Challenges and Benefits in an Open Data Initiative – A Local Government Case Study of Myths and Realities

Ulf MELIN[a,1]

[a] *Linköping University, Department of Management and Engineering, Sweden*

Abstract. This paper investigates the myths and realities of open data at local government (a focused municipality) level. There are many expectations related to open government data (OGD) covering e.g. public transportation, car parks, public committee minutes and air quality measurements and the effects of more open public agencies and commercial possibilities, together with citizen benefits. Expectations are often uncritical and expressed in terms of rationalized myths. The purpose of this paper is to investigate myths and realities in a case study and to present lessons learned from focusing such dimensions in an ongoing and emerging local government OGD initiative. This study confirms previous research on open data myths, challenges and benefits from a local government perspective. The conclusions also illustrate three important findings directed to the existing body of research regarding the importance of alliances of stakeholders in OGD initiatives, aspects of heterogeneous organizations launching open data and reflections on the division of labour between public and private actors when handling different communication channels. Implications for research and practice are also outlined together with limitations and further research.

Keywords. open data, open government, myths, challenges, benefits, local government, municipality.

1. Introduction

Open government data (OGD) includes various data sets that are made available by the public sector in order to stimulate third-party (commercial and non-profit organizations) development of new information technology (e.g. apps for mobile devices) and services for a wider audience. Users may be citizens or companies. There are many contemporary efforts launching open data internationally also with the intention to create an open government (increased transparency and democracy in the form of involvement and participation) [15, 26]. The accessibility and openness that OGD is expected to achieve is expressed in several national digital agendas and policies, including the EU and Sweden. Nearly 40 billion EUR each year is expected to be the result of making the open data available from public administration. There are many expectations related to OGD applications [e.g. 12] in different areas covering e.g. public transportation, car parks and air quality measurements and the effects of more open government agencies and commercial possibilities, together with citizen benefits as expressed above. According

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[1] Corresponding Author: Ulf Melin, Linköping University, Department of Management and Engineering, Information Systems, SE.-581 83 Linköping, Sweden. E-mail: ulf.melin@liu.se.

to contemporary e-government research on open data, expectations are not seldom rather uncritical and expressed in terms of rationalized myths [6, 20, 23]). The visions, expectations and rhetoric about the usefulness of OGD can be mirrored in in early e-government and public e-service research of hopes and glory, not meetings expectations and benefits as planned [17, 21, 22, 27].

Efforts including OGD contains several important strategic and day-to-day choices about what data sets that should be published, commercial or democratic viable initiatives and for which user groups. Working with OGD is also a question of a division of labour between the actors from public and private sectors; what data sets public organization should be responsible, what kind of e-services based on those data sets, and for which can we rely on external actors to develop? Studying such work to examine the myths and realization of the OGD is relevant from a theoretical and practical perspective. Myths about the publication of the OGD, without restrictions, automatically creating benefits everyone can and have the ability to use are wide-spread [23]. Myths in general, and in an OGD setting, can be described as: "[…] myths are formulated to reflect on the gap between the promises and barriers of OGD. A myth is a traditional or legendary story without a determinable basis of fact or evidence. The essence of a myth is that its existence is fictional or unproven." [23, p. 263]. In this setting it also seems to be taken for granted that there is an interest in the reuse and utilization of open data [6, 20]; for example to reduce the digital divide. However, myths also have an important role in policy-making [7, 28], so they are not only obstacles or fraudulent lies; myths can be generative in development work. But not without risks. Risks or challenges with OGD has been described as the dark side of open data by e.g. Zuiderwijk and Janssen [40] violating privacy, misuse and misinterpretation of data.

Based on that we can see that a more critical strand of OGD research is evolving [20, 31, 40]. In recent open data research the one-way traffic or street in focusing on the publishing open data (the supply side) – and not the demand or the whole ecosystem – have been questioned and discussed [12, 31]. This paper acknowledge a critical stance towards OGD, and investigates challenges and benefits when working with open data at a local government level. The local level has received less attention in OGD research, and is therefore relevant to study.

