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A Comparison of Policies on Opening and Utilization of Open Government Data: Key Discussions on the Disaster & Safety, Public Administration, Social Welfare, Industry & Employment Area Rate in South Korea

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A B S T R A C T

This study first compares the related policies of OECD, EU, USA, and South Korea. Second, policy implications for South Korea will be derived from the comparison results. Through these discussions, the author examined the problems and policy directions in opening and utilizing the government data. And in an attempt to examine the problems of open government data based on the current status of South Korea, the author examined the related problems of open government data including the increase/decrease by three subcategories; the step by step status of provided data format; the status of government data opening by provider; the status of government data opening by category; the ratio of use cases to the number of cases provided; the relationship between information and content areas in the public sector and data reuse, and the reasons for not using open government data. Through this study, it is necessary to clarify obvious beneficiaries of the open government data initiative that can meet the demand of the citizen. First, the right to use open government data should be guaranteed. Regulations related to the protection of privacy information are necessary. And it is also necessary to open judicial records to the public.

Key words: open government data, Comparison of Policies, opening and utilization

Introduction

South Korean government has opened and provides various forms of open government data that will be freely available for the general public in accordance with the Act on the Provision and Utilization of Open Government Data, helping to create diverse types of high added value based on it. The Act provides the right for public use of the open government data by stipulating provisions on the data held and managed by public institutions as well as on the activation of their utilization. It also contributes to the improvement of the quality of life and the development of the national economy by ensuring the utilization of open government data by the private sector. The open government data signifies opening of the data held by the government and other public institutions such as traffic information and weather information for commercial use by the private sector.

The open government data is processed, created, acquired and managed by public agencies in an electronic manner, refers to all kinds of data represented by symbols, characters, voices, sounds

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and images. The opening (or provision) of the government data means that public entities provide users with the ability to recycle information and authorize them to use the information provided for commercial or nonprofit use. The use (download) of open government data means that the users download the data opened by the public institution in a file or utilize it via application of the open API. The author has developed an open government data maturity model for measurement and evaluation of objective quality control level in an attempt to enable public institutions to perform their own quality control. Based on this, the author evaluated the quality management level of the open government data in 2015. A level assessment was performed on the total of 11 national DBs and 10 private DBs in order to establish a quality management system for each life cycle by evaluating overall quality management activities related to collection, creation, operation, and provision of open government data with the results shown below. In 2017, a total of 42 DBs were assessed for their respective quality level.

In this study, related policies of OECD, EU, USA, and South Korea are compared first. Second, possible policy implications for South Korea are derived from the comparison results. Through these discussions, the author will examine problems and policy directions in opening and utilizing the government data based mainly on the discussion of literature and statistical data.

Comparison of Major Policies Governing the Open Government Data: Focused on OECD, EU, USA, and South Korea

OECD's Open Government Data Policy

The open government data means the "data that contributes to transparency, accountability and value creation as a result of opening of the data created and stored by the government" (OECD, 2016). Therefore, the government can provide economic benefits and innovative citizen-led services by encouraging the use, reuse, and free distribution of such data sets. The 2016 OECD Principles for Step-by-Step Self-Assessment of Transition to E-Government describes what the maturity stage look like and the specific policies the government should consider.

First, citizens and companies are entitled to "handle all administrative tasks online". To this end, an appropriate environment conducive for complying with the "digital by default" principle is to be promoted. Second, the mandatory use of "key digital enablers" such as electronic IDs and signatures designed to ensure provision of electronic and digital public services and implement "once only" principle has been stipulated for the public sector. Third, legislation is in place to ensure that resources and data are shared across the public sector for improved policy making and service delivery. Fourth, Internet access is recognized as a "constitutional right". Citizens should always be able to verify that public entities / institutions have, and if so, are using their privacy information; and that they have the right to participate in the delivery, design, and decision-making of public services. The mandatory provision of online services to prevent "new forms of digital exclusion" has been defined as well. The law should appropriately reflect the means to promote electronification of the public sector.

