society* 48(3): 1–31.
- Gomes, Álvaro, and Delfina Soares. 2014. Open government data initiatives in Europe: northern versus southern countries analysis. In *Proceedings of the 8th International Conference on Theory and Practice of Electronic Governance*, 342–350.
- Grimmelikhuijsen, Stephan. 2012. Linking Transparency, Knowledge and Citizen Trust in Government: An Experiment. *International Review of Administrative Sciences* 78(1): 50–73.
- Grimmelikhuijsen, Stephan G., and Albert J. Meijer. 2014. The Effects of Transparency on the Perceived Trustworthiness of a Government Organization: Evidence from an Online Experiment. *Journal of Public Administration Research and Theory* 24(1): 137–57.
- Grimmelikhuijsen, Stephan G., and Eric W. Welch. 2012. Developing and Testing a Theoretical Framework for Computer-Mediated Transparency of Local Governments. *Public Administration Review* 72(4): 562–71.
- Grimmelikhuijsen, Stephan G., and Mary K. Feeney. 2017. Developing and Testing an Integrative Framework for Open Government Adoption in Local Governments. *Public Administration Review* 77(4): 579–90.
- Grimmelikhuijsen, Stephan, Gregory Porumbescu, Boram Hong, and Tobin Im. 2013. The Effect of Transparency on Trust in Government: A Cross-National Comparative Experiment. *Public Administration Review* 73(4): 575–86.
- Hibbing, John R., and Elizabeth Theiss-Morse. 2002. *Stealth Democracy: Americans' Beliefs about how Government Should Work*. Cambridge, UK: Cambridge University Press.
- Hofmann, David A. 1997. An Overview of the Logic and Rationale of Hierarchical Linear Models. *Journal of Management* 23(6): 723–44.
- Hood, Christopher. 1991. A Public Management for all Seasons. *Public Administration* 69(1): 3–19.
- . 2006. Transparency in Historical Perspective. In *Transparency: The Key to Better Governance?* edited by Christopher Hood and David Heald, 3–23. Proceedings of the British Academy. Vol. 135. Oxford: Oxford University Press.
- . 2007. What Happens when Transparency Meets Blame-Avoidance? *Public Management Review* 9(2): 191–210.
- Hooghe, Marc, and Sofie Marien. 2013. A Comparative Analysis of the Relation between Political Trust and Forms of Political Participation in Europe. *European Societies* 15(1): 131–52.
- Huxley, Katy, Rhys Andrews, James Downe, and Valeria Guarneros-Meza. 2016. Administrative Traditions and Citizen Participation in Public Policy: A Comparative Study of France, Germany the UK and Norway. *Policy and Politics* 44(3): 383–402.
- Im, Tobin, Wonhyuk Cho, Greg Porumbescu, and Jungho Park. 2014. Internet, Trust in Government and Citizen Compliance. *Journal of Public Administration Research and Theory* 24(3): 741–63.
- Ingrams, Alex. 2015. Mobile Phones, Smartphones, and the Transformation of Civic Behavior through Mobile Information and Connectivity. *Government Information Quarterly* 32(4): 506–15.
- . 2020. Administrative Reform and the Quest for Openness: A Popperian Review of Open Government. *Administration & Society* 52(2): 319–40.
- Ingrams, Alex, and Hindy L. Schachter. 2019. E-Participation Opportunities and the Ambiguous Role of Corruption: A Model of Municipal Responsiveness to Sociopolitical Factors. *Public Administration Review* 79(4): 601–11.
- Janssen, Marijin, Yannis Charalabidis, and Anneke Zuiderwijk. 2012. Benefits, Adoption Barriers and Myths of Open Data and Open Government. *Information Systems Management* 29(4): 258–68.
- Jetzek, Thorhildur. 2016. Managing Complexity across Multiple Dimensions of Liquid Open Data: The Case of the Danish Basic Data Program. *Government Information Quarterly* 33(1): 89–104.
- Keele, Luke. 2007. Social Capital and the Dynamics of Trust in Government. *American Journal of Political Science* 51(2): 241–54.
- Kern, Anna, Sofie Marien, and Marc Hooghe. 2015. Economic Crisis and Levels of Political Participation in Europe (2002–2010): The Role of Resources and Grievances. *West European Politics* 38(3): 465–90.
- Kettl, Donald F. 2000. *The Global Public Management Revolution*. Washington, DC: Brookings Institution Press.
- . 2019. From Policy to Practice: From Ideas to Results, from Results to Trust. *Public Administration Review* 79(5): 763–7.
- Khagram, Sanjeev, Archon Fung, and Paolo de Renzio. 2013. *Open Budgets: The Political Economy of Transparency, Participation, and Accountability*. Washington, DC: Brookings Institution Press.
- Kim, Soonhee, and Jooho Lee. 2012. E-Participation, Transparency, and Trust in Local Government. *Public Administration Review* 72(6): 819–28.
- Kooiman, Jan. 1999. Social-Political Governance: Overview, Reflections and Design. *Public Management Review* 1(1): 67–92.
- Kweit, Mary G., and Robert W. Kweit. 2004. Citizen Participation and Citizen Evaluation in Disaster Recovery. *The American Review of Public Administration* 34(4): 354–73.
- Lægred, Per, and Lise H. Rykkja. 2016. Norway: Managerialism, Incrementalism and Collaboration. In *Public Administration Reforms in Europe*, edited by Steven Van de Walle, Gerhard Hammerschmid, Rhys Andrews, and Philippe Bezes, 151–61. Cheltenham, UK: Edward Elgar Publishing.