There have been several other calls for more research on open data (e.g. [23]) and challenges are put forward as one area to investigate more [31]. Following this route there is also a need to: "[…] demystify data and its importance in sharing to influence development". [31, p. 427]. This paper is one attempt to demystify OGD and to contribute to the ongoing research on OGD in this strand.

This paper investigates an emerging OGD initiative in a Swedish local government organization. Few studies are focusing a Swedish context and a local government level [20] and there is a need to generate more knowledge in this domain. The purpose of the paper is to critically analyze the emergence of an OGD initiative focusing the role of myths, challenges and benefits in the process of triggers for the initiative, choosing data sets and publish local government open data. Research questions asked are: what is the role of myths in OGD initiatives? What lessons can be learned from this situated local government case study vs. the emergent body of literature covering OGD myths, challenges and benefits? The contributions of this paper has implications for future research on OGD as well as practice and is expressed in terms of lessons learned.

The remainder of this paper is organized in the following way: In Section Two previous research on open data are introduced and discussed. The research approach is described in Section Three. The reflexive analysis is described in Section Four (based on

empirical data in subsection 4.1-4.3 and put in the light of theory in 4.4). In Section Five the paper is concluded, followed by limitations and further research.

2. Previous research on open data

Below previous research on open data are summarized, followed by a focus on myths. The literature on challenges and barriers as well as benefits and possibilities is also reviewed. This review ends with an outlook of emerging holistic approaches on OGD.

2.1. Open government data and myths

Emerging research report challenges with open data in the public sector [11, 24, 25, 41] along its life cycle [4, 6] and also in ecosystems [12]. The phenomenon of open data is described by Barry and Bannister [6, p. 129] as: "All stored data of the public sector which could be made accessible by government in the public interest without any restrictions on usage and distribution".. Like OGD introduced above, e-government in general also contain significant challenges in terms of the balance between internal efficiency and citizen benefit, multi-operator problems during development, effects, digital divides and audience targeting [5, 13, 19, 21, 27] . Research on open data is emerging at present as presented in the introduction above, and are relatively few globally and clearly few if we focus on a Swedish context, and local government level, which is described by Hellberg and Hedström [20] and by actors from government and consultancy firms [33, 35].

   Myths in open data are represented by simplified and sometimes idealized views (and even seductive tales) of the benefits of providing and using open data or e-government in general [7, 23]. In as study from 2012 Janssen et al. [23] confronted benefits with barriers and derived five myths in their study on the ministry level in the Netherlands. Myths discovered are describing how important open data is and how simple it is to use for everyone (ibid.). Using and practicing myths in relation to open data development is a balance because there are risks involved. An uncritical repetition of the same myths [20, 23] can result in a situation where other visions and a good potential surrounding OGD remains unrealized [6, 9].

   In general, myths can inspire collective action and common-making [39], but they also "mystify" processes. Thus the myths to be double-edged sword with seductive stories and expectations to gather around or as any fraudulent based on questionable grounds (ibid). It seems to be an area, like IT field and practice in general, with a large measure of fashion, hype and "follow-john-behavior" [1, 29, 38].

   The myths around open data can be summarized [23, p. 264 ff.] in the following main themes: "(1) The publicizing of data will automatically yield benefits, (2) All information should be unrestrictively publicized, (3) It is a matter of simply publishing public data, (4) Every constituent can make use of open data, and (5) Open data will result in open government. In a later study of myths related to OGD in a Swedish context [20] the local government level is focused. They focus on efforts to realize an open government agenda using open data and propose a sixth myth; the public interest in the reuse of open data. In Hellberg and Hedström's [20] study it is concluded that commitment and incentives are major issues when focusing the reuse of OGD, and that we should not take citizens interest, resources and competences in open data for granted.

