

Why People are Reluctant to Share Data, While They like to Benefit from Data

— Case Study to Analysis the Difficulty of Involving Citizen
as Major Stakeholder in Public Policy —

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1. Introduction

This paper investigates the question of how data would be collected from and shared among stakeholders, then utilised for policy making as well as implementation, through a failure case and a case with a certain success. The research questions are; 1) why it is not easy to collect expected data from the stakeholders as has been designed; 2) why it is not easy to share collected data among major stakeholders, often related ministries, departments, agencies, and civil society; and, 3) why we often

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fail to use the existing information, including data to design and/or implement public policies?

The paper first employs literature review on the related fields of researches, including psychological issues of stakeholders involved in the process as well as trust issues toward various actors and institutions, which strongly impact the willingness of stakeholders. It also takes into account of literatures exploring cognitive limitation on understanding of stakeholders in dealing with data and information (Simon, 1982; Eppler and Mengis, 2004; Etzioni, 2010; Porumbescu, 2015), because of complexity (Sweller, 2010), and structure (Reber et al., 1998; Winkielman et al., 2003).

The research, then, explores two case studies, both related to sport and well-being policy area in UK. The first, the ticketing data, which was collected during the London Olympic Games in 2012, with an innovative goal to use it to link with data on physical activities and health conditions, aiming to improve the well-being of the citizens. However, in reality, the data has been not utilised fully to design public policy related to health, well-being, and physical activities of the citizens. The second case, which is a kind of spin-off project from the first, is “Open Active”, which uses data to get people active. Funded by Sport England and Open Data Institute, the project has been implemented by Department for Digital, Culture, Media and Sport of UK government and has been widely recognised as a success. The second, very limited in its objective compared to the first, has been successfully implemented and has registered certain results.

The paper concludes with findings from two case studies, discussion on these findings in relation to the research questions, and finally pointing out remaining issues for possible future researches.

2. Methodology and Research Design

This research adopts qualitative analysis, including analysis of primary documents, mostly policy documents of government agencies, and semi-directive interviews to key stakeholders of the two cases. There is a limitation of single case study: however, these cases well represent the research questions to provide preliminary investigation and to generate hypotheses for further studies.

In order to understand the involvement of citizen into open data, there are several essential concepts to be explored. Furthermore, most of the literatures on the topic investigate in conceptual manner, while there are few empirical researches. Thus the paper first explores several concepts through literatures and then analyses two cases of UK government. Regarding the case study, which is a qualitative research, the author examined government documents, including policy papers and national plans, while interviewing several key actors. The author and her research partners conducted more than 20 semi-structured interviews to the key actors between November 2016 and February 2019 in various occasions. The interviews were conducted without recording but with detailed transcriptions, in order to encourage interviewees to express freely their opinions and views.

The aim of this research is to investigate whether Big Data and/or Open Data improved policy making and how citizens are involved in the process. The research approach is a single case of the UK government (Yin 2014). Data were collected indeed from two sources: semi structured interviews to key actors and written documents available in the public domain. Case study research is appropriate for this research

as it makes use of multiple sources of evidence in order to create a picture of the phenomenon under investigation and is methodologically appropriate when exploring complex issues, those that occur over an extended time period (Gratton & Jones, 2010) or when researchers have little or no influence on the event being studied (Yin, 2014) such as in this research.

Document analysis is appropriate in this case based research as documents are a rich source of data and in this instance they provided valuable primary data. Documentary analysis of strategic plans, policy documents, and government reports contributed to the understanding of the case study in three ways. First, the document analysis allowed the context for the case study to be understood, prior to the interviews and data collection. It also provided a historical account of the open data policy in UK. Finally, using document analysis also allowed for triangulation of data obtained through the interviews.

Information used in this paper is based on the interviews conducted to the followings among others conducted during the same period, but not included directly:

- 1) Fliss Bennée, Head of Data Governance, Department of Digital, Culture, Media, and Sport,
- 2) Mark O'Neill, former Chief Digital Officer, Department of Education,
- 3) Mike Rose, Head of Business Development, Open Data Institute.