- Lee, Gwanhoo, and Young H. Kwak. 2012. An Open Government Maturity Model for Social Media-Based Public Engagement. *Government Information Quarterly* 29(4): 492–503.
- Lewicki, Roy J., and Barbara Bunker. 1996. Developing and Maintaining Trust in Work Relationships. In *Trust in Organizations: Frontiers of Theory and Research*, edited by Roderick Kramer and Tom R. Tyler, 114–39. Thousand Oak, CA: SAGE.
- Lewis, J. David, and Andrew Weigert. 1985. Trust as a Social Reality. *Social Forces* 63(4): 967–85.
- Linders, Dennis. 2012. From e-Government to we-Government: Defining a Typology for Citizen Coproduction in the Age of Social Media. *Government Information Quarterly* 29(4): 446–54.
- Liu, Helen K. 2017. Crowdsourcing Government: Lessons from Multiple Disciplines. *Public Administration Review* 77(5): 656–67.
- Lodge, Martin, and Kai Wegrich. 2015. Crowdsourcing and Regulatory Reviews: A New Way of Challenging Red Tape in British Government? *Regulation & Governance* 9(1): 30–46.
- Lowry, James. 2016. Opening Government: Open Data and Access to Information. In *Integrity in Government through Records Management: Essays in Honour of Anne Thurston*, edited by James Lowry and Justus Wamukoya, 161–72. London and New York: Routledge.
- Luhmann, Niklas. 2011. *Einführung in die Systemtheorie*. Carl Auer Verlag.
- Lynn, Peter. 2003. Developing Quality Standards for Cross-National Survey Research: Five Approaches. *International Journal of Social Research Methodology* 6(4): 323–36.
- Marozzi, Marco. 2015. Measuring Trust in European Public Institutions. *Social Indicators Research* 123(3): 879–95.
- Mayer, Roger C., James H. Davis, and F. David Schoorman. 1995. An Integrative Model of Organizational Trust. *Academy of Management Review* 20(3): 709–34.
- McKnight, D. Harrison, and Norman L. Chervany. 2001. What Trust Means in e-Commerce Customer Relationships: An Interdisciplinary Conceptual Typology. *International Journal of Electronic Commerce* 6(2): 35–59.
- McNabb, David E. 2009. *The New Face of Government: How Public Managers Are Forging a New Approach to Governance*. Boca Raton, FL: CRC Press.
- Meijer, Albert. 2009. Understanding Modern Transparency. *International Review of Administrative Sciences* 75(2): 255–69.
- Meijer, Albert J., Deirdre Curtin, and Maarten Hillebrandt. 2012. Open Government: Connecting Vision and Voice. *International Review of Administrative Sciences* 78(1): 10–29.
- Mergel, Ines, and Kevin C. Desouza. 2013. Implementing Open Innovation in the Public Sector: The Case of Challenge.gov. *Public Administration Review* 73(6): 882–90.
- Mises, L. 1944. *Bureaucracy*. Grove City, PA: The Libertarian Press.
- Morgeson, Forrest V., David Van Amburg, and Sunil Mithas. 2011. Misplaced Trust? Exploring the Structure of the e-Government-Citizen Trust Relationship. *Journal of Public Administration Research and Theory* 21(2): 257–83.
- Muthusamy, Senthil K., and Margaret A. White. 2005. Learning and Knowledge Transfer in Strategic Alliances: A Social Exchange View. *Organization Studies* 26(3): 415–41.
- Niskanen, William A. 1971. *Bureaucracy and Representative Government*. Chicago, IL/ New York, NY: Aldine/Atherton.
- Noveck, Beth S. 2009. *Wiki Government: How Technology Can Make Government Better, Democracy Stronger, and Citizens more Powerful*. Brookings Institution Press.
- Nye, Joseph S., Philip Zelikow, and David C. King. 1997. *Why People don't Trust Government*. Cambridge, MA: Harvard University Press.
- O'Leary, Rosemary, and Lisa B. Bingham. 2009. *The Collaborative Public Manager: New Ideas for the Twenty-First Century*. Washington, DC: Georgetown University Press.
- O'Neill, Onora. 2002. *A Question of Trust: The BBC Reith Lectures 2002*. Cambridge, UK: Cambridge University Press.
- OECD. 2015. *Government at a Glance 2015*. Paris: OECD Publishing [https://doi.org/10.1787/gov\\_glance-2015-en](https://doi.org/10.1787/gov_glance-2015-en) [accessed March 6, 2016].
- Olken, Benjamin. 2007. Monitoring Corruption: Evidence from a Field Experiment in Indonesia. *Journal of Political Economy* 115(2): 200–49.
- Osborne, David, and Ted Gaebler. 1992. *Reinventing Government. How the Entrepreneurial Spirit Is Transforming the Public Sector*. New York: Addison-Wesley Publishing Company.
- Osborne, Stephen P. 2006. The New Public Governance? (Editorial). *Public Management Review* 8(3): 377–87.
- . 2010. *The New Public Governance?* London: Routledge.
- Overman, Sjors. 2017. Autonomous Agencies, Happy Citizens? Challenging the Satisfaction Claim. *Governance* 30(2): 211–27.
- Pardo, Antonio, and Marta Román. 2013. Reflections on the Baron and Kenny Model of Statistical Mediation. *Anales de Psicología* 29(2): 614–23.
- Parent, Michael, Christine A. Vandebek, and Andrew C. Gemino. 2005. Building Citizen Trust through e-Government. *Government Information Quarterly* 22(4): 720–36.
- Piotrowski, Suzanne, David H. Rosenbloom, Sinah Kang, and Alex Ingrams. 2018. Levels of Value Integration in Federal agencies' Mission and Value Statements: Is Open Government a Performance Target of US Federal Agencies? *Public Administration Review* 78(5): 705–16.
- Pollitt, Christopher, and Geert Bouckaert. 2004. *Public Management Reform*, 2nd ed. Oxford: Oxford University Press.
- Prashant, Kale, and Singh Harbir. 2009. Managing Strategic Alliances: What Do we Know Now, and where Do we Go from Here? *Academy of Management Perspectives* 23(3): 45–62.
- Raisch, Sebastian, and Julian Birkinshaw. 2008. Organizational Ambidexterity: Antecedents, Outcomes, and Moderators. *Journal of Management* 34(3): 375–409.
- Roberts, Nancy. 2004. Public Deliberation in an Age of Direct Citizen Participation. *The American Review of Public Administration* 34(4): 315–53.
- Rousseau, Denise M., Sim B. Sitkin, Ronald S. Burt, and Colin Camerer. 1998. Not So Different after all: A Cross-Discipline View of Trust. *Academy of Management Review* 23(3): 393–404.
- Sako, Mari. 1992. *Price, Quality and Trust: Inter-Firm Relations in Britain and Japan (No. 18)*. Cambridge, UK: Cambridge University Press.
- Scharpf, Fritz W. 1999. *Governing in Europe: Effective and Democratic?* Oxford University Press.
- Schmidhuber, Lisa, and Dennis Hilgers. 2018. Unleashing Innovation beyond Organizational Boundaries: Exploring Citizensourcing Projects. *International Journal of Public Administration* 41(4): 268–83.
- Schmidhuber, Lisa, Dennis Hilgers, Thomas Gegenhuber, and Stefan Etzelstorfer. 2017. The Emergence of Local Open Government: Determinants of Citizen Participation in Online Service Reporting. *Government Information Quarterly* 34(3): 457–69.
- Seibert, Scott E., Seth R. Silver, and W. Alan Randolph. 2004. Taking Empowerment to the Next Level: A Multiple-Level Model of Empowerment, Performance and Satisfaction. *Academy of Management Journal* 47(3): 332–49.
- Stirton, Lindsay, and Martin Lodge. 2001. Transparency Mechanisms: Building Publicness into Public Services. *Journal of Law and Society* 28(4): 471–89.
- The World Justice Project. 2016. *Open Government Around the World*. <http://worldjusticeproject.org/open-government-index/open-government-around-world> [accessed April 6, 2016].
- Thomas, Craig W. 1998. Maintaining and Restoring Public Trust in Government Agencies and their Employees. *Administration & Society* 30(2): 166–93.
- Tolbert, Caroline J., and Karen Mossberger. 2006. The Effects of e-Government on Trust and Confidence in Government. *Public Administration Review* 66(3): 354–69.