Following needs were laid out in the first OECD Expert Group Meeting on Open Government Data held in 2015. First, the top priority should be put on cultivating communities that have become the consumers of public government data (open government data) in order to create value. Second, the open government data portal run by the government should not be a mere information repository, but a platform for fostering cooperation within and outside the government (OECD, 2015).

In the second OECD Expert Group Meeting on Open Government Data held in 2015. Mexico's open government data (Open Government Data) policy was presented as one such concrete example. It was reported in the meeting that the creation and operation of the Open Data Squad, which was designed to help the public sector in Mexico develop digital literacy and decipher and produce electronic data, has facilitated smooth establishment of the system. However, the organizational culture that resists such changes has been singled out as a potential task to be solved. It was proposed in the following session that the National Statistical Office should be required to actively utilize local open government data (Open

<Table 1> Advanced stage of the OECD principles for step-by-step self-assessment of transition to e-government

Practices to be implemented
Capable of handling all administrative tasks online
Access to key aids such as electronic identification and signatures
Legislation to ensure resource and data sharing across entire public sector
Recognition of Constitutional Rights for Internet Access

※ Source: Self-Assessment of Stages of Development in Digital Government Principles 12: legal and regulatory frameworks (OCED, 2016).

Government Data) portals and non-traditional public resources in order form them to function not just as providers of information but also as information consumers (OECD, 2016).

In the third OECD Expert Group Meeting on Open Government Data held in 2017, an agreement has been made on the OECD Open-Useful-Reusable Government Data Index (OURDAT) in accordance with three criteria: Availability, Accessibility, Government support to the re-use. OECD member states shall be evaluated based on these criteria. In order for the open government data policies to take effect, the electrification of the public sector must be implemented in parallel. It was also suggested that citizens should be allowed take the initiative to increase their trust in open government data in this process.

South Korea, France, the United Kingdom, and the United States, the first group of countries that adopted the open government data policy, have introduced and implemented a wide range of policies to improve availability, accessibility, and government support to the re-use. In the OECD Open Government Data Index (OUR Data Index: Open, Useful, and Re-Usable Government Data) released in 2015 and 2017, South Korea scored 0.98 and 0.94, respectively, out of 1.00 (<Figure 1>), which is higher than the OECD average, overtaking advanced nations such as the US and the UK. In summary, "South Korea was named the OECD leader in the field of open government data" thereby earning an international recognition for its achievement in the open government data initiative it has pushed for since 2013.

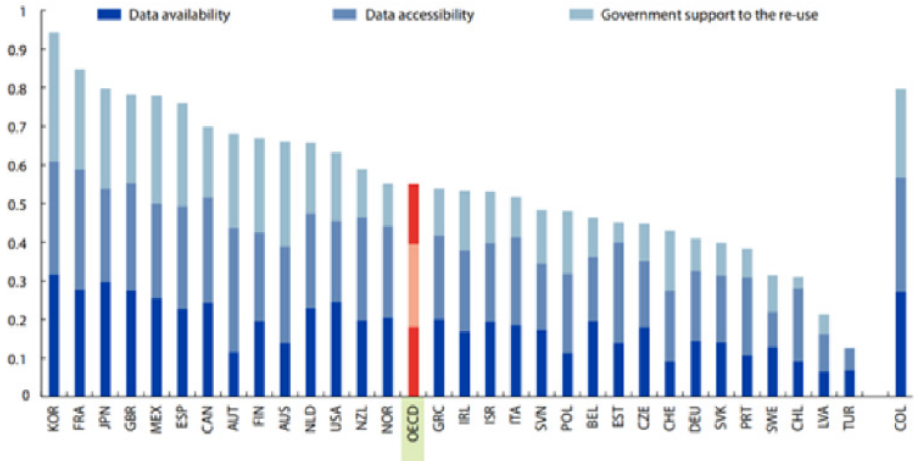
EU's Open Government Data Policy

The European Union has laid out guidelines for open government data in 2003 by issuing Directive 2003/98 / EC on the reuse of public sector information and Directive 2013/37 / EC on the reuse of public sector information in 2013. First, the Directive on the Reuse of Public Sector Information in 2003 (Directive 2003/98 / EC) states that it does not apply to documents outside the scope of the public services of the public agency or to those restricted by the information disclosure system of the member state. It also states that public agencies in possession of open government data are banned from closing exclusive contract with third parties