The paper is part of the results of a research on Big Data and Open Data in relation to evidence-based policy making in the area of sport policy, a research project awarded by Japan Society for the Promotion of Science (JSPS) entitled "Research on sport policy making based on Big Data: Olympic Games as a trigger" (Research ID: 18H00819 2018-

2023) and uses results from the previous research project, which was also awarded by JSPS grant entitled “UK-Japan comparison on Olympic Game and Sport Policy (School sport policy and regional sport policy)” (Research ID: 16K13004 2016–2018).

3. Literature Review on Transparency, Information and Understanding

When asked the reason why they are reluctant to share data with authorities, many people respond that they do not trust institutions and/or that they doubt transparency of those institutions. The problem is, that the trust is strongly related to the perception of transparency. Thus, the author conducted a literature review on transparency, then on information, and finally on understanding, which is related to the perception.

3-1. Transparency

Transparency has long been extolled as means of ensuring that public institutions function effectively (Hood and Heald 2006). This is because transparency constitutes a key means of reducing information asymmetries between government and the public (Stiglitz 1999). By reducing information asymmetries, transparency can empower citizens to better understand what their government is doing, thus permitting them to make decisions that more closely reflect their best interests and, in turn, fostering more accountable and responsive public organizations (Fung, Graham and Weil 2006; Hood 2010; Porumbescu 2015).

Many literatures have begun to examine the extent to which

transparency is actually capable of achieving the goals often attributed to it (Piotrowski 2014). Findings of these studies have helped to advance understanding of transparency by offering greater insight into how transparency relates to constructs such as trust in government (Benito and Bastida 2009; Grimmelikhuijsen and Meijer 2014; De Fine Licht 2014). However, despite these contributions, the field still lacks direct insight into how transparency affects citizens' understanding of government (Cook, Jacobs, and Kim 2010). Throughout the literature, transparency's ability to improve citizens' understanding of government is often assumed (Etzioni 2010). We indeed know very little about how transparency works because we do not know how transparency shapes citizens' understanding of their government and how this understanding in turn bears upon outcomes of interest such as trust in government.

3-2. Cognitive Limitations on Understanding

Citizens are said to possess an imperfect understanding of how they benefit from public policies (Koch and Mettler 2012). While transparency is proposed as a means of enabling citizens to better understand the benefits associated with a particular policy, expanding access to relevant information is only part of a broader solution to improving citizens' understanding of the benefits associated with public policies. In addition to improving citizens' access to relevant information, government must also work to ensure that policy information is understandable to a broad spectrum of the public (Porumbescu 2015). To do so, one must consider methods of presentation that are conducive to effective processing, understanding, and use of the complex information citizens are exposed to (Simon 1982; Eppler and Mengis 2004; Etzioni 2010). Along these lines, literature from different areas of psychology offers insight into

presentation strategies that can attenuate cognitive constraints and, in turn, bolster policy understanding. The paper draws upon insights offered by cognitive load theory (educational psychology) and processing fluency (consumer psychology).

Cognitive load theory explains that as the level of mental effort needed to process information increases, individuals' ability to understand the information embedded in the message decreases (Sweller 1998). Research on the determinants of mental effort has identified two factors as being of particular importance - structure of the message and complexity of the message (Chandler and Sweller 1991). Specifically, what this research illustrates is that messages that tend to be more complex and poorly structured increase levels of mental effort that must be expended in order to understand the message and, as a result, detract from understanding (Sweller 2010). Therefore, reducing complexity and improving the structure of messages communicating government information are two methods that may improve citizens' understanding of information, which might draw new insights into digital divide discussion.

3-2-1. Complexity

Complexity of a message is typically mitigated via two forms of omission (Van Merriënboer and Sweller 2010). The first form of omission entails reducing the quantity of information embedded in a single message (Sweller 2010). While reducing the amount of information can detract from an individual's ability to understand the issue in a comprehensive sense, it does increase the likelihood of them better understanding the limited information they are exposed to (Blayney, Kalyuga, and Sweller 2015). However, from a perspective of

government transparency, this strategy is problematic because it may detract from the public's ability to comprehensively understand a particular policy. Furthermore, and perhaps more importantly, this approach can also conflict with legal obligations that govern public disclosure. For these reasons, the second form of omission, which relates to reducing the level of detail with which the information embedded in the message is discussed, is preferred (Kirschner 2002). The assumption is that foregoing specific facts and figures when presenting new information will allow individuals to better focus their attention on the salient information in the message (Cook 2006). That is, using less detailed language allows individuals to exert less mental effort when processing the message and, therefore, improve their understanding of the information in the message (Ayres 2006).