- Tyler, Tom. 1990. *Why People Obey the Law*. New Haven, CT: Yale University Press.
- Van de Walle, Steven. 2010. New Public Management: Restoring the Public Trust through Creating Distrust? In *The Ashgate Research Companion to New Public Management*, edited by Tom Christensen and Per Lægveid, 309–20. Aldershot, UK: Ashgate.
- Van de Walle, Steven, and Geert Bouckaert. 2003. Public Service Performance and Trust in Government: The Problem of Causality. *International Journal of Public Administration* 26(8-9): 891–913.
- . 2007. Perceptions of Productivity and Performance in Europe and the United States. *International Journal of Public Administration* 30(11): 1123–40.
- Van de Walle, Steven, and Lihi Lahat. 2017. Do Public Officials Trust Citizens? A Welfare State Perspective. *Social Policy & Administration* 51(7): 1450–69.
- Van de Walle, Steven, Steven Van Roosbroek, and G. Bouckaert. 2005. Data on Trust in the Public Sector. In OECD Ministerial Meeting Strengthening Trust in Government: What Role for Government in the 21st Century? GOV/PGC/MIN(2005)2/ANN. Rotterdam, The Netherlands.
- Van de Walle, Steven, Steven Van Roosbroek, and Geert Bouckaert. 2008. Trust in the Public Sector: Is there any Evidence for a Long-Term Decline? *International Review of Administrative Sciences* 74(1): 47–64.
- Wang, Xiaohu, and Monty Van Wart. 2007. When Public Participation in Administration Leads to Trust: An Empirical Assessment of Managers' Perceptions. *Public Administration Review* 67(2): 265–78.
- Weber, Max. 1922/1985. *Wirtschaft und Gesellschaft. Grundriss der Verstehenden Soziologie*, 5th ed. Tübingen: Mohr Siebeck.
- Welch, Eric W. 2012. The Relationship between Transparent and Participative Government: A Study of Local Governments in the United States. *International Review of Administrative Sciences* 78(1): 93–115.
- Welch, Eric W., Charles C. Hinnant, and M. Jae Moon. 2005. Linking Citizen Satisfaction with e-Government and Trust in Government. *Journal of Public Administration Research and Theory* 15(3): 371–91.
- Wilson, Christopher. 2019. Multi-Stakeholder Initiatives, Policy Learning and Institutionalization: The Surprising Failure of Open Government in Norway. *Policy Studies*: 1–20 <https://doi.org/10.1080/01442872.2019.1618808>.
- World Justice Project. 2016. *Who We Are*. <http://worldjusticeproject.org/who-we-are> [Accessed August 15, 2019].
- Zhang, Zhen, Michael J. Zyphur, and Kristopher J. Preacher. 2009. Testing Multilevel Mediation Using Hierarchical Linear Models: Problems and Solutions. *Organizational Research Methods* 12(4): 695–719.

