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Open data for democracy: Developing a theoretical framework for open data use

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ABSTRACT

Open data platforms are hoped to foster democratic processes, yet recent empirical research shows that so far they have failed to do so. We argue that current open data platforms do not take into account the complexity of democratic processes which results in overly simplistic approaches to open data platform design. Democratic processes are multifaceted and open data can be used for various purposes, with diverging roles, rules and tools by citizens and public administrators. This study develops a Democratic Activity Model of Open Data Use, which is illustrated by an exploratory qualitative multiple case study outlining three democratic processes: monitorial, deliberative and participatory. We find that each type of democratic process requires a different approach and open data design. We conclude that a context-sensitive open data design facilitates the transformation of raw data into meaningful information constructed collectively by public administrators and citizens.

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1. Introduction

One important underlying condition of a properly functioning democracy is access to information (Harrison & Sayogo, 2014). Informed citizens are better able to contribute to democratic processes, better able to understand and accept the basis of decisions affecting them and better able to shape the situations in which they live (Birkinshaw, 2006; Meijer, Curtin, & Hillebrandt, 2012). Several scholars have pointed out that open data platforms aim to foster democratic processes by promoting transparency through the publication of government datasets and by providing the opportunity to actively participate in government processes such as decision-making, policy-making and solving public problems (Verhulst & Young, 2016; Attard, Orlandi, Scerri, & Auer, 2015; Lourenço, 2015; Dawes & Helbig, 2010; Janssen, 2011). Open data platforms are also aimed at stimulating innovation, economic growth and at improving service delivery (Verhulst & Young, 2016; Janssen, Charalabidis, & Zuiderwijk, 2012; Huijboom & Van den Broek, 2011). However this study focuses on to the value of open data for democracy.

To improve open data usage, several studies have focused on identifying general user requirements such as timeliness, completeness, visibility and quality of data (Lourenço, 2015; Van Velzen, Van der Geest, & Ter Hedde, 2009; Jaeger, Bertot, & Shilton, 2012). However, this may not be enough given the limited use of open government data for democratic purposes (Worthy, 2015; Attard et al., 2015). A general shortcoming of current approaches to open data is that they do not conceptualize

the diverging roles that citizens have (e.g. individual citizens, members of civic society, and the private sector), nor the roles of government (e.g. public administrators, politicians, managers) in democratic processes and focus on the information they *ask* instead of the information they *need* to actively contribute to democratic processes.

In response, this article argues that next to these general user requirements we need to take into account the context of open data use that includes people and their relations as well (Kuuti, 1999) to assure that an open data platform facilitates user activities in varying democratic settings. Often this context of broader social forces and structures that influences the interaction between users and information technology is left unexamined (Engeström, 2005). Modelling this context into open data platform design is crucial to develop a platform that works for users in their specific democratic context. A contextual approach is needed to model the interplay between social actors, their stakes in open data, their roles and motivations, constraints and systems of ideas.

The aims of this study are threefold: (a) a better conceptual understanding of the relation between open data and various types of democratic processes, (b) a better explanatory model of the challenges for open data use for democracy and (c) a basis for context-sensitive design of open data platforms. Based on literature on democracy, monitorial, deliberative and participatory democracy are identified as three distinct processes that influence the use of open data. For each democratic process we will explore the expected role of citizens and of government.

In addition, to model the activities of citizens and of governments, we use Activity Theory. Activity Theory can be used to understand human activities within social and organizational contexts (Ojo, Janowski, & Estevez, 2011). It has been used as a framework for human-computer interaction research (Kuuti, 1996) and can therefore

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help us understand how open data can contribute to the flow of information between citizens and government in a democratic context.

Based on these two strands of literature, we develop the Democratic Activity Model of Open Data Use (DAMODU). This is not a model in the theoretical-deductive sense, with derived hypotheses and quantitative testing, but an explanatory heuristic model that can be used to better understand open data practices in a democratic context. To show the value of this model, an exploratory multiple case study is conducted that focuses on varying issues: Budget Management (Prato, Italy), Capacity Building (Dublin, Ireland) and Population Decline (Groningen, The Netherlands). These cases illustrate three different democratic processes: monitorial, deliberative and participatory. It shows respectively how open data can contribute by allowing citizens and government to monitor and analyze public problems, how open data can contribute to deliberation about public problems and how open data can contribute to joined action in finding solutions for public problems (Verhulst & Young, 2016; Noveck, 2015).

The DAMODU contributes to the literature in the following ways. First, unlike the user requirement studies, the democratic context is explicitly modeled. Our design approach positions users in democratic contexts as a starting point for the design of open data platforms. Second, it shows the interplay between social actors in the provision and use of open data, what is at stake for them, their roles and motivations, constraints and systems of ideas and how this influences the use of an open data platform for democratic processes. Third, this context is not just seen as one between government and individual citizens but between government and networks of citizens, communities that collectively attribute meanings to the information.