3-2-2. Structure

The concept of processing fluency from consumer psychology provides a framework for understanding how the structure of a message can be manipulated in order to reduce cognitive load and facilitate citizens' ability to understand public policy (Reber, Winkielman, and Schwarz 1998; Winkielman, Schwarz, Fazendeiro, and Reber 2003). Processing fluency research has identified a number of ways in which the structure of a message can be altered in order to help audiences better understand the information they are exposed to (Reber, Winkielman, and Schwarz 1998; see Janiszewski and Meyvis 2001; Song and Schwarz 2008). Across the different manipulations, a common theme is that they all attempt to alter, in one way or another, the clarity with which information is presented, by for example, altering letter fonts or breaking a message into bullet points. Yet, despite the variety of

processing fluency manipulations, an important observation is made by Rennekamp (2012), who notes that, irrespective of the range of methods used to improve the structure of a message, “the corresponding responses from individuals are remarkably similar across different settings.” Specifically, improving the structure of a message to enhance clarity of presentation, irrespective of the precise manner in which it is done, is generally found to improve individuals’ ability to process and, ultimately understand, the information they are exposed to (Miele and Molden 2010).

3-3. Complexity and Structure of Information

Fung, Graham, and Weil (2007) caution that, because transparency is critical to enhancing citizens’ understanding of government, governments must find ways of presenting the information so as to avoid overloading citizens with information and evoking ‘policy confusion’ (O’Neill 2002). Cognitive load theory and processing fluency literature offer methods of attenuating information overload in order to ensure that citizens understand the government information they are exposed to. Among these methods, two have been identified as being of immediate relevance to the purposes of this study – detail and structure (Janiszewski and Meyvis 2001; Clark, Nguyen and Sweller 2006; Rennekamp 2012).

The logic underlying these initiatives is that more detailed accounts of government actions make it more difficult for citizens understand what government is doing. This is because greater mental effort must be exerted in order to process the detailed information being presented to them (O’Neill 2002; Mansbridge 2009). Prat (2005) adopts a game theoretic perspective to illustrate this point.

Prat explains that, due to cognitive constraints, an agent can

overwhelm the principal by burying a message's signal in lots of highly detailed information. Research related to cognitive load theory, echoes the sentiments expressed by Prat (2005), while also providing empirical illustrations. This line of research demonstrates across a variety of settings how different methods of enhancing the complexity of a message through, for example, the inclusion of more detailed information (facts and figures) consistently makes the message more difficult to understand (Sweller and Chandler 1994; van Merriënboer and Sweller 2005). The reason for this is that increasing the complexity of a message bolsters the mental effort needed to make (comprehensive) sense of the different pieces of information embedded in the message. Conversely, reducing the complexity of a message by using less detailed language can mitigate cognitive constraints, thereby increasing the likelihood that citizens will be able to understand the information they are exposed to.

In line with discussions of information overload, more detailed descriptions of a policy are likely to make it more difficult for citizens' to process the information and, consequently, detract from their levels of understanding. Therefore, in order to improve citizens' levels of understanding, government information that discusses policies in more general terms is likely preferred in that it is simpler, provided it offers an accurate overview of a policy.

A second important means of improving citizens' understanding of a public policy is to ensure that information is structured effectively. Here, structure is understood as the organization of information within a message (Sweller and Chandler 1994). Ensuring effective structure means the content of a message is organized in a way that reduces the mental effort needed to pick out key points embedded in the message (Song and Schwarz 2008). As mentioned, there are numbers of

presentation methods used to enhance structural fluency (Reber, Winkielman and Schwarz 1998). However, one common method of enhancing the structural fluency of a message is to organize content in a message into smaller distinct issue-specific elements (Paas, Renkl, and Sweller 2003; Sweller 2010). Bracketing content in this way results in consumers of the information exerting less mental effort when attempting to identify and consequently process salient aspects of the message (Van Merriënboer and Sweller 2005). By improving the structural fluency of a message in this way, individuals can allocate a greater proportion of mental effort to interpreting signals in a message and spend less time sifting through noise in the message to identify signals of interest. As such, the effect of policy transparency on policy understanding will be stronger when the structural fluency of the government information outlining the policy is high.