The Directive 2013/37 / EC on the Reuse of Public Sector Information in 2013 (Directive 2013/37/EC) stipulates that public authorities should open relevant documents complete with their metadata in a machine-readable format, and that the cost receivable by the public institution should not exceed the marginal cost of making the information reusable, except for the costs that are charged to the re-users and required to produce the information. The Directive is applicable to libraries, museums, archives, and other institutions.

Through these guidelines, the argument that government data should be systematically available in a machine-readable format, which is "one step further from the liberty of government" in relation to open government data (Choi, 2018: 480), has become increasingly compelling. In addition, these guidelines are significant in that they imply that "all the information allowed under the individual laws of the member states should be made available for re-use in principle" (Choi, 2018: 481).

Janssen & Hugelier (2013) find it difficult to apply PSI2013 to the electronification of cultural assets, and presumed that it would be difficult to harmonize the costs of realizing the basic principles of electronification and the principle of marginal cost collection. In addition, the Directive also lacked specific sanctions, thereby raising a concern that there would be a gap between the



※ Source: OCED (2017).

<Figure 1> OECD OUR Data Index

ideals of the government opened by the arbitrary interpretation of public institutions and the reality. Carrara, *et. al.* (2015) used the concepts of Public Sector Information (PSI), Open Data, and Big Data simultaneously to define the open government data. According to Carrara, *et. al.* (2015), the open government data can be "a part of public sector information and open data as well as a subset of big data" (P: 22).

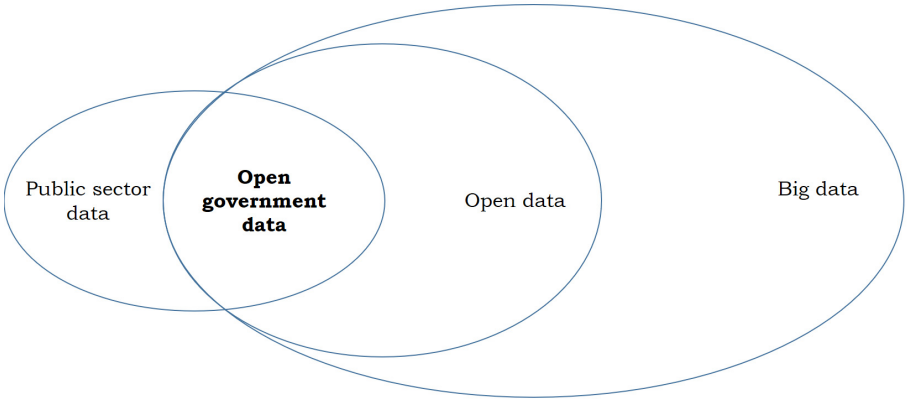
Open Government Data Policy of the United States

In the United States, the Freedom of Information Act, established in 1966, played a role in promoting government transparency and accountability (Choi, 2018). On the other, the Obama administration attempted to release government data in an electronic format by administrative order. Macdonald & Crail (2016) saw this as an Open Government Data movement, which aims to guarantee ① digital format ② free provision ③ universal provision ④ easy and unlimited access ⑤ free use and redistribution and ⑦ accessibility to the public.