## Appendix 1 Descriptive Statistics Split by Country

| Country                            | Austria | Belgium | Czech Rep. | Denmark | Estonia | Finland | France | Germany | GB    | Hungary | Netherlands | Norway | Poland | Portugal | Slovenia | Spain | Sweden |
|------------------------------------|---------|---------|------------|---------|---------|---------|--------|---------|-------|---------|-------------|--------|--------|----------|----------|-------|--------|
| Citizen trust in the public system | 4.9     | 4.8     | 4.2        | 6.3     | 4.6     | 5.9     | 4.2    | 5.2     | 4.7   | 4.1     | 5.5         | 6.4    | 3.2    | 3.4      | 3.2      | 3.7   | 6      |
| Trust in country's parliament      | 4.8     | 4.9     | 3.9        | 6       | 4.5     | 5.6     | 4      | 5.2     | 4.4   | 3.9     | 5.3         | 6.8    | 2.9    | 3.3      | 3        | 3.8   | 6.3    |
| Trust in the legal system          | 5.8     | 5       | 4.6        | 7.5     | 5.3     | 6.8     | 5.2    | 5.9     | 5.7   | 4.7     | 6           | 7.2    | 3.6    | 3.8      | 3.3      | 4     | 6.4    |
| Trust in the police                | 6.6     | 6       | 5.7        | 7.7     | 6.2     | 7.9     | 6.1    | 6.8     | 6.3   | 5.4     | 6.5         | 7.3    | 5.2    | 5.6      | 5.6      | 6.2   | 6.9    |
| Trust in politicians               | 3.6     | 4.2     | 3.3        | 5       | 3.6     | 4.6     | 2.8    | 3.9     | 3.5   | 3.1     | 4.9         | 5.3    | 2.1    | 2.1      | 2.1      | 2.3   | 5      |
| Trust in political parties         | 3.6     | 4.2     | 3.3        | 5.1     | 3.5     | 4.7     | 2.8    | 4       | 3.6   | 3.1     | 4.9         | 5.3    | 2.1    | 2.3      | 2.1      | 2.8   | 5.1    |
| Democratic capacity                | 3.4     | 3.6     | 3.2        | 5.3     | 2.9     | 4.4     | 3.3    | 4       | 3.7   | 2.4     | 4.2         | 5.1    | 3      | 2.8      | 2.4      | 3     | 4.9    |
| Government openness                | .72     | .7      | .64        | .78     | .72     | .76     | .69    | .72     | .74   | .51     | .76         | .81    | .67    | .64      | .6       | .62   | .81    |
| Instit. political activity         | .1      | .1      | .1         | .1      | .1      | .1      | .1     | .1      | .1    | .1      | .1          | .2     | .1     | .1       | .1       | .1    | .1     |
| Noninstit. political activity      | .2      | .1      | .1         | .2      | .1      | .2      | .3     | .2      | .2    | .0      | .1          | .3     | .1     | .1       | .1       | .2    | .3     |
| Political interest                 | 2.6     | 2.4     | 1.9        | 2.9     | 2.5     | 2.6     | 2.5    | 2.9     | 2.7   | 2.1     | 2.7         | 2.5    | 2.3    | 2.3      | 2.5      | 2.4   | 2.8    |
| Political attitude                 | 4.6     | 5       | 5.1        | 5.5     | 5.1     | 5.6     | 5      | 4.6     | 5     | 5.3     | 5.2         | 5.3    | 5.8    | 4.8      | 4.4      | 4.4   | 5      |
| Gender                             | .5      | .5      | .5         | .5      | .4      | .5      | .5     | .5      | .5    | .4      | .5          | .5     | .5     | .5       | .5       | .5    | .5     |
| Age                                | 2.1     | 2       | 2          | 2.1     | 2.1     | 2.2     | 2      | 2.1     | 2.1   | 2.2     | 2.1         | 2.0    | 2      | 2.2      | 2.1      | 2     | 2.1    |
| Education                          | .3      | .6      | .6         | .5      | .8      | .8      | .5     | .5      | .6    | .5      | .4          | .6     | .5     | .4       | .6       | .4    | .7     |
| General trust in people            | 5.4     | 5.2     | 4.7        | 6.8     | 5.5     | 6.5     | 5.1    | 5.5     | 5.8   | 4.4     | 6.1         | 6.5    | 4.2    | 4.3      | 4.9      | 4.9   | 6.4    |
| N                                  | 1,475   | 1,651   | 1,727      | 1,311   | 1,566   | 1,910   | 1,721  | 2,784   | 1,814 | 1,308   | 1,707       | 1,321  | 1,122  | 998      | 841      | 1,458 | 1,534  |