In the next section the DAMODU will be developed based on Democratic and Activity Theory. Following, the research method is described and the results of the different cases presented. After analyzing and discussing the different cases, conclusions are drawn that provide insights in the context of open data use.

2. Democratic Activity Model of Open Data Use (DAMODU)

2.1. Democratic processes: Monitorial, deliberative or participatory?

Democracy is not a one-dimensional concept (Strömbäck, 2005) and therefore this study highlights the variety in democratic processes and the differences in information requirements. In this study, three interconnected democratic processes are distinguished: monitorial, deliberative and participatory democracy (Meijer, 2012).

2.1.1. Monitorial democracy

The idea of a monitorial democracy is drawn from the work of Keane (2009) and Schudson (1998). The basic premise behind a monitorial democracy is that government obtains a mandate from the people to rule. The way this mandate is used is monitored and the mandate can be revoked if it is abused. It is a form of democracy in which power-monitoring has perpetrated government and society (Keane, 2009).

The role of citizens in a monitorial democratic process can be characterized as being well informed, watchful and holding government accountable. They engage in surveillance without really being pro-active responders. “The monitorial citizen is not an absentee citizen but watchful, even while he or she is doing something else.” (Schudson, 1998, p. 311). This implies that citizens do not know all the issues all the time but that “...they should be informed enough and alert enough to identify danger to their personal good and danger to the public good” (Schudson, 2000, p. 16). Monitorial citizens are aware that they need to keep an eye on politics but allow intermediary institutions to play the most important role. The media in this context serve as a “fire-alarm” (Coleman & Moss, 2012, p. 2) to alert citizens about matters requiring urgent attention. The focus is on what information citizens need in order to hold officials accountable in elections (Zaller, 2003). Monitoring is crucial for reducing corruption and agency-drift: if citizens

can monitor how officials spend money and allocate resources they can check whether this is in line with legal rules and the will of the people.

The role of government in a monitorial democratic process is to disclose information, either proactively on its own initiative, or reactively based on a freedom of information (FOI) request (Meijer et al., 2012; Ruijter, 2016) or for instance in line with the European Directive (2013/37/EU) on the reuse of public sector information (Janssen, 2011). An open data platform could contribute to strengthening access to government information so that citizens are able to scrutinize government performance.

2.1.2. Deliberative democracy

Deliberative democracy highlights that an open debate is needed to find collective solutions to public problems (Habermas, 1989). Deliberation, rather than voting, is seen as the central mechanism for political decision-making (Meijer, 2012, p. 305). Deliberation is focused on opinion formation and the general will (Noveck, 2009, p. 39). Viewpoints and information from a variety of angles are needed to discuss different options and to find an optimal solution.

The role of citizens is one of a partner in deliberative processes. Citizens need information to see what is going on inside government organizations and they need to participate to voice their opinions (Meijer et al., 2012, p. 11). Citizens are discussing their views about what government should or should not do. This implies that citizens are indirectly related to decision-making and action (Noveck, 2009). Civil society produces public opinion which filtered through the mass media, influences the government agenda (Noveck, 2015, p. 93). Furthermore, citizens need to be interested and engaged from the viewpoint of this process (Strömbäck, 2005). It requires commitment to the public cause, which according to Van den Hoven (2005) can be time consuming and the average citizen might not always be willing to deliver. Motivational factors to participate differ (Wijnhoven, Ehrenhard, & Kuhn, 2015). When citizens feel that their contribution is really meaningful they will be more motivated to engage. The input from more citizens is expected to result in better-argued and more legitimate government policies.

The role of government is to invite citizens to present their opinions and perspectives on issues. This can be done offline by organizing town hall meetings, or online. ICT's and open data could strengthen a deliberative democracy by creating a level playing field for all participants in the public debate and engaging citizens (Van den Hoven, 2005; Meijer, 2012). Governments coordinating a platform should examine every suggestion and give precise feedback why certain ideas or parts of it can or cannot be implemented (Wijnhoven et al., 2015). Participants are more likely to engage if they believe that their ideas and suggestions will be implemented correctly and with caution (Wijnhoven et al., 2015, p.39). An open data platform could contribute to strengthening deliberation between citizens, and between citizens and government, for instance by offering a virtual discussion platform that allows conversation and dialogue (Dalakiouridou, Smith, Tambouris, & Tarabanis, 2012; Noveck, 2015)

2.1.3. Participatory democracy

A participatory democracy puts an emphasis on joined action and collaboration. The basic idea of a participatory democracy is that citizens do not only give a mandate to government but they can also actively engage and collaborate directly in the solution of societal problems, the production of services and policies and the implementation of policies in a variety of policy domains (Strömbäck, 2005; Meijer, 2012). Collaboration occurs throughout the decision-making process (Noveck, 2009). It “catalyzes new problem-solving strategies, in which public and private sector organizations and individuals solve social problems collectively” (Noveck, 2009, p. xiii). Collaboration is necessary to generate creative solutions to challenges and to share the work of oversight and accountability (Noveck, 2009).

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