Federal efforts have been made from 2016 onwards to enact the OPEN (Open, Public, Electronic, and Necessary) Government Data Act - a bill mandating public disclosure of information in electronic form. In 2018, the House of Representatives bill (a measure to promote evidence-based policy decisions) was passed to the Senate and is awaiting further legislative process. According to Choi (2018), the state and local governments are enacting laws and regulations on open government data provision apart from the OPEN Government Data Act. New York City is a typical example. After initial legislation in 2012 of and three consecutive amendments of the Open Data Law, all open government data will be available on a single web portal by the end of 2018 (Choi, 2018: 488).

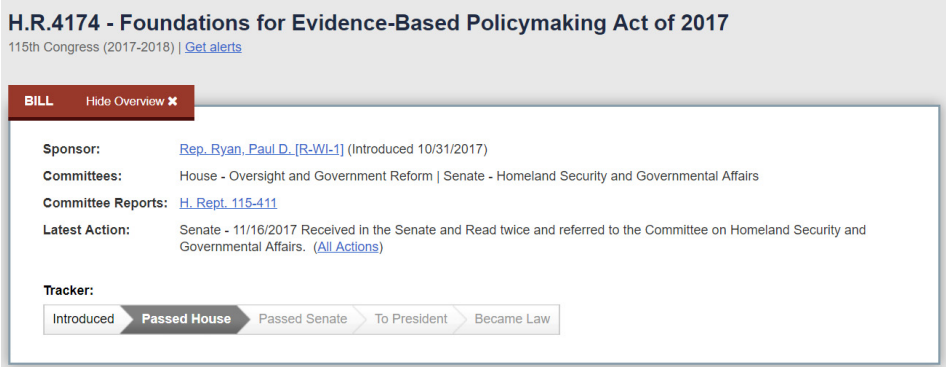
South Korea's Open Government Data Policy

The Act on National Informatization was introduced in 1996 for the realization of the knowledge-based information society. The Act extended the scope of government data formats by defining



※ Source: Carrara, *et. al.* (2015: 22)

<Figure 2> Overlap between open government data and public sector information



※ Source: US Congress (http://www.congress.gov).

<Figure 3> Progress of legislation to facilitate evidence-based policy-making (Sep. 2018)

them as all kinds of data or knowledge processed in the optical or electronic way and then represented by codes, letters, voices, sounds and images. The 'Information Disclosure Act' enacted in 1998 is a concrete means for realizing the constitutional right of the people to know, and establishes matters relating to disclosure requests and the disclosure obligations of the public organizations. The E-Government Act enacted in 2001 sets the basic rules governing the electronic processing of administrative duties. It is a means to promote the efficiency of administrative duties of the government agencies through electronification of related duties. In 2013, the law on the provision and use of open government data has been passed, with the specific implementation structure composed of an open government data strategy committee, a general supervision agency (the Ministry of Interior and Safety), an operation support organization (National Information Society Agency), a dispute settlement committee, and data disclosure officer (each representing institution). In 1996, the public was guaranteed the right to know while the transparency of the government administration was secured by system by making information available to the public, In 2013, the Act on Provision and Utilization of Open Government Data has been established, allowing provision of electronic data and information to the private sector beyond simple disclosure, thereby enabling new value creation through free access to, use and reuse of information. In 2017, the government proposed a bill for promoting data-based administration (hereinafter referred to as the Data Administration Activation Act) in order to establish evidence-based policy-making process which utilizes electronic information more actively in administration process. The key areas of the data-based administration include risk prediction and elimination methods such as safety and disease prevention, preparation of preemptive countermeasures to meet future needs in economy and society, cost reduction or improvement of administrative procedures, and the provision of tailored services through prompt and accurate collection, comparison and analysis of public opinions for establishing key policy initiatives. The bill stipulates data request and provision procedure between institutions, and the construction of integrated data management platform. It also stipulates to establish and operate an integrated government data analysis center in order to enable efficient data sharing and linking and to promote utilization of data analysis results in policy formulation and decision making process.