2.2. Challenges and barriers related to open government data

Challenges or barriers linked to OGD are described and categorized from an institutional theory perspective for example by Janssen et al. [23 p. 261], focusing task complexity, use and participation, legislation, information quality and technical aspects. If we for example look at the institutional dimensions it is related to barriers from the supply side (the data provider's point of view), whereas task complexity and use together with participation are related to the demand side (the user's perspective). Challenges from a user perspective are also studied by Zuiderwijk et al. [41], and they describe the following: fragmentation of data, lack of access to data, lack of interoperability, and difficulties in processing data. Janssen et al. [23] also reports on the lack of insights related to the users, but from the supplier side. From the suppliers' side they also conclude that the incentives stimulating OGD and the use of it is important, together with the risks associated with the publicizing of OGD. This deserves more attention from researchers according to them.

Another challenge related to OGD is that it is hard to calculate ROI based on the fact that it hard to foresee the potential application based on the publishing of OGD – so is the "[…] possible "killer" applications." [23] p. 260]. There is also a pedagogic challenge reported which makes open data, e.g. for decision makers, even more abstract, the value of it. A value that becomes realized first when it is used (ibid.). Studies of open data practices reports that: "Managers and other public servants often have the tendency to avoid opening their data, as this would provide the public with new insights which might in turn result in critical questions." [23, p. 258]. This hinders new development and innovation from taking place and can be interpreted from an institutional theory perspective [23, 29]. Janssen et al. [23] also described the state of OGD as of 2012 as poor usability of open data, lack of feedback processes and improvement loops, and overall weak stewardship principles. A publishing view is also often taken, not a user or usage perspective [23].

2.3. Benefits and possibilities related to open government data

As described recently by e.g. Dawes et al. [12] expectations for substantial benefits of OGD are high. Investments are also considerable in this area in terms of number of open data portals and programs (ibid.). Benefits are related to for example better decisions, new and even innovative products and services, paired with transparency and increased accountability [10, 12]. Possibilities or benefits of OGD are studied and compiled by e.g. Janssen et al. [23]. They clustered benefits in different themes: (1) political and social, (2) economic, and (3) operational and technical benefits. In this study, political and social benefits were viewed as the most important category

In the study above from the Netherlands on a ministry level most of the respondents expect that OGD can strengthen government accountability, build trust among citizens, and to improve their satisfaction with government work.

2.4. Holistic open data approaches emerging

In order to realize the benefits outlined above and to overcome some of the challenges or barriers there are more holistic approaches described, such as a life-cycle perspective [4], stakeholder perspectives on open data [6] and an ecosystem approach [12] resting on a sociotechnical perspective. Dawes et al. [12] propose a model in order to try to catch

some of the complexity involved in OGD programs and its existence in a "[…] multi-actor physical and institutional environments. They combine organizational, human, material, and technological aspects in a dynamic interplay […]" [12, p. 6 f.].

Janssen et al. [23] also broadens the scope when concluding that open data is not a homogeneous phenomenon; open data have a diverse nature, and different datasets have different benefits and different barriers. On an overall level open data is also an example of a division of work and responsibilities among public and private actors [30].

3. Research Approach

This research is based on a single qualitative, interpretative, case study [37] of a project 2014-2016 aiming at developing a national platform for OGD (The NODS [National Service for Open Data] Project). Several actors are involved in the project; a local government actor (a Swedish municipality) working with open data provision within the organization, but also with the intention to take a lead in the region and to stimulate national OGD development, a consultancy firm developing IT solutions for case management and secure exchange of information in the public sector, and a research partner in a triple-helix model (e.g. [16]). The dimensions of OGD studied in this paper is focused on the municipality working with and OGD initiative. The point of departure of this research paper, is to apply a critical perspective towards open data [3] focusing the municipality in the project setting.