4. Open Data and Open Government: Theoretical background and concepts

Why Open Data has become important for governments and in policy making? Before answering to this question, some key concepts should be clarified.

Data comprises facts, observations and raw information. Data are, indeed, forms of information. The concept of data is itself worthy of book-length explication (Borgman, 2016); however, in order to explore how data are created, used and understood, it might be enough to define it by examples, such as facts, numbers, letters, and symbols (National Research Council, 1999). Data itself has little meaning if it is not processed (Monino and Sedkaoui, 2016). Indeed, the first set of

interviews conducted in 2016 showed that data collected without clear design how to use it for what purpose proved to be useless as information, because of this characteristic. Information, indeed, consists of interpreted data and has discernible meaning. It describes and answers to questions like “who?”, “what?”, “when?”, and “how many?” (Monino and Sedkaoui, 2016).

Open Data refers to the principle according to which public data (gathered, maintained and used by government institutions) should be made available to be accessed and reused by citizens and businesses, while Big Data is used when the amount of data that an organization has to manage reaches a critical volume that requires new technological approaches in terms of storage, processing, and usage. Volume, speed, and variety are usually the three criteria used to qualify a database as “Big Data” (Monino and Sedkaoui, 2016). Openness is a trend, which have changed relationship among stakeholders in all sectors (Borgman, 2016). Open models of government, standards, data, services, and collaborative production of knowledge have contributed to this transformation. Openness is claimed to promote the flow of information, the modularity of systems and services, and interoperability (Borgman, 2016).

Open Government Data is a philosophy and increasingly a set of policies that promotes transparency, accountability and value creation by making government data available to all (OECD, 2013). Public bodies produce and commission huge quantities of data and information. By making their datasets available, public institutions are believed to become more transparent and accountable to citizens. By encouraging the use, reuse and free distribution of datasets, governments are expected to promote business creation and innovative, citizen-centric

services. Open Government Data has been introduced and promoted by OECD (Ubaldi, 2013). The importance of data, especially Open Data in government is different from, for example, that in scientific community.

Data governance constitutes a framework of quality control for management and key information resource protection within an institution. Its mission is to ensure that the data is managed in accordance with values and convictions of the institution to oversee its quality and to put mechanism into place that monitor and maintain the quality. Data governance includes data management, oversight, quality evaluation, coherence, integrity and ICT resource security within an institution (Monino and Sedkaoui, 2016).

Open Data, Open Government, and Open Government Data have become important concepts in government institutions for the above mentioned, mostly empirical reasons. Theoretically, the importance of openness, especially that of data in government, can be explained from New Public Management (NPM) concept. Information and Communication Technology (ICT) is considered to be introduced in public administration along with other new managerial techniques, especially under the NPM concept in the Nineties. With NPM, the use of ICT started to focus on managerial process of public administration. Various managerial tools enabled by ICT were introduced to improve the speed and transparency of administrative procedure. Exchange of documents and elaboration through multiple actors became easier, thus improving interaction and collaboration among stakeholders. Not only the internal managerial issues, but also the public service delivery utilizing and benefitting from ICT, especially web-based technologies became popular. Many former counter services were transformed into on-line services, making citizen possible to access directly to information as well as public services.

E-Government has been challenged with “digital era governance”, which goes beyond the NPM. In this view, all stakeholders are related in public governance network. The introduction of New Public Governance (NPG) in public service delivery is an important turning point as concept as well as practice. Citizens and communities are invited to participate not only in the decision-making process, but also the service delivery process, thus realizing co-design, co-creation, and co-production. They are redesigning the structure of service delivery.

Digital services of governments have become an importance aspect of technology and/or innovation driven public services. This concept as well as practice was enabled through various elements, including co-design and co-production with citizens and other stakeholders, digital technologies enabling data analytics, thus better designing services, based on data and evidences, NPG helped the realisation of co-production with citizens and other stakeholders, while NPG encouraged ICT to be an effective and efficient instrument of government. Many of the digital services are not only a result of technological innovation and advancement, but also a product of institutional reform and revolution. ICT, per se, is not a solution, but could offer and become an opportunity.

In line with this theoretical evolution of public sector governance, Open Data, Open Government, and Open Government Data have become essential to government institutions, not only for their innovation but also for the possible realisation of co-design and co-production with citizens and other stakeholders. Indeed, the research focuses on this topic because of this very reason.