According to the bill, the Minister of Interior and Safety should establish a basic plan for fostering the data-based administration (3 years) in order to systematically promote the data-based administration and the heads of the public agencies (central and local governments) should set corresponding enforcement plan for the basic plan (each year). In addition, the data-based administration promotion committee will be established to push for government-wide data-based administration. The committee shall review major policies on the data-based administration including the basic plan, and the settlements on refusal to provide data. Considering that this bill, pending as of 2018, explicitly mandates the use of open government data, it is significant in that the bill may promote the transition to the "mature phase of e-government" as specified in 2016 by the OECD.

The following is the summary of what has been discussed so far.

Key Discussions on Open Government Data in South Korea

The open government data portal (data.go.kr), a government-wide window for providing public information, has been opened to facilitate utilization of the open government data held by the public institutions for service development of individuals or companies. This is because integrated system capable of providing open government data continuously and systematically is what is required today. Established in 2013, the portal allows anyone to access open government data easily and freely, providing open government data that is scattered around each institution easily for people to utilize in one place and in various formats such as file data and open API. Other various services such as use of open government data, applications for open government data, corporate support policy information, developer network bulletin board, and inquiry consultation, are being provided as well. In particular, the open govern-

<Table 2> Difference between data provision and disclosure

Criteria	Provision	Disclosure
Governing law	The Act on Open Government Data	The Information Disclosure Act
Purpose	New business and job creation, and improvement of national benefit through private utilization	Ensure the right of people to know and secure transparency in the government administration
Category	Electronic data / information	Electronic or non-electronic data or information
Provision type	Should always be machine-readable form	No specific disclosure form
Example	Real time bus tracking service	Bus operation plan report, bus company subsidy payment plan and result report etc.

※ Source: The Ministry of Interior and Safety Open Government Data Management Guidelines Amendment Notice (Aug, 2016).

<Table 3> Definition of open government data by country

	OECD	EU	U.S.	South Korea
Definition of open government data	Data contributing to transparency, accountability and value creation by making all the materials produced and stored by the government available to all	Data in the form of "intersection" with all attributes of public sector information (PSI),	Open government data (OD), and big data (A) that is machine readable, (B) may exist in multiple formats, (C) has no restrictions on the use and reuse, and (D) made available according to standard procedure	Electronic materials or information processed by electronic means, such as data base and electronic files, created or acquired for the purposes specified by laws and ordinances.
	Same name, Open Government Data is used		Open government data	
Common features	Compliance with basic principles of electronification Freedom of access, use and reuse			
Differences	The public sector's electronification is implemented in parallel, citizen-led participation and assurance, and confidence in open government data	Aims to create economic added value by building direct and indirect information market within the EU.	Implemented as part of efforts to promote evidence-based policy decisions.	Aims to guarantee people's right to use open government data and to pursue national economic development.

ment data portal gives a glimpse of the 33 open areas 'national key data'. Open data has been identified by various methods such as national and enterprise demand surveys, interviews, field surveys, and national priority data, while some key national data sets in need of prompt availability such as building information and business analysis information, were selected and opened in order to make the open government data available easily and variously for the private sector.

The number of open government data releases provided through the portal until 2017 increased by 4.3 times to 235,500 as of the end of July 2017, compared with 5,272 at the end of 2013. Private data usage increased by 209.3 times from 13,923 in 2013 to 2.91 million in 2017. And an open government data maturity model, which is an objective quality control level measurement and evaluation system, was developed to help public institutions perform their own quality control. Based on this, the author conducted an assessment of the quality management level of the open government data in 2015. An assessment was conducted on a total of 21 DBs including 11 key government DBs and 10 private DBs in order to establish quality management system for each life cycle by evaluating overall quality management activities related to collection, creation, operation, and provision of open government data. In 2017, a total of 42 DBs were assessed for their quality level.

The data provided through the open government data portal are as follows. The data set consists of three items: file data, Open API, and standard data.

First, the file data refers to data provided in the form of a file that can be directly downloaded by the users (Kim, 2017: 70) and can be viewed as raw data. Standard data refers to data created and standardized according to a prescribed format (Open Government Data Management Guideline, 2016: 47).