The empirical data in the project is based on eight semi-structured interviews (based on an interview guide) and open-ended discussions, observations and participation during 15 project meetings and documents (e.g. steering documents for managing OGD). A subset of the empirical data generated in the studied project are focused in this paper. The study covers the context, process and context [32, 36] of the development of open data. Among the different roles and respondents interviewed are the following IT consultant, IT strategist, open data project leader, open data coordinators (national level), two CIOs, and four civil servants. All interviews were audio recorded and transcribed in whole or partially, depending on the focus and density of the empirical data. The analytical process has a reflexive nature [2], were performed iteratively in which the interview transcripts were analyzed several times resulting in inductive coding (e.g. themes [keywords] from OGD provision and links to triggers, challenges and benefits [34]), and then confronted with previous studies used as a theoretical lens. The role and use of the theory can therefore be classified as an ongoing process of the analysis (cf. [14, 37]). The scope for and process of the open data literature review can be characterized as a hermeneutic process [8].

4. Analysis

The analysis below are structured in the following overall themes; 1) triggers for OGD initiatives, 2) challenges for OGD initiatives, and 3) expected benefits of and possibilities related to OGD initiatives. For every theme respectively key aspects – keywords – are generated to summarize the content and findings. These keywords are then put in the light of the previous research as a part of the reflexive research approach (above).

4.1. Triggers for open government data initiatives

The empirical data from the case study, interviews and meetings, shows that an alliance between politicians, civil servants and IT professionals within the municipality favours the OGD initiative and can serve as a trigger to start the work with open data. When this alliance is in place activities around OGD are starting to happen.

Another important trigger for OGD to happen in this case was the decision makers' willingness to create a first mover advantage. The willingness to be modern and forward thinking, and to promote an open government were considered as taking part of a competition among other municipalities. These ideals were shared, and advocated by the IT strategist and one politician taking the initial initiative and making the first move launching OGD. The initiative were launched partially to boost rankings and legitimacy as a part of an interpreted contest as stated above. The values of transparency and openness are also echoed in the interviews and linked to the aspect of visibility above – to let the municipality to "shine" from external and internal stakeholders' point of view.

The fact that a citizen timely also suggested that the municipality should work with OGD is also an important aspect that triggered the initiative and contributed to the act of creating legitimacy through this initiative. In order to make the OGD initiative happen the stakeholders mentioned also navigated the initiative through the municipal bureaucracy by plans (incl. a formal steering document) and decisions aligning with structures and processes in place. Knowing the internal structure and processes in the organization is important as a prerequisite to make things happen and "survive" within the organization. The key aspects, expressed in terms of keywords, regarding triggers for OGD initiatives are the following: an alliance of a politician, civil servant and an IT-strategist, first mover advantage, transparency, openness, external and internal legitimacy, compliance with internal bureaucracy.

4.2. Challenges for open government data initiatives

The sometimes abstract external and even internal benefits described above are also a challenge with the OGD initiative to deal with within the municipality. From the different departments within the organization point of view, one common concern when investing time and money in publishing open data is the rather straightforward question:

"Who will benefit from this?" (IT Strategist, March 09, 2015).

This is also expressed by the project leader interpreting the internal perspective:

"The municipality is not exited by open data." (Open data project leader, February 26, 2015)

There are also concerns and objections raised of OGD being possible to be misused by third parties and that a misuse will backfire against the internal organization and its genuine public values (e.g. trust and accountability). The risk for misuse is also linked to the concerns about the ownership of OGD within the organization; is a department or the organization as a whole responsible for and owner of OGD sets? What happens if anything goes wrong when third parties use OGD – who is accountable?

There were civil servants from different departments having questions and concerns early in the OGD process, but gradually more of them are beginning to identify the potentials of OGD. Based on this, challenges seems to be more evident early in the process of implementing open data initiatives, than over time – a process with inertia. Again, there is a challenge to build initiatives based on implicit and imagined needs for

OGD and there is a clear dependency on enthusiasts and supporters locally together with positive examples, or even myths, to proceed the with the work.