5. UK Approach to Open Data and Open Government

The UK's third Open Government National Action Plan 2016–18 (NAP), published during the Prime Minister's Anti-Corruption Summit on 12th May 2016, builds on the first and second plans published in September 2011 and September 2013. It sets out 13 commitments in line with the Open Government Partnership values of access to information, civic participation, public accountability, and technology and innovation. The third NAP was developed in dialogue with the UK Open Government Network (OGN), a coalition of active citizens and civil society organisations committed to making government and other powerful institutions work better for people through enhanced transparency, participation and accountability. Presently the OGN has more than 700 members.

The UK government is committed to Open Government, not just every two years when it publishes a new NAP, but as business as usual. The UK's fourth National Action Plan for 2018–2020 was launched in 2018 and was developed in collaboration with the UK's Open Government network.

Commitments in the UK NAP include the followings:

- 1) The UK being the first G7 country to commit to the Open Contracting Data Standard (OCDS) for contracts administered by a central purchasing authority, the Crown Commercial Service. This means that the whole process of awarding public sector contracts - from bidding right through to building - was made public for the first time in 2016;
- 2) Leading the world in creating an open register of beneficial

ownership so everyone can see who owns what in Britain;

- 3) The introduction of reusable unique identifiers to the UK's published government grants data and central procurement data. This represents a step change in how people can monitor how government is spending taxpayers' money.

Open Government National Action Plan has developed between 2016 and 2018 as follows.

The third UK Open Government National Action Plan was published in May 2016. This plan set out commitments to open government in the UK and the ambitions of the UK Government for the next two years. This updated version of the third Open Government National Action Plan includes new commitments from each of the devolved administrations: the Northern Ireland Executive, the Scottish Government and the Welsh Government. This plan has been co-created with members of civil society and active citizens, coordinated through our open government networks. The UK government is committed to continue to work with civil society to both implement and develop commitments in future.

The major steps and their related publications are the following:

- UK Open Government National Action Plan 2016 to 2018 (12 May 2016): policy paper
- United Kingdom National Action Plan Commitment 13 - Government and Civil Society Collaboration (7 October 2016): policy paper
- Commitment from the Scottish Government (7 December 2016): policy paper
- Commitments from the Welsh Government (7 December 2016): policy paper
- Commitments from the Northern Ireland Executive (7 December

2016): policy paper

- Open Government Partnership: UK national action plan 2015 launch (13 July 2015): speech

The UK government's second NAP, published at the OGP Summit in London in October 2013, and progress against delivery

- Open Government Partnership: UK National Action Plan 2013 (27 June 2013): consultation outcome
- OGP UK National Action Plan 2013 to 2015 (10 March 2015)
- Open Government Partnership National Action Plan 2013 to 2015: mid-term assessment (25 March 2015): consultation outcome
- Open Government Partnership: UK Government delivering greater transparency (14 October 2016): press release
- Open Government Partnership National Action Plan 2013–15 final report (14 October 2016): policy paper
- UK uses Open Government Partnership summit to make transparency a reality for citizens (31 October 2013): press release

From September 2012 to October 2013, the UK government was the lead co-chair of the OGP, culminating in the OGP summit in London in October 2013. Indeed, UK hosted Open Government Partnership Summit 2013, on 5th December 2013. Related to these initiatives, there are following publications:

- Open Government Partnership: UK co-chair vision (26 September 2012): policy paper
- The Open Government Partnership Summit (10 April 2014): case study

OGP UK 2011 National Action Plan was the first NAP published at the launch of the OGP in September 2011. The governments' self-assessment report provides an honest account of the UK's performance

up to April 2013.

- UK Open Government National Action Plan 2011 to 2013 (20 September 2011): policy paper
- OGP UK 2011 National Action Plan (24 April 2013): consultation outcome

These policy papers and related reports have contributed to formulate the open government data in UK, which is another example.

The UK government has promoted various initiatives on open government data for all this period; however, the outcome seems mixed, according to the interviews conducted. Open Data requires not only technology, but also and especially coordination among government institutions, which is not easy to achieve, mostly because of political reasons. Open Data initiatives, thus, need good design and long preparation in each institution and then among institutions. Often, they said, institutions do not know what data they have and thus which to share.