Second, the Open API is a short for Open Application Programming Interface. It is equipped with a programming function so that an unspecified number of users can easily develop and utilize an application easily (Kim, 2017: 70), thereby allowing users unequipped with relevant expertise to become application developers. Open API has strength in terms of interoperability, and file data is highly reusable (Kim, 2017).

Third, the Open API is the recommended method for providing large amounts of data with frequent updates according to the Open Government Data Management Guidelines (2016: 25), suggesting that if the information of the public agency providing the open government data is updated, it is updated accordingly.

The following table shows the increase/decrease for each sub-category. The provision of all types of open government data increased from July 30, 2016 to September 16, 2018, but the growth rate of standard data provision was the highest, suggesting that the government is making the most efforts to standardize open government data.

The Ministry of Interior and Safety's open government data management guidelines divide open government data types and format recommendations into five stages. Classification criteria are: assigned by whether it can be read only by specific software, whether it can be modified or transformed, whether it has a structure to describe the data attribute / property relationship, and whether it can be linked to other data on the Web.

The following are the provision statuses by the format stage. According to the open government data management guidelines in 2014, individual data is classified as the lowest grade when it meets only the machine readable level, the higher grade when it is capable of generating the standard open metadata, and the highest grade when it allows linking and utilization of the related data. As of September 16, 2018, 84.9% of the open government data is available in three-stage format (CSV, XML) and the Open

<Table 4> Open government data increase / decrease by three subcategories

	Number of provision by type (Unit: Incidence) (Survey date: Jul. 30 2016)	Number of provision by type (Unit: Incidence) (Survey date: Sep. 16 2018)	Growth rate (Unit: %)
File data	14,873	22,093	48.5%
Open API	1,965	2,494	26.9%
Standard data	12	91	658.3%

※ Source: Kim (2017: 71).

<Table 5> Step by step identification/comparison of machine readable formats

Criteria	1st stage	2nd stage	3rd stage	4th stage	5th stage
Machine readable format	Unregistered format (Portal cannot be registered)	Minimum fit Format	Open format (Data in a form that can be freely available in all software)		
Feature	Can be read only by specific software, cannot be modified or converted freely.	Can be read only by specific software, but can be modified and converted.	It can be read by all software, can also be modified and converted.	Data structure which describes the data property relationship based on URI	Connect and share with other data on the Web
Example	PDF	HWP, XLS, JPG, PNG, WMV, MPEG, MP3, SWF	CSV, JSON, XML	RDF	LOD

※ Source: The Ministry of Interior and Safety's Open Government Data Management Guidelines. Full Text of Modified Notification (Jun, 2016).

<Table 6> Provision status by data format stage

Format stage	File Extension	Number of provision	Share (%)
2nd stage	HWP	1,236	4.7
	XLS	1,669	6.4
	XLSX	731	2.8
	JPG	65	0.2
3rd stage	CSV	19,415	74.4
	XML	2,749	10.5
	JSON	99	0.3
4th stage	RDF	107	0.4

※ Source: Open Government Data Portal (2018).

API is provided in XML format.

The following is the current provision state by institution. 98.3% of the total open government data is provided by self-governing bodies (73.4%), public organizations (15.2%), and government agencies (9.7%). With regard to the dataset type, self-governing agencies provided 17,149 pieces of file data, accounting for 77.6% of the total 22,089 cases. With regard to the Open API, 727 were provided by public administrative agencies, 988 by self-governing agencies, and 740 by public institutions with similar proportions. In the case of standard data, public institutions provided all 91 cases.

The present status of each classification system is as follows. The classification system divides datasets into 16 types, and there is a large difference between the types (Culture & tourism, 4055 cases) that record the largest number of offers and those with the smallest number of offers (Law, 70 cases).