The process of publishing OGD, open up the organization, and make it easy for external actors to retrieve OGD is also challenging traditions and norms within the organization. This can be illustrated as follows:

"[…] there should be 'a bit difficult' to get documents from the municipality." (Open data project leader, February 26, 2015)

Related to traditions and norms within the organization there is also some fear to make mistakes – mistakes that are more open, when opening up the organization and making different data sets available for external actors.

Choosing OGD and open data sets to publish is also a process that is challenging and not straight forward. The decision and selection process is described as follows:

"Sometimes an opportunity comes up [...] one must have very large eyes and ears." (IT Strategist, March 09, 2015)

This is a challenge, but at the same time also an example of an organization having an intelligence function being responsive towards external inputs and the creation of opportunities. The opportunity here is to have this kind of intelligence implemented in roles and processes, not being dependent upon certain individuals and their OGD enthusiasm. Another challenge linked to the need for institutionalized OGD processes is the ad-hoc processes within the municipality in the early work with open data:

"Now we shoot from the hip, keep a glow around it, and put as little time and energy on what we need." (IT Strategist, March 09, 2015)

Again, this doesn't have to be a problem or challenge per se, it can be rational, effective and attractive when taking initial steps in OGD initiatives, but in the long run a more solid and standardized process may be needed to create sustainable a lifecycle or an ecosystem around open data.

There are arguments in the focused municipality that there is a need to focus on data that is already available within the organization and that is checked and non-controversial. This is a form of convenience sampling, choosing data that is already "washed", "cleared" and legally OK. In this sense actors within the organization consider the publishing of OGD as yet another channel for publishing data besides the information already available on their website, in e-services or apps provided. The availability of OGD is also linked to what is perceived as having a good cost-benefit ratio – to publish data with the smallest effort and produce the greatest (possible) ratio (benefits for external and/or internal actors) as illustrated in a citation above. There are also concerns related to the Personal Data Act regarding what of data that can be published or not as open data. This is a challenge making the work with open data more cautious than it may be, just to make sure to not violating rules and regulations, that also can hinder or at least postpone possible ROI. At the same time there are insights around challenges related to the present OGD work and that the work around the publishing can be more mature and less manual:

"[...] But it is also resource intensive and it would need more resources to pursue." (Open data project leader, February 26, 2015)

The argument goes back to the willingness to seize opportunities, trying to realize first mover advantages and have OGD available, instead of performing thorough analyses first and then publish the most attractive and "best possible" data sets. Based on this the possibilities identified by the dominant actors in this cases and the focused municipality overrules the challenges.

Another interesting dimension is the system owners who are worried about their internal IT systems. Their worries are connected to the operations and performance of

the systems when OGD are exported. In this challenge, the system owners concerns about the load and overall performance (e.g. the risk of longer response times for users when OGD export from the same systems are frequent) together with concerns about security opening systems for external use.

Another challenge is related to the IT system portfolio within the studied municipality with technical platforms that often are locked to certain IT suppliers and unique formats. The goal is rather the opposite in the long run; to have open systems and standards for providing OGD.

For some departments there are also commercial counterarguments for working with the publishing of OGD. This is evident when e.g. GIS data is sold in other channels (and open data is at risk of a reduction in revenue for the business). There is also a huge variety within a municipality taken into account that different departments are specialized in their line of work and handling different types of errands (linked to e.g. education, care, roads, environment etc.) so the organization is diversified and heterogeneous. There are also companies run by the municipality that have a clear business oriented view on their work, and financed partly by data ownership, not willing to open up and publish OGD sets without commercial concerns.

<u>Keywords from the empirical analysis regarding challenges:</u> abstract internal and external benefits, risk of misuse, unclear ownership, accountability, opportunity seeking, ad-hoc processes, yet another communication channel, load on internal IT systems, locked IT systems, commercial counterarguments, heterogeneous organization.