Note: Mean values, weighted.

## Appendix 2 Different Types of Public Trust.

### 2a Public Trust in the Parliament.

|   | (1)              | (2)              | (3)              |
|---|------------------|------------------|------------------|
|   | Model 1          | Model 2          | Model 3          |
| Government openness                     | 6.877** (2.692)  |                  | 3.318* (1.962)   |
| Democratic capacity                     |                  | .664*** (.0260)  | .664*** (.0261)  |
| Institutionalized political activity    | .127 (.147)      | -.463*** (.0923) | -.462*** (.0924) |
| Noninstitutionalized political activity | -.504*** (.142)  | -.650*** (.109)  | -.651*** (.109)  |
| Political interest                      | .404*** (.0245)  | .0258 (.0285)    | .0256 (.0284)    |
| Political attitude (from left to right) | .0825 (.0549)    | .0600 (.0381)    | .0600 (.0382)    |
| Gender (ref. female)                    | .115 (.0723)     | .0136 (.0519)    | .0137 (.0519)    |
| Age (ref. young)                        |                  |                  |                  |
| Intermediate                            | -.304*** (.0611) | -.0879** (.0386) | -.0878** (.0386) |
| High                                    | -.373*** (.118)  | .0773 (.0571)    | .0774 (.0571)    |
| Education (ref. low)                    | .338*** (.0954)  | .0924 (.0766)    | .0928 (.0766)    |
| General trust in people                 | .411*** (.0281)  | .220*** (.0183)  | .220*** (.0183)  |
| Constant                                | -3.760** (1.866) | .764*** (.181)   | -1.554 (1.350)   |
| <i>Random-effects parameters</i>        |                  |                  |                  |
| Var (constant)                          | .289 (.100)      | .249 (.089)      | .189 (.071)      |
| Var (residual)                          | 4.987 (.213)     | 3.917 (.169)     | 3.917 (.169)     |
| ICC                                     | .055 (.018)      | .06 (.02)        | .046 (.016)      |
| Wald Chi <sup>2</sup>                   | 14574.08***      | 46140.15***      | 44984.31***      |
| Observations                            | 26,248           | 26,248           | 26,248           |
| Number of groups                        | 17               | 17               | 17               |

Note: Robust standard errors in parentheses, weighted, \*\*\*  $p < .01$ , \*\*  $p < .05$ , \*  $p < .1$ . Sobel test:  $z = 3.97$ , SE: .892,  $p < .000$ .