On the other hand, provision cases belonging to law, culture & tourism, land management, environment & weather took the top place in terms of use cases, whereas those belonging to disaster & safety, public administration, social welfare, industry & employment area showed very low utilization rate. If a specific set of open government data is high in availability or openness but low in utilization rate, it signifies that the specific data set does not satisfy the quality or demand criteria of the corresponding open government data. Institutional considerations are required for these areas.

In contrast to the low utilization rate of information on industry & employment in Korea, the utilization rates of information and contents and data reuse areas in the public sector were high. The results of the European Commission's (2015) survey on the re-use of open government data by sector showed that information on

<Table 7> Open government data availability status by provision institution

Criteria	Total		File data	Open API	Standard data
	Incidence	Share (%)			
Central administrative agency	2,414	9.7	1,687	727	-
Self-governing body	18,137	73.4	17,149	988	-
Educational Administration Agency	316	1.2	300	16	-
Legislative body	12	0.04	-	12	-
Judicial authority	-	-	-	-	-
Constitutional agency	15	0.06	4	11	-
Free Economic Zone Authority	-	-	-	-	-
Educational institution	8	0.03	8	-	-
Public institutions	3,772	15.2	2,941	740	91
Committee and Free Economic Zone Authority	-	-	-	-	-
Other institutions	4	0.01	4	-	-
Total	24,678	100	22,089	2,494	91

<Table 8> Open government data portal

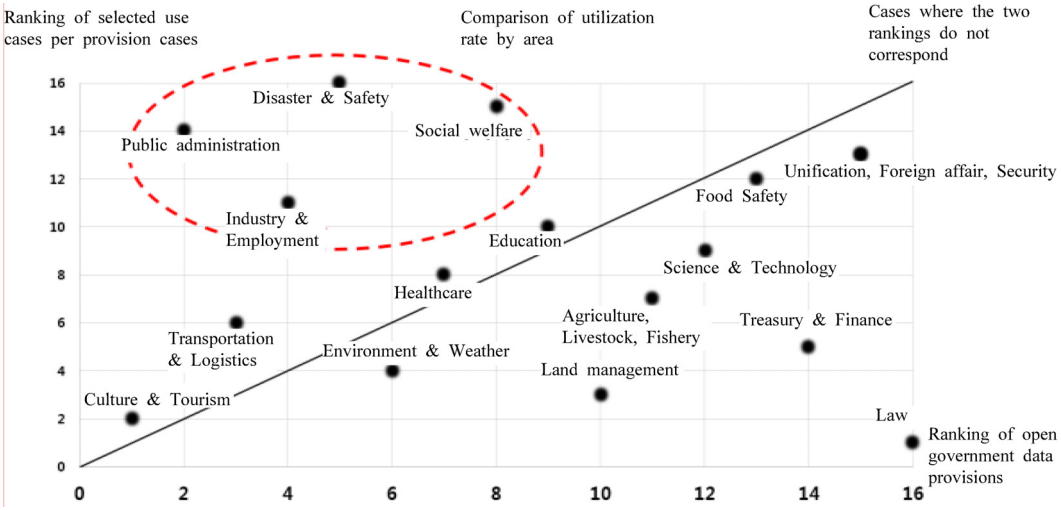
Classification	File data	Open API	Standard data	Sub-total	Utilization cases
Education	1,087	137	9	1233	75(6%)
Land management	910	130	9	1049	115(10.9%)
Public administration	3,401	266	9	3,671	118(3.2%)
Treasury & Finance	401	62	0	463	44(9.5%)
Industry & Employment	1,726	268	1	1,995	113(5.6%)
Social Welfare	1,497	106	3	1,606	46(2.8%)
Food & Health	498	41	0	539	31(5.7%)
Culture & Tourism	3,617	418	20	4,055	447(11%)
Healthcare	1,542	101	4	1,645	127(7.7%)
Disaster safety	1,841	109	9	1,959	34(1.7%)
Transportation & logistics	2,098	252	15	2,365	225(9.5%)
Environment & weather	1,704	145	7	1,856	197(10.6%)
Science & Technology	706	179	1	886	57(6.4%)
Agriculture & fishery	827	197	4	1028	82(7.9%)
Unification, Foreign affair, Security	182	76	0	258	10(3.8%)
Law	54	16	0	70	10(14.3%)

※ Source: Open Government Data Portal (2018).

economy and business was highly utilized. It is possible that the data contained in the domestic industry & employment category may consist of types that are not directly utilized in daily businesses.