4.3. Expected benefits of and possibilities related to open data initiatives

Except from creating benefits and possibilities described above related to trigger the OGD initiative (e.g. rankings vs. other organizations), being innovative, an open municipality and responsive towards citizens' needs and expectations internal benefits are expected. Besides being described in interviews and meetings this is also described in the focused agency's steering document:

"The purpose of open data is to make data available that the municipality prevails for the general public. Companies and individuals have access to data in raw form without any restrictions. The hope is that open data will result in the municipal business advantages, utility and value for citizens and businesses."

One example of expected internal benefits are the creation of the possibilities of using internal day-to-day and development resources more efficient based on communication channel strategies. Through the OGD initiative there is an intention to reduce the load and administrative burden on other communication channels, e.g. questions from journalists and citizens regarding statistics etc. to street level bureaucrats so fewer contacts (external, e.g. by telephone) is expected, but not yet proven. This leads to expected cost savings based on fewer contacts above, but also less investments in other channels such as e-services handled and provided by the municipality covering the same area and addressing similar needs from external parties. The other side of this coin is that OGD initiatives internally are competing of the same development resources as other projects and is said to have an even more uncertain ROI than other IT based initiatives. This side of the coin also represents a challenge for this OGD initiative.

One recurrent theme in the interviews and discussions within the municipality is the reuse of open data from an internal point of view. To get value back – possibly refined – by publishing OGD available for a third party, that refine the data and adds value and then use within the municipality again. One example is the air pollution measurements

where external actors adds value linking OGD to other data sets which represents a more multifaceted view of the phenomenon. There is also a consensus that citizens can benefit from publishing and making OGD available. There are arguments that citizens even can be empowered by OGD. There are also expected benefits that part of the information (or data) management will move from the municipality to the citizens and their interests and purposes. A kind of outsourcing model – a different division of labour. Last, but not least, there are expectations that business opportunities for local and regional entrepreneurs and innovation will appear.

Keywords summarizing benefits/possibilities for OGD: transparency, openness, productivity and efficiency, reuse, citizen empowerment, outsourced data management, and the creation of business opportunities (internally and externally) and innovation.

4.4. Concluding analysis – findings

Below the analysis is concluded highlighting the findings and putting them in the light of previous research on open data. Table 1 shows that the findings are in line with much of the previous research on open data from other national contexts (such as the Netherlands and the U.S. referred to in the theory section).

Table 1. Case study triggers, benefits and challenges in the light of previous research

Aspects of OGD initiatives	Case study key aspects (keywords) (4.1-4.3)	Previous research	Comments
Triggers	An alliance of a politician, a civil servant and an IT-strategist, first mover advantage, transparency, openness, external and internal legitimacy, compliance with internal bureaucracy.	First mover advantage (legitimacy) in line with several other studies of open data benefits [23] and studies of legitimacy in general [1, 29, 38] from an institutional theory perspective.	An alliance between stakeholders important, not found that evident in previous studies, together with the compliance with internal bureaucracy to "survive" as an initiative.
Challenges	Abstract internal and external benefits, risk of misuse, unclear ownership, accountability, opportunity seeking, ad-hoc process, yet another communication channel, load on internal IT systems, locked IT systems, commercial counterarguments, heterogeneous organization.	Barriers and challenges are reported in other studies on open data; also in terms of myths. The abstract benefits and abstract ROI [20, 23, 31, 40]. Fragmented OGD on local level can also be related to general studies on central government level [41].	This study reports the load on internal IT systems as on challenge not found in previous literature as well as the highlight on a heterogeneous local government organization (with functions of an authority and at the same time including profit companies).
Expected benefits and possibilities	Transparency, openness, productivity and efficiency, reuse, citizen empowerment, outsourced data management, and the creation of business opportunities (internally and externally) and innovation.	In line with several other studies of open data benefits [10, 12, 23], for example the latter study representing political and social dimensions, economic as well as operational and technical.	The rhetoric or even myths around OGD is evident in the studied municipality in a Swedish context. This study highlights the view of OGD as an alternative to e-services (a part of a service channel choice).