One of the most interesting factors emerged from the interviews was the fact that Open Data Institute (ODI), one of the main institutions in charge of open data policies in UK, was instituted by bottom-up initiative. Indeed, the ODI was co-founded in 2012 by the inventor of the web Sir Tim Berners-Lee and artificial intelligence expert Sir Nigel Shadbolt to show the value of open data, and to advocate for the innovative use of open data to affect positive change. Indeed, ODI claims that they are “an independent, non-profit, non-partisan company that, since our creation”. ODI works with government to build an open, trustworthy data ecosystem. Their mission is to bring about sustainable behaviour change within companies and governments that hold and use data. They do this through three key activities: 1) Sector programmes -

coordinating organisations to tackle a social or economic problem with data and an open approach; 2) Practical advocacy - working as a critical friend with businesses and government, and creating products they can use to support change; and 3) Peer networks - bringing together peers in similar situations to learn together. Indeed, the business model and the organizational structure of ODI reflect their idea of openness, it is a network, rather than a traditional institution. Co-design, co-creation, and co-production are part of the organizational culture as well as business model, which are parallel to the NPG model in government and have shown effective in some cases, but also very difficult in other occasions, both because of the model itself.

ODI advocates for and supports practices that increase trust and trustworthiness: building ethical considerations into how data is collected, managed and used; ensuring equity around who can access and use data; engaging widely with affected people and organisations. They help people identify and address how open data can be used effectively in their sector to improve decision making and processes, deliver more efficient and effective services and products, and fuel economic growth and productivity. They connect, equip and inspire people to innovate with data. ODI offers: 1) Strategic advice — identifying how data can help to achieve programme goals and how to measure success; 2) Policy development and guidance — scrutinising the interaction between general data governance practices and sector norms; 3) Technology development — creating appropriate data standards and the tools needed to support them; 4) Research — from creating case studies of the role of data in the sector to rigorous impact evaluation; 5) Training — including blended learning packages that combine face-to-face, eLearning and webinars; 6) Running competitions

and acceleration programmes — to foster innovation in the sector; and 7) Building communities within the sector — and communicating clearly with them.

Although it is an independent institution, ODI works with government and for various government policies as well as projects. Many of the staff members are former civil servants and they have network with former colleagues in the government and among business partners.

Indeed, among the interviewed, including civil servants and who work in private business, many of the latter are former civil servants and know the colleagues in the public sector. The revolving door system of UK favours this practice and has several advantages; however, from the transparency and accountability point of view, it also has issues. Personal network does not necessary mean unethical behaviour or corruption, but winning the bid and working with former colleagues' projects sometimes create problem.

The issues of Open Government Data are, according to the interviews, are the following.

First, institutions often do not know what data they have. Thus, to know what data they have is the first step. Second, data are not always updated and/or have the same quality, making difficult to use them together. Third, availability of data does not necessary lead to better governance, as institutions often have no idea how to utilise data. Forth, open data theoretically would contribute to transparency and accountability, but in practice, it is difficult to prove it. Lastly, open government data are believed to contribute to the policies as well as to the business, but the benefit to the latter has not been clear. The issues are related to the problem that data are neither information nor knowledge.

Some interviewees noted that this underuse of data was due to

several reasons: first, the data gathering started without clear ideas how to use them, thus had some fundamental issues from the beginning of open data project; second, in the policy-making process, the data analysis has been done in fragmented way and not systematically, thus the potential of open data was not fully activated; third, various actors had different ideas for open data; and forth and most importantly, many actors have not realised the potential of the data.

Data are, indeed, often ignored and not utilised for policy making. The interviewees pointed out the lack of awareness of the key actors, the lack of coordination among these, the difficulty of analysis, and the difficulty in interpretation of data and especially in translating into public policy. The last could be also explained from different points of view; research suggests that the understanding depend upon the information and the way information is presented. Indeed, more detailed content will negatively affect understanding. The existence of data and its openness per se does not guarantee better understanding of the fact and better policy making. The results of literature review and research results suggest that guaranteeing the access to data and thus information does not necessary mean that they understand it, because of cognitive constrains, according to the cognitive load theory (Sweller, 2010).

It might be important to note that the open government data often is considered in relation to evidence-based policy-making (EBPM). This is based on the belief that more available open data could contribute to better policy-making. However, interviewees, literatures, and facts so far have proved this difficult.