Various open government data required by the public as information consumers are not being made preemptively available (Kim, 2018). According to the data collection published by the National Information Society Agency (2017), 12.4% (479,298) of the surveyed businesses were found to be using the open government data. Businesses that have not used open government data responded that they have 'no need for data (70.3%)' and 'do not know how to secure them (25.1%)' for the reasons of not using the open government data. Although there are some responses that singled out infrastructure, credibility, format, and content aspects, the main reason for not utilizing the open government data is that they do not know how to obtain and secure necessary data. There is an open standard in accordance with Article 23 of the Act on Open Government Data, but different terms are used by each institution, while there is no mandatory feedback stipulated in the law in accordance with the request of the Minister for Interior and Safety (Kim, 2018: 2).

The growth in the number of open government data utilization services has slowed down over the years. The government has not provided sufficient education services on the utilization of open government data or has not been effectively promoting the



※ Source: Reconstructed from Open Government Data Status by Classification System (2018).

<Figure 4> Number of use cases by area of open government data per provision cases

Mutual reuse of open government data (high)	• Geographic data • Weather & environment data • Economy & business data	High
	• Social data • Traffic and Transportation data • Tourism & leisure data • Agriculture, Forestry, Fishery data • Resource data • Legal system data • Science and R&D data	Intermediate
Mutual reuse of open government data (low)	• Educational contents • Political contents • Cultural contents	Low

※ Source: Reconstructed from the European Commission data (2015: 33).

<Figure 5> The relationship between information & content areas and data reuse in the public sector

<Table 9> Reason for not using open government data

Criteria	Share (%, Repeat answer)
No open government data required	70.3
I do not know how to secure open government data	25.1
Lack of infrastructure for processing open government data	7.9
Open government data is unreliable	1.6
There is a need for open government data but provided format and quality is not up to the desirable level	1.6
There is necessary government open data update is insufficient	1.6

※ Source: National Information Society Agency (2018).

potential economic added values attributable to the open government data (Kim, 2018: 3).

In 2017, the government proposed the Act on Activation of Data-Based Administrative (hereinafter referred to as the Data Administrative Activation Act) to establish evidence-based policy decision making that utilizes electronic information more actively in administration. This legislation, pending as of 2018, is significant in that it stipulates the mandatory of use open government data, which can facilitate the transition to the "mature stage of e-government" proposed by the OECD (2016).

Targets of the open government data should be clearly presented. Documents that are not part of the ordinary public services should be excluded from that target by laws. And the access to open government data should be guaranteed as well. If the provision

<Table 10> Increasing trend of open government data utilization (Unit: Incidence)

2013	2014	2015	2016	2017	2018
13	198 (1,423%)	423 (114%)	762 (80%)	1,126 (48%)	1,495 (33%)

※ Source: Open Government Data Portal.

of information is limited, the people can only apply for arbitration to the Dispute Resolution Committee, suggesting that the access to information is not actually guaranteed by public authorities (Choi, 2018: 490). Regulations governing the protection of privacy information are necessary as well. There is no provision designed to minimize potential damages stemming from privacy leakage. Judiciary records should be opened as well. There are judiciary information disclosure rules corresponding to the information disclosure law, but the open government data law does not stipulate litigation records as open government data. Finally, institutional quality control activities related to collection, creation, operation, and provision of open government data should be reflected along with assessment of key government data and private sector data. It is necessary to establish institutional measures to reduce gaps in provision and utilization of open government data.

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