The comments made in Table 1 above can inform previous open data studies. One finding is the alliance of actors and the compliance of the OGD initiative with the internal

bureaucratic structures within the municipality. An alliance of a politician, a civil servant and an IT strategist at the local government level can nuance and complement the picture described by Janssen et al. [23] saying that managers would not publish OGD. It is also important to highlight the fact that an organization handling OGD are heterogeneous. So is the open data as such [23]. This is evident in this case on local government level.

On a general level open data is also a question of private and public actors together with how to divide the division of labour. Who should develop and control the e-services and apps based on OGD? The municipality (as is the case with traditional e-services) or external parties (a market solution). In some sense, based on the case study, public production of a service is outsourced to private actors, when choosing not to develop internal e-services when choosing to launch OGD sets instead. On one hand this is a source and an opportunity to make business opportunities and commercial sustainable services for citizen and society. On the other hand in can be viewed as a way of outsourcing the production of services, and partially the responsibility from services and apps based on OGD sets to happen – a market solution.

Several of the myths investigated by Janssen et al. [23] are echoed in this study (Table 1) on a local government level as opportunities and found evident.

5. Conclusions

This study confirms several myths, benefits and challenges described in previous studies on open data as described above. This is interesting since that there are few studies so far of OGD initiatives in a Swedish context and on a municipal (local government) level. The rhetoric, myths, benefits, and challenges seems to have a pattern, not linked to a particular national context or governmental level – the ideas travels around and is a part of an open data fashion wave, hype and "follow-john-behavior" [1, 29, 38]. What this study also highlight and contribute with, besides confirming studies above, and putting it into a Swedish local government context, are three major lessons in terms of:

- The importance of alliances between actors to trigger and realize OGD initiatives and to move beyond myths, to search for opportunities and to overcome challenges as a part of turning OGD into a reality.
- The government organization handling OGD is heterogeneous.
- OGD is also a question of private and public actors together with how to make a certain division of labour when developing e-services or apps based on open data as a part of a channel strategy.

One implication for research from this study is that the pattern that managers and public servants have a tendency to avoid opening data and new structures [23] can be partially questioned, or at least nuanced, based on this case study. The studied local government organization is heterogeneous and contains both supporters and opponents for OGD, depending on their position, type of department, norms and values and line of business. This organization being located on the local level is rather different than e.g. ministries, more focused in certain areas, studied by Janssen et al. [23]. At the same time different data sets are heterogeneous as concluded above, so this also goes for the type of data, which is line with previous studies describing open data as diverse [23]. There are also examples of the reuse of OGD that can change structures and division of labour on one hand, but there are also examples of OGD initiatives not changing structures – rather reinforcing them [23].

One implication for practice based on the present study is that earlier reported myths, challenges, and possibilities on OGD are confirmed in general, and in a Swedish context and at a local government level in particular. Based on a life-cycle perspective on open data it is also important to discuss different phases of open data provision [4]. There is a challenge to know the user demands and value beforehand, and therefore a provision perspective on providing open data may be necessary – at least in early steps, and later on focus on ROI, value and selection. A life-cycle perspective is not explicitly applied in this paper, but is an opportunity for further research also based in the findings above highlighting the large dependency on certain individual supporters and alliances from an institutional theory perspective. This opens up for future stakeholder oriented OGD studies within the e-government field [5, 6, 18] and applications of ecosystem approaches described by e.g. Dawes et al. [12]. Another limitation in this study is the focus on a single case study in Sweden. It is a strength to focus a single case when doing in-depth and longitudinal studies, but the comparative dimension is therefore weak besides to the analysis based on previous studies. Explicit comparative studies can definitely inform studies like this and provide important insights. To focus actors who use open data is also important when broadening the scope. Many studies have a supplier perspective as reported above. Further research in the project that this paper is a part of is to study external parties using or not using municipality generated OGD.

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