### 2b Public Trust in the Legal System.

|   | (1)              | (2)              | (3)              |
|---|------------------|------------------|------------------|
|   | Model 1          | Model 2          | Model 3          |
| Government openness                     | 8.053** (3.180)  |                  | 5.564** (2.646)  |
| Democratic capacity                     |                  | .463*** (.0141)  | .463*** (.0141)  |
| Institutionalized political activity    | -.0909 (.162)    | -.502*** (.155)  | -.502*** (.155)  |
| Noninstitutionalized political activity | -.475*** (.102)  | -.576*** (.0728) | -.578*** (.0727) |
| Political interest                      | .259*** (.0281)  | -.00485 (.0343)  | -.00513 (.0343)  |
| Political attitude (from left to right) | .0390 (.0402)    | .0233 (.0288)    | .0232 (.0288)    |
| Gender (ref. female)                    | .122 (.0802)     | .0512 (.0636)    | .0512 (.0636)    |
| Age (ref. young)                        |                  |                  |                  |
| Intermediate                            | -.322*** (.0683) | -.171*** (.0631) | -.171** (.0631)  |
| High                                    | -.737*** (.131)  | -.424*** (.101)  | .424*** (.102)   |
| Education (ref. low)                    | .369*** (.0716)  | .197*** (.0503)  | .198*** (.0503)  |
| General trust in people                 | .423*** (.0208)  | .290*** (.0140)  | .290*** (.0140)  |
| Constant                                | -3.216 (2.275)   | 2.217*** (.207)  | -1.671 (1.898)   |
| <i>Random-effects parameters</i>        |                  |                  |                  |
| Var (constant)                          | .337 (.133)      | .442 (.122)      | .26 (.097)       |
| Var (residual)                          | 5.204 (.19)      | 4.684 (.163)     | 4.68 (.163)      |
| ICC                                     | .061 (.022)      | .086 (.021)      | .053 (.018)      |
| Wald Chi <sup>2</sup>                   | 52733.16***      | 402423.3***      | 432379.06***     |
| Observations                            | 26,248           | 26,248           | 26,248           |
| Number of groups                        | 17               | 17               | 17               |

Note: Robust standard errors in parentheses, weighted, \*\*\*  $p < .01$ , \*\*  $p < .05$ , \*  $p < .1$ ; Sobel test:  $z = 3.99$ , SE: .619,  $p < .000$ .



## 2c Public Trust in the Police.

|   | (1)              | (2)              | (3)              |
|---|------------------|------------------|------------------|
|   | Model 1          | Model 2          | Model 3          |
| Government openness                     | 4.430*** (.996)  |                  | 2.806*** (.976)  |
| Democratic capacity                     |                  | .306*** (.0125)  | .306*** (.0126)  |
| Institutionalized political activity    | -.113 (.107)     | -.385*** (.0836) | -.385*** (.0836) |
| Noninstitutionalized political activity | -.736*** (.0917) | -.803*** (.0970) | -.804*** (.0965) |
| Political interest                      | .174*** (.0384)  | .000416 (.0426)  | .000248 (.0425)  |
| Political attitude (from left to right) | .0971*** (.0253) | .0868*** (.0206) | .0867*** (.0206) |
| Gender (ref. female)                    | -.0684* (.0385)  | -.115*** (.0306) | -.115*** (.0306) |
| Age (ref. young)                        |                  |                  |                  |
| Intermediate                            | -.00365 (.0447)  | .0957* (.0509)   | .0959* (.0508)   |
| High                                    | -.118 (.0734)    | .0896 (.0806)    | .0897 (.0805)    |
| Education (ref. low)                    | .123** (.0625)   | .00984 (.0557)   | .0102 (.0558)    |
| General trust in people                 | .357*** (.0197)  | .269*** (.0163)  | .269*** (.0163)  |
| Constant                                | .540 (.602)      | 3.503*** (.165)  | 1.544*** (.598)  |
| Random-effects parameters               |                  |                  |                  |
| Var (constant)                          | .144 (.047)      | .182 (.065)      | .138 (.048)      |
| Var (residual)                          | 4.647 (.286)     | 4.42 (.282)      | 4.42 (.282)      |
| ICC                                     | .03 (.01)        | .04 (.013)       | .03 (.01)        |
| Wald Chi <sup>2</sup>                   | 19719.45***      | 18381.01***      | 34918.07***      |
| Observations                            | 26,248           | 26,248           | 26,248           |
| Number of groups                        | 17               | 17               | 17               |

Note: Robust standard errors in parentheses, weighted, \*\*\*  $p < .01$ , \*\*  $p < .05$ , \*  $p < .1$ ; Sobel test:  $z = 3.96$ , SE: .412,  $p < .000$ .