5-1. Ticketing Data of London 2012

Throughout the interviews, Big Data related legacies were discussed with Prof. Fowler, Prof. James, Mr. Fitzboydon, Mr. Allen, Mr. Lee, Ms. Boggis, Ms. Nicholl, and Mr. Bingham. General evaluation on legacies was the main topic of interview with Prof. James, Ms. Boggis, and Prof. Liddle, who advised UK government on the issue (see list of interviewees).

The idea of gathering ticketing data came from various interests, which are related to several legacies, including sport activities, health condition, and well-being of the population and the event organization knowhow. The data was gathered during the Games and have been kept by the Sport England and shared with other institutions. The data has been partially analysed, but there are few evidences that the analysis has led to policy making. Since the original data is becoming rather out dated, the possibilities that the data would be utilised are rather low.

Some interviewees noted that this underuse was due to several reasons: first, the data gathering started without clear ideas how to use them, thus had some fundamental issues from the beginning; second, the data analysis has been done in fragmented way and not systematically, thus the potential of Big Data was not fully activated; third, various actors had different ideas without any coordination; and forth and most importantly, many actors did not realise the potential of the data.

So, why the data are often ignored and not utilised for policy making? The interviewees pointed out the lack of awareness of the key actors, the lack of coordination among these, the difficulty of analysis, and the difficulty in interpretation of data and especially in translating into

public policy. The last could be also explained from different points of view; research suggests that the understanding depend upon the way information is presented. Indeed, more detailed content will negatively affect understanding and this negative affect will be stronger when the information is structurally fluent. The existence of Big Data per se does not guarantee better understanding of the fact and better policy making.

The results of literature review demonstrate that information understanding heavily depends upon presentation – those exposed to more detailed information understand the information worse than those exposed to less detailed information. This relationship is strengthened when the information is structurally fluent. The research results suggest that guaranteeing the access to information does not necessary mean that they understand it, because of cognitive constrains, according to the cognitive load theory (Sweller, 2010).

5-2. Success of “Open Active”

After some struggles to actively use collected data and provide them to the citizens, the project “Open Active” is a project that the Department for Digital, Culture, Media and Sport has funded, through Sport England and the Open Data Institute. It is managed through collaboration among local authorities, national sporting bodies, small and large enterprises and third sector sport organizations. It tries to get information about all local sporting activities into one place, using agreed standards, so that application-makers can use the data to show people tailored opportunities to get active. Because the data used for the activities are structured, with geospatial coordinates, it is possible to develop applications with them like the live map of opportunities for sport.

The actors involved can look in the back end to see which organisa-

tions are contributing, and to get an idea of the quality and conformance of the data they are providing, so that they can target interventions and quality control. By using agreed standards such as Universal time code stamping, they can more easily stitch together data sets, and encourage the community to upload and manage their own data separately. With the right API standards, they don't even have to host the data themselves, but only set the standard for addresses. Each sports organisation, each club or city council or leisure centre can own and manage their own data securely – but the department can still amalgamate it to benefit from the total big data set.

When a local authority teams up with an enterprise that can provide a secure booking application layer, then the data created and shared opens a door for everyone in that place to access and take part in new activities. Once that part is working well, then it is possible to start to integrate such booking facilities with local medical professionals – like doctors and physiotherapists, so that they can begin to practice social prescribing.

According to the interviewees, data, when used well, can be so powerful. It is infrastructure, like roads and stadia. It deserves planning and respect. In return, it will support your legacy, and your sustainable development goals in the years to come.

Open Active seems to be popular and has been successful. As one of the interviewees noted, it has linked to social prescribing, another important project of UK policy using Big Data for healthcare.

6. Open Data, Open Government Data and Co-production with Citizens

Since the aim of the paper is to explore how data would be collected from and shared among stakeholders, then utilised for policy making as well as implementation, the last part investigates what have been done and what would be the future plans.

Open Data and Open Government Data are based on co-production with civil society and among institutions. Theoretically, open data is in line with NPG and thus in line with public service delivery with technological innovation. Open Government Data is aimed to improve transparency and accountability, thus, also from this point of view, is in line with other public sector reforms.

