연구논문

Exploring Good Governance with an Integrative Framework for Collaborative Governance: A Case Study*

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〈 Abstract 〉

The Fourth Industrial Revolution is an industrial revolution in which people, technology, and data are mixed to drastically change the way we live. The collection and utilization of big data is one of the most important features to characterize the Fourth Industrial Revolution. The importance of public and administrative data is on the rise over time in the Fourth Industrial Revolution era. Public or administrative data plays an important role in establishing useful policies for the citizens and the data governance infrastructure lowers marginal costs while enhancing knowledge. An integrative framework for collaborative governance (IFCG) suggested by Emerson and her colleagues in 2012 is a useful tool to assess collaborative governance. This study examines the Administrative Data Research Network (ADRN), a good data governance in the UK, with the IFCG perspective to assess the good data governance. It is shown that the ADRN governance case can be accounted for by three concepts–principled engagement, shared motivation, and capacity for joint action– in the IFCG perspective and that this framework is a useful criterion to build collaborative governance. Based on case analysis, the paper discusses implications for establishing data governance of administrative data in Korea.

[Key words: Governance, collaboration, administrative data, Integrative Framework for Collaborative Governance]

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Ⅰ. Introduction

The Fourth Industrial Revolution is an industrial revolution in which people, technology, and data are mixed to drastically change the way we live. The collection and utilization of big data is one of the most important features to characterize the Fourth Industrial Revolution. Efforts to use to create social and economic values have already been taken place in many countries. At present, the issue of disclosing public or administrative is widely discussed at the government level worldwide. In particular, the importance of public data is on the rise over time in the Fourth Industrial Revolution era. Public or administrative data plays an important role in establishing useful policies for the citizens and the data governance infrastructure of the data lowers marginal costs while enhancing knowledge (Penner and Dodge 2019).

While the government recognizes its' main role in delivering the necessary administrative services to the people in the past, the role of it is now regarded as the active disclosure of government-owned administrative data by satisfying the people's demands for access to administrative data. Unlike in the past when administrative data is reluctant to be disclosed because of a secret reason, but now it is widely perceived as public goods rather than state secrets, generating valuable output by being shared with citizens.

In fact, administrative data is a good commodity with a strong public-good nature. Data users generate external effects by creating tangible and intangible values that the government has not devised when they are released to civilians rather than exclusively used by the government. The establishment of good data delivery system is required for maximizing the public interest through sharing administrative data with third parties outside government rather than government's data monopoly. Although the disclosure of data is legitimated, the social benefits due to opening the administrative data will be reduced unless the delivery system works properly.

The Korean government spends a huge amount of money to collect and retain a large amount of data, but it is not being widely used for policy research to improve

the quality of life for its people. Currently, the disclosure of public data is focused on the general public in Korea, so it is urgent to establish an open system for professional researchers who conduct policy research based on data and evidence. Since an early stage of institutionalization of the opening of administrative data, the government has not created an open environment for scholars or researchers who conduct policy research, with much emphasis placed on the easy access of to the general public. Data for experts is a different from that for the general public with respect to data format and contents. A researcher often needs highly processed data reconstructed from various agencies into single integrated data file to conduct multidisciplinary research.

There is a need to discuss the administrative data delivery system that can contribute to the study of evidence-based policies, and to this end, best practices need to be taken as an example. With regard to administrative data disclosure, the UK is considered a very leading country among OECD countries (Han 2014). In particular, the Administrative Data Research Network (ADRN) is considered to be a unique innovative data opening system designed to facilitate evidence-based policy research (ADRN 2016). The ADRN serves as a governance mechanism by which government agencies, universities, and research institutes collaborate to process administrative data compiled by multiple data holders into integrated data files that are easy to use for policy research and provide them to researchers. The main purpose of this study is to investigate why the ADRN is good data governance with an integrative framework for collaborative governance (IFCG) suggested by Emerson et al. (2012). Based on case analysis, the paper also will suggest implications for establishing an administrative data system in Korea.