## 2d Public Trust in Politicians.

|   | (1)              | (2)              | (3)              |
|---|------------------|------------------|------------------|
|   | Model 1          | Model 2          | Model 3          |
| Government openness                     | 6.666** (2.762)  |                  | 3.248 (2.079)    |
| Democratic capacity                     |                  | .638*** (.0273)  | .637*** (.0274)  |
| Institutionalized political activity    | .325** (.142)    | -.241** (.0934)  | -.240** (.0935)  |
| Noninstitutionalized political activity | -.770*** (.0668) | -.910*** (.0671) | -.911*** (.0667) |
| Political interest                      | .371*** (.0299)  | .00766 (.0287)   | .00746 (.0287)   |
| Political attitude (from left to right) | .0712* (.0380)   | .0496** (.0227)  | .0496** (.0227)  |
| Gender (ref. female)                    | -.116** (.0565)  | -.213*** (.0377) | -.213*** (.0377) |
| Age (ref. young)                        |                  |                  |                  |
| Intermediate                            | -.318*** (.0623) | -.111** (.0452)  | -.111** (.0452)  |
| High                                    | -.301*** (.105)  | .131** (.0613)   | .132** (.0613)   |
| Education (ref. low)                    | .0818 (.0844)    | -.154*** (.0433) | -.154*** (.0432) |
| General trust in people                 | .400*** (.0273)  | .217*** (.0187)  | .216*** (.0187)  |
| Constant                                | -4.153** (1.955) | .238* (.143)     | -2.032 (1.477)   |
| Random-effects parameters               |                  |                  |                  |
| Var (constant)                          | .306 (.09)       | .266 (.065)      | .205 (.062)      |
| Var (residual)                          | 4.049 (.122)     | 3.063 (.122)     | 3.063 (.122)     |
| ICC                                     | .07 (.019)       | .08 (.018)       | .063 (.017)      |
| Wald Chi <sup>2</sup>                   | 3801.17***       | 17361.64***      | 34646.36***      |
| Observations                            | 26,248           | 26,248           | 26,248           |
| Number of groups                        | 17               | 17               | 17               |

Note: Robust standard errors in parentheses, weighted, \*\*\*  $p < .01$ , \*\*  $p < .05$ , \*  $p < .1$ . Sobel test:  $z = 3.96$ , SE: .859,  $p < .000$ .

2e Public Trust in Political Parties.

|   | (1)              | (2)              | (3)              |
|---|------------------|------------------|------------------|
|   | Model 1          | Model 2          | Model 3          |
| Government openness                     | 7.074** (2.871)  |                  | 3.830* (2.210)   |
| Democratic capacity                     |                  | .605*** (.0255)  | .605*** (.0256)  |
| Institutionalized political activity    | .286*** (.0945)  | -.251*** (.0734) | -.251*** (.0735) |
| Noninstitutionalized political activity | -.555*** (.0737) | -.687*** (.0537) | -.689*** (.0534) |
| Political interest                      | .398*** (.0443)  | .0540 (.0392)    | .0538 (.0392)    |
| Political attitude (from left to right) | .0626** (.0271)  | .0421*** (.0134) | .0420*** (.0134) |
| Gender (ref. female)                    | -.0948 (.0659)   | -.188*** (.0380) | -.187*** (.0380) |
| Age (ref. young)                        |                  |                  |                  |
| Intermediate                            | -.551*** (.0916) | -.354*** (.0697) | -.354*** (.0697) |
| High                                    | -.607*** (.118)  | -.197*** (.0649) | -.197*** (.0649) |
| Education (ref. low)                    | -.0117 (.0781)   | -.235*** (.0346) | -.235*** (.0346) |
| General trust in people                 | .349*** (.0234)  | .176*** (.0164)  | .175*** (.0164)  |
| Constant                                | -3.929* (2.032)  | .761*** (.156)   | -1.916 (1.571)   |
| <i>Random-effects parameters</i>        |                  |                  |                  |
| Var (constant)                          | .324 (.099)      | .299 (.075)      | .214 (.072)      |
| Var (residual)                          | 3.905 (.102)     | 3.017 (.094)     | 3.017 (.094)     |
| ICC                                     | .0767 (.022)     | .090 (.021)      | .066 (.02)       |
| Wald Chi <sup>2</sup>                   | 7751.80***       | 37846.08***      | 45741.69***      |
| Observations                            | 26,248           | 26,248           | 26,248           |
| Number of groups                        | 17               | 17               | 17               |

Note: Robust standard errors in parentheses, weighted, \*\*\*  $p < .01$ , \*\*  $p < .05$ , \*  $p < .1$ ; Sobel test:  $z = 3.965$ ,  $SE = .814$ ,  $p < .000$ .