As open data would contribute to evidence-based policy-making, literatures of EBPM should also be considered. One of the traditional areas of policy which has used EBPM is healthcare and healthcare services are indeed benefitting not only from open data, but also from the digital technology in general, especially in order to change behaviour of citizen. Healthcare services are turning toward preventive healthcare and, for example, social prescribing in UK is an example of using data and co-produce service with civil society and citizens. Social Prescribing is a means of enabling general practitioners and other frontline healthcare professionals to refer patients to a link worker - to provide them with a face to face conversation during which they can learn about the possibilities and design their own personalised solutions, i.e. “co-produce” their “social prescription” - so that people with social, emotional or practical needs are empowered to find solutions which will improve

their health and wellbeing, often using services provided by the voluntary and community sector. It is considered to be an innovative and growing movement, with the potential to reduce the financial burden on the NHS and particularly on primary care (Social Prescribing Network, 2019). This is a typical benefit of co-production of, and through, Open Government Data.

The issues of open government data are not necessary related to technological solutions, but more on institutional design, design of dataset, interpretation and use of data, and making policy using data. Thus, both theories and experiences of open data suggest that the issues are similar to those of EBPM. Previous research of the author showed that availability of data does not guarantee information and knowledge. Furthermore, policy areas like healthcare and environment, where data and EBPM are important as well as effective, behaviour change of the citizens is essential, which again requires data. Social Prescribing could be an interesting experiment to co-produce healthcare services with civil society and individuals.

7. Conclusion: Findings and limitations

This paper aims to explore the question of how data would be collected from and shared among stakeholders, then utilised for policy making as well as implementation.

Literature reviews show conceptual objectives and benefits of Open Government Data, while the policies in various countries show that they mostly follow these concepts. Interviewees, however, pointed out the operational issues of Open Government Data, which are easy to guess from the literatures, but not so easy to resolve, because the issues are

related to governance of public organizations and to the nature of data.

We already know that having data does not lead to better information or better understanding (Kudo, 2018). Availability of data, thus, does not guarantee better policy-making based on the data. However, there are still strong beliefs among governments that open government data would improve policies and business.

Interviews revealed that there are also issues such as capacity development on data analysis and digital technology in general. There are also limitations in Open Government Data, mostly due to the availability and the quality of data, which affect usability of data, thus, affect policy-making using the data.

The result the case study contributes to theoretical discussions, as they show empirical issues, which are not necessary explored in literatures. The case also contributes to the co-production of public service delivery discussion as well, since it is an example of it. Furthermore, the case can be seen in the context of EBPM as well, which has strong connection to Open Government Data.

Given the limitation of one case study, the further research which will follow would be on several other governments, and compare those cases. Since Open Government Data and EBPM are related to each other, theoretical study on EBPM would be another step to complete the research, while theoretical explanation within co-production and NPG should be given.

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Figure 1: List of Interviewees

Date	Name	Title/role	Organization
07/11/2016	Margaret Nolan	Representative	British Taekwondo
	Simon Mackintosh	Assistant Head Teacher	Wilmslow High School
08/11/2016	Christopher Mackintosh	Senior Lecturer	Manchester Metropolitan University Business School (MMUBS)
	Neil Fowler	Professor, Head of Department	MMU, Department of Exercise and Sport Science
	Catherine Elliott	Senior Lecturer	MMUBS, Department of Management
	Rory Shand	Lecturer	MMU
	Mark James	Professor, Director of Research	MMU, Faculty of Business and Law, Manchester Law School
09/11/2016	Yvonne Harrison	CEO	Greater Manchester Sport
	Peter Fitzboydon	CEO	London Sport
	Tom Mapp	National Schools Development Manager	Rugby Football Union (ex Youth Sport Trust School Games lead and British Softball/Baseball)
10/11/2016	Eugene Minogue	CEO	Parkour UK
	Hayley Fitzgerald		Get Set to GO - Mind
	James Allen	Director of Policy, Governance, and External Affairs	Sport and Recreation Alliance (SRA)
	Lee Mason	CEO	CSP Network
11/11/2016	Emma Boggis	CEO	SRA
27/02/2017	Liz Nicholl	CEO	UK Sport
	Jerry Bingham	Research Manager	UK Sport
30/05/2017	Joyce Liddle	Professor	Université Aix-Marseille
01/11/2018	Mike O'Neill	former Chief Digital Officer	Department of Education
01/11/2018	Fliss Bennée	Head of Data Governance	Department of Digital, Culture, Media, and Sport
02/11/2018	Mike Rose	Head of Business Development	Open Data Institute