Ⅱ. Theoretical Background and Framework

1. Governance

Since the 1990s. the term governance has been widely used as a replacement of government in many studies including political science, sociology, and public administration. There is no unified definition of governance, but a number of definitions have been provided. Rhodes (1996) defines governance as a self-organizing network characterized by interdependence, resource exchange, the rules of game, and autonomy from the state. Lynn et al. (2001:7) propose that governance is "regimes of laws, rules, judicial decisions, and administrative practices that constrain, prescribe, and enable the provision of publicly supported goods and services." Lynn and his colleagues suggest the three levels of governance: "institutional," "managerial," and "technical" (2001: 35-36). The institutional level of governance refers to a set of formal or informal rules that constrain individual behavior in an organization. The managerial level of governance is concerned with interactions among organizational actors, and the technical level deals with arrangements regarding performance at the primary work level.

Public and private collaborations are key to governance, which are an important feature that distinguishes governance form government. Focusing on the relationships between government and non-governmental entities, governance requires the operation of networks with a variety of actors to resolve societal problems (Rhodes 1996). The fundamental role of government is to create credible rules for each independent actor in society. Network governance is a new way of working that solves problems with trust and integration mechanisms without involvement of authoritative entities such as government (Rhodes 1996, Newman 2001).

It has been recognized as the best way for government with hierarchical organizations to efficiently solve social problems in government approach with a 'control with hierarchy' method. As complex wicked problems arise over time, a

bureaucratic way of resolving government-led social problems have not been regarded as efficiently. As a new way of disentangling complex social problems, governance approach emerges, placing an emphasis on horizontal collaborations among participants with no hierarchy (Shergold 2008). To put it another way, governance has the ability of a unit of society to resolve social dilemmas or wicked problems through cooperation on its own without relying on government's hierarchical control authority or government interference.

The reason why governance paradigm has emerged is because the boundaries between the state and society are blurring, complex social problems become more complex than ever before, there is a perception that government is not the only actor in solving social problems, and, in reality, a variety of actors outside the government have been involved in public policymaking (Kooiman 2002).

2. Administrative Data Research Network in the UK

The UK's ADRN is a system that opens government-generated administrative data to policy research aimed at establishing an evidence-based policy on a basis of data. It was established to efficiently provide government data to researchers for policy development purposes. Such ideas may be the results of deep-rooted British empirical history and culture. The link between data-based evidence and research will form an administrative data task force at the British Economic and Social Research Council in 2011 to devise a system in which researchers can obtain government-owned administrative data legally and efficiently. The task force team developed a plan to establish four administrative data research centers (ADRC) by dividing the UK into four areas: ADRC-Northern Ireland, ADRC-Scotland, ADRC-Wales, and ADRC-England. The establishment of an ADRC within a partner university in each region would propose a unique way to link universities with ADRN to reveal administrative data that government agencies owned (Administrative Data Research Taskforce 2012).

The Administrative Data Service (ADS) serves to coordinate the networking of the

ADRN and provides advice to each center on legal and regulatory issues of the network. The ADS is situated in the University of Essex and maintains cooperative relations with several universities in the U.K. regarding the opening of administrative data, and continues to work with government data experts such as the UK Data Service and the UK Data Archive to secure expertise for data disclosure (Administrative Data Research Taskforce 2012).

Dispersed in four different locations, the ADRC is also closely networked with nearby universities. Each center has partnerships with major nearby universities and research institutes and has built governance as partner colleges to share resources for data opening and research. The Director of the Center for each ADRC is a professor of a department or subsidiary research institute affiliated with the partner university. Each ADRC forms a network not only with a partner university but also with a variety of research institutes in the region to exchange expertise with universities and research institutes (Administrative Data Research Taskforce 2012). Along with technical assistance, the ADRC provides facilities to researchers when disclosing data, thus fully supporting them without any problems (KIPA 2016).

The main role of the ADRN is to provide researchers with their requested data while completely protecting the privacy of the data subjects. Under the ADRN governance, individual researchers do not need to request to an agency separately to collect administrative data held by the agency, and the agency does not have to work on decision-making on request to disclose data. Instead, the ADRN negotiates with the agency on behalf of individual researchers. The ADRN is not authorized by law to forcibly collect data from a data holding agency. Thus, if the data holding agency refuses to disclose data, the ADRN will not be able to obtain the data to provide it to researchers, which is the limitation of the ADRN system. Except in such cases, however, the ADRN is viewed as a highly efficient administrative data delivery method in terms of acting on behalf of both parties—researcher and data holding agencies (KIPA 2016).

3. An Integrative Framework for Collaborative Governance (IFCG)

The term governance, is commonplace in public administration research and used interchangeably with network, collaboration, collaborative governance, public-private partnerships, cross-sector collaboration, and the forth in social science domains (Emerson et al.2012). Synthesizing extensive literature, Emerson and her colleagues (2012) developed an integrative framework for collaborative governance (IFCG) to systematically explain collaborative governance in the field. Under the framework, they define collaborative governance as "*the processes and structures of public policy decision making and management that engage people constructively across the boundaries of public agencies, levels of government, and/or the public, private and civic spheres in order to carry out a public purpose that could not otherwise be accomplished*" (p. 2).

The IFCG is a theoretical framework for good governance in which a variety of participatory entities work together and enable them to ultimately produce beneficial impacts to society. This framework has several important conceptual components to evaluate a governance system: *system context, collaborative governance regime(CGR), collaborative dynamics, and drivers*. The system context refers to multilayered environmental contexts including political, legal, and environmental influences that affect the CGR. It is also described as institutional environment (Williamson 1996) or global, national, and cultural context (Lynn, Jr. et al. 2001) that influences governance system. The external environment or system context is a factor that tells why governance is necessary and plays a crucial role in the formation of the CGR. The relationship between the system context and the CGR is reciprocal in nature: the system context influences the CGR, and the other way around. The concept of the CGR is unique in this framework, which represents the whole governance process by which collaboration by multiple parties is the predominant pattern of behavior and activity.

The CGR starts working as a result of drivers' activation, and elements of the drivers are leadership, consequential incentives, interdependence, and uncertainty.

The leadership is an utmost important factor in initiating support and compiling a variety of resources for the CGR–a leader has commitment to solve societal problems with collaborative governance mechanisms. The drivers are precondition for the CGR to begin. As shown in Figure 1, the CGR is mainly consist of collaboration dynamics and collaborative action, and both are the cyclical process by which the former influences the latter, and also the latter affects the former in the collaborative process.

The collaborative dynamics (CD) constitute the three main components: *principled engagement, shared motivation, and capacity for joint action*, which are the main analytical tools of this case. Figure 1 shows that the three teeth are represented as interlocking in the picture below, which implies that collaboration dynamics won't succeed unless all the three devices function concurrently. Under the collaboration dynamics, the *principle engagement* component refers to collective consensus among participants formed by face-to-face dialogues, meetings, and networks. This property relates to the participants having different values, interests, and cultures. Thus, principled engagement can also be called as "espoused principles" (p.11), which is formed through the four iterative processes: discovery, definition, deliberation, and determination.

Discovery signifies the detecting of shared values on which participants put an importance through analytic investigation. The term definition refers to shared values or goals participants want to accomplish through collaboration, and definition comes out as a result of discovery. Collaborative mechanisms cannot be activated without the discovery and definition processes. As a third element, deliberation refers to mutual communication among participants in collaborative governance, including "hard conversations," "constructive assertion," and various types of conversations (p.12). Lastly, determination is a process by which collective agents make decisions in the process of collective governance, ultimately producing a variety of outputs and outcomes.

The second serrated wheel in the CD in the bellow figure is *shared motivation*, which denotes to characterize participants' mutual trust within governance. Mutual

trust is an important factor in determining the success of collaborative governance, minimizing monitoring activities and ultimately reducing transaction costs (Nahapiet and Ghoshal 1998). Many governance scholars make light of this property in providing a governance framework. For instance, Lynn et al.(2000; 2001) suggested a reduced form model to characterize the governance framework, largely disregarding the participants' trust or shared motivation while emphasizing environment factors, client characteristics, work processes, governance structure, and so forth.

In reality, trust is considered important not only in governance systems but also in hierarchies in producing beneficial outcomes (Dirks and Ferrins 2001). Putnam (1993) asserts that trust generates social capital, promoting collaborative networks in the community. Systematically investigating the relationship between trust and governance in Korea, Korean Institute of Public Administration (KIPA) also finds a correlation between the two variables, showing that the higher level of trust increases the quality and level of governance (Kang 2008). In addition, Agranoff (2007) stresses the importance of mutual trust in collaborative governance, maintaing that trust among participants within governance tends to cement collaborative structure.

The third serrated wheel in the CD is *capacity for joint action* as show in Figure 1. The capacity for joint action is a crucial property of the collective governance process, defined as the combination of four elements such as "procedural and institutional arrangements, leadership, knowledge, and resources" (Emerson et al. 2012: 14). Unlike the two factors aforementioned, this entity is related to a means of making governance work in the implementation process. Given that governance is self-organizing in itself (Rhodes 1996), procedural and institutional arrangements are generated not by government or legislation but by voluntary negotiations among governance participants, including formal or informal protocols that regulate a governance system. As mentioned previously, leadership as a driver is necessary to make the collaborating dynamics operate, and the leadership is about the role of a leader in a macro-level outside the governance system. However, the leadership in this context is something about the role of participants in the micro-level within

governance, facilitating or sponsoring the governance to work effectively.

Knowledge and resources are also considered to be important factors that have an effect on collaborative actions in this framework. Without sufficient knowledge and resources, the collaborative governance system as well as a single administration system will be passive in action. In fact, knowledge and resources can be incorporated or pooled to share with each other in governance, so that the governance system is more advantageous than the single governing structure (i.e., government administration) for resolving complex problems (Peters and Pierre 1998).

So far, the three characteristics of the collaborative dynamics (CD)-principled engagement, shared motivation, and capacity for joint action-are examined as a good governance framework that promotes collective actions. Next, the ADRN governance case will be explored with a lens of this framework to assess whether or not it is good collaborative governance.

〈Figure 1〉 An Integrative Framework for Collaborative Governance
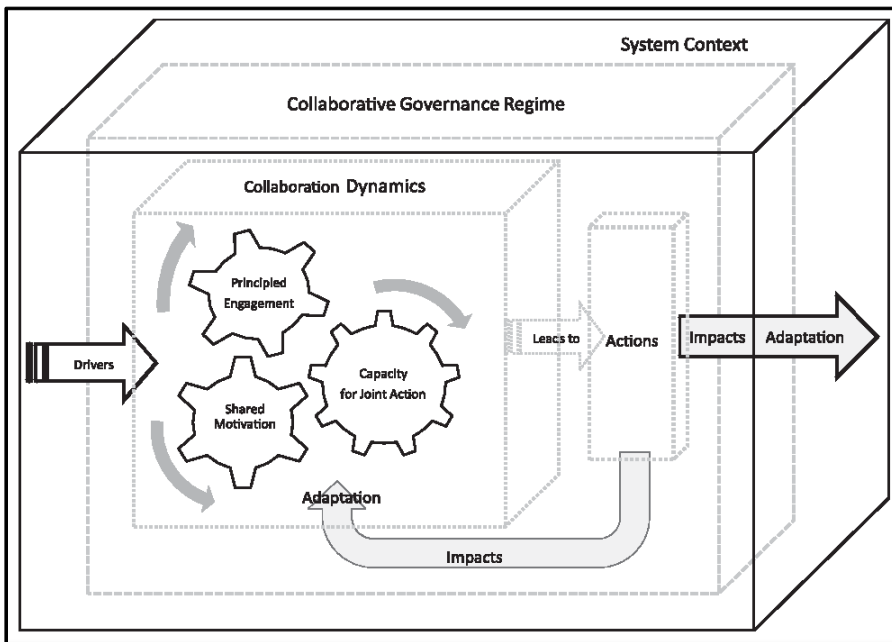
Source: Emerson et al. (2012). p.6.

Ⅲ. Exploring the Case with an Integrative Framework for Collaborative Governance[1)]

1. Driver[2)]

The prime minister, or leadership of the prime minster, has contributed to forming the social mood for opening data in the UK. In 2009, UK Prime Minister Gordon Brown announced the "Putting the Frontline First: Smarter Government" action plan, declaring that the government serving the people needs to be simplified and that an active and effective government is a government with a vibrant civil society. The government would provide data to the public for free and use it for recycling, and would take the initiative in revealing administrative data to its citizens (HM Government 2009). When the action plan was announced, the government-created data portal *data.gov.uk* was established in 2011 to allow the public to easily request online.

In 2012, the Data Strategy Board was set up as an advisory body on what should be disclosed by ministries within the government to lay the institutional foundation for data disclosure. In 2013, Stephen Shakespeare, a chairman of the Data Strategy Committee, published the Shakespeare Review of Public Sector Information, suggesting that the government needs to expand systems and infrastructure for widespread use of public data in the industry and the need to establish national data strategies (Han 2014).

In response to these recommendations, the UK government announced that it would accept the major recommendations made in the Shakespeare Review and implement the UK Open Government Partnership Plan by October 2013 to establish a national data strategy (HM Government 2013). In sum, the UK government has actively disclosed public and administrative data to live up to the "Putting the

1) On-site interviews in 2018 with Peter Smith, the Director of the ADRN and his staff, and ADRN official document have been utilized as sources to analyze this case

2) This factor is not included in the collaboration dynamics (CD) dimension of interest in this paper, but it worth mentioning to understand why the ADRN came into being.

Frontline First: Smarter Government" strategy initiated by the Prime Minister in 2009, building a public data national portal. As such, the head of the Cabinet, as a crucial driver, took initiative in developing environment in which public data can be shared among the public in the UK.

The UK had suffered from the economic recess, referred to as "the British disease," and needed a breakthrough to revamp government and society. Such consequential incentive made the government look for the new strategy of open data policy. The open data policy of the UK has increased government transparency and the trust of the people for the government, and has contributed to enhancing national competitiveness by consolidating the future growth engine of new economic value creation.

2. Collaboration Dynamics (CD)

1) Principled Engagement

Empiricism is an ideological thought that values empirical evidence obtained through observation, and evidence-based policy lays its foundation for empiricism. In order to conduct evidence-based policy research, a variety of administrative data are required. The ADRN serves as an intermediate means to efficiently and effectively facilitate the implementation of evidence-based policy. The UK is one of the most active countries in collaboration between universities and government to produce policies for evidence. In other words, the government provides funding to universities and the universities produce evidence for government policies, closely working with universities (Pawson 2006). In 1999, a White Paper published by the British Cabinet Office reports that implementing evidence-based policies enables it to achieve the long-term policy goals (Cabinet Office 1999).

The fact that government-own data in the UK was not being properly utilized in research for policy has been an urgent issue for the government to address. The ADRN is designed as a way to answer the question, "How can we effectively utilize

numerous evidence that governments have accumulated for policy research? In order to link administrative data and research, four administrative data research centers (ADRC) were established in four different regions in the UK. The collaborative governance of the ADRN is characterized by a dual structure; one is large governance of the ADRN, the other small governance of the ADRC.

For the ADRN, the ADRN decision-making group includes representatives of the Board of Directors, Director of the Center of the four ADRCs, ESRC members, and representatives of operating organizations to make decisions related to network operations. The decision making groups share the main vale of "evidence-based policy" and make decisions on a basis of the shared value. Whereas upper levels of stakeholders (i.e., network's board) in the ADRN governance structure discovered and defined the shared value, the ADRN decision making groups continually discuss and deliberate to make right decisions. The head of the network's board is appointed by the National Statistical Authority and its main role is to promote policy research to meet the public interest through the linkage of various administrative data. The Board serves to inform Congress and the people of their activities and achievements through statistics. In a nutshell, the main role of the network's board is to discover and define the social values that the ADRN has to produce and to make macro-level decision on important ADRN matters.

As a second highest decision making group, the Directors group consists of the representative of the Board, four Directors of the ADRC, ESRC members, and representatives of operational organizations to make decisions regarding network operations. In this sense, the Directors group is a real decision making entity of the ADRN management, having authority to make decision on comprehensive operational matters in the ADRN. The Board mainly makes a big picture ('discovery' and 'definition') in terms of the ADRN, and makes operational decisions within the strategy the Board defined and discovered.

〈Figure 2〉 The Principled Engagement Property of ADRN Governance
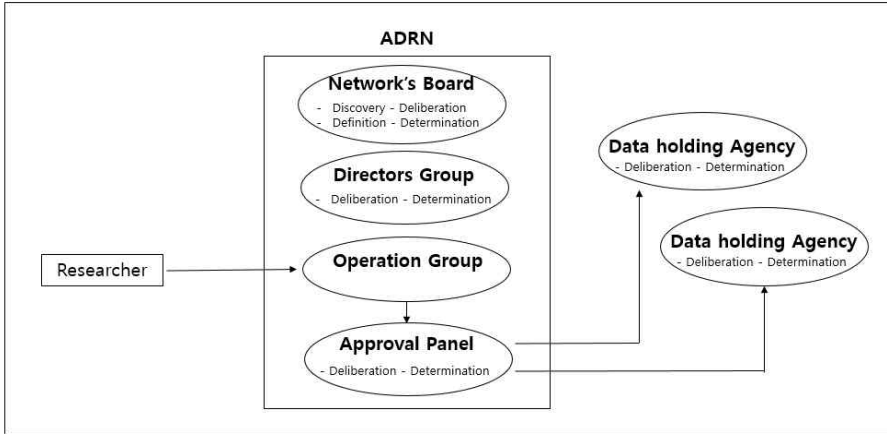
The operation group composes two people each from four ADRCs, and two people appointed by the ADS. The role of this group is to carry out decisions the Director's group made and to implement ADRN's annual operation plans. The operation has no such function as discovery, definition, deliberation, and determination in term of collaborative tasks. The approval panel (AP) decides whether the ADRN primarily will approve opening administrative data once researchers request the data. The AP deliberately reviews a research proposal proposed by a researcher, judging whether or not the research needs social demands, can create social values, and the requested data is suitable for the study. If the AP makes a decision on opening the administrative data to the researcher, a second review will be made by data holding agencies (Administrative Data Research Network 2012).

Data holding agencies are an independent decision maker in this governance, which implies that the AP's approval does not necessarily guarantee that data holding agencies should reveal their own data. Data holding agencies have no obligation to disclose the data they hold, only following their own decisions in terms of opening administrative data. Thus, for researchers, they have two independent decision processes to obtain data for research. Nearly all entities involved in

governance have a variety of functions of deliberation and determination, from the network's Board mainly concentrating on discovering and defining the macro-level of the ADRN strategies to data holding agencies with an emphasis in deliberation and determination. This indicates that principled engagement is applied to this collaborative governance system.

2) Shared Motivation

In order to examine the shared motivation side in the ADRN governance system, the relationships among the three parties including a data holder, data processor, and data provider are depicted in Figure 3. The important role of the three governance parties is to provide to a researcher a single data file that incorporates data from multiple agencies while protecting personal information about individuals that make up