**Appendix 3: Results of Mediated Regression Analysis, Split by Individuals with Low- and High-level Trust**

|  | (1)                                | (2)                                      | (3)                 | (4)                                      | (5)                                | (6)                                | (7)                 | (8)                                |
|--|------------------------------------|--|---------------------|--|------------------------------------|------------------------------------|---------------------|------------------------------------|
|  | Low level of trust                 |  |                     |  | High level of trust                |                                    |                     |                                    |
|  | Citizen trust in the public system | Citizen trust in the public system trust | Democratic capacity | Citizen trust in the public system trust | Citizen trust in the public system | Citizen trust in the public system | Democratic capacity | Citizen trust in the public system |
| Government openness                      | 3.106*** (.835)                    |  | 2.42*** (.576)      | 2.359** (.792)                           | 1.426 (.962)                       | .197*** (.00824)                   | 3.640*** (.696)     | .699 (.868)                        |
| Democratic capacity                      |                                    | .309*** (.017)                           |                     | .309*** (.018)                           |                                    |                                    |                     | .197*** (.00816)                   |
| Institutionalized political activity     | -.125 (.085)                       | -.295*** (.08)                           | .549*** (.112)      | -.295*** (.08)                           | .193*** (.0379)                    | -.0396 (.0438)                     | 1.179*** (.0792)    | -.0393 (.0438)                     |
| Non-institutionalized political activity | -.323** (.114)                     | -.432*** (.078)                          | .359** (.147)       | -.434*** (.078)                          | -.182*** (.0691)                   | -.275*** (.0681)                   | .476*** (.0957)     | -.276*** (.0678)                   |
| Political interest                       | .169*** (.019)                     | .043** (.017)                            | .409*** (.031)      | .043** (.017)                            | .0930*** (.0150)                   | -.0275** (.0137)                   | .611*** (.0247)     | -.0275** (.0137)                   |
| Political attitude (from left to right)  | .023 (.016)                        | .021* (.012)                             | .007 (.013)         | .02* (.012)                              | .0270*** (.00967)                  | .0223*** (.00781)                  | .0237* (.0136)      | .0224*** (.00783)                  |
| Gender (ref. female)                     | -.08** (.03)                       | -.123*** (.017)                          | .138*** (.053)      | -.123*** (.017)                          | .103*** (.0299)                    | .0716*** (.0255)                   | .162*** (.0436)     | .0716*** (.0256)                   |
| Age (ref. young)                         |                                    |  |                     |  |                                    |                                    |                     |                                    |
| Intermediate                             | -.154** (.063)                     | -.07** (.033)                            | -.274*** (.067)     | -.07** (.033)                            | -.0446 (.0356)                     | -.00296 (.0355)                    | -.212*** (.0558)    | -.00274 (.0355)                    |
| High                                     | -.231*** (.064)                    | -.059 (.038)                             | -.557*** (.08)      | -.059 (.038)                             | -.0628 (.0486)                     | .0555 (.0411)                      | -.601*** (.0947)    | .0557 (.0411)                      |
| Education (ref. low)                     | .132** (.012)                      | .05 (.052)                               | .262*** (.067)      | .051 (.052)                              | -.0183 (.0420)                     | -.0919*** (.0303)                  | .373*** (.102)      | -.0917*** (.0303)                  |
| General trust in people                  | .204*** (.012)                     | .149*** (.007)                           | .18*** (.015)       | .149*** (.007)                           | .114*** (.00947)                   | .0778*** (.00719)                  | .185*** (.0119)     | .0775*** (.00705)                  |
| Constant                                 | -.211 (.576)                       | 1.681*** (.107)                          | -.809** (.399)      | .04 (.549)                               | 4.407*** (.698)                    | 5.112*** (.0522)                   | -.1.057** (.496)    | 4.623*** (.636)                    |
| Random-effects parameters                |                                    |  |                     |  |                                    |                                    |                     |                                    |
| Var (constant)                           | .034 (.011)                        | .064 (.019)                              | .038 (.022)         | .035 (.015)                              | .037 (.011)                        | .034 (.007)                        | .055 (.027)         | .032 (.010)                        |
| Var (residual)                           | 1.467 (.063)                       | 1.278 (.069)                             | 1.977 (.064)        | 1.278 (.069)                             | .804 (.036)                        | .724 (.032)                        | 2.085 (.065)        | .724 (.032)                        |
| Wald Chi <sup>2</sup>                    | 27833.89***                        | 58332.09***                              | 29528.34***         | 71629.71***                              | 2440.72***                         | 1968.54***                         | 45630.21***         | 3579.91***                         |
| Observations                             | 13,774                             | 13,774                                   | 13,774              | 13,774                                   | 12,474                             | 12,474                             | 12,474              | 12,474                             |
| Number of groups                         | 17                                 | 17                                       | 17                  | 17                                       | 17                                 | 17                                 | 17                  | 17                                 |

Note: Robust standard errors in parentheses, weighted, \*\*\*  $p < .01$ , \*\*  $p < .05$ , \*  $p < .1$ ; Low level of trust: Sobel test:  $z = 4.09$ ,  $SE: .1829$ ,  $p < .000$ ; High level of trust: Sobel test:  $z = 5.116$ ,  $SE: .14$ ,  $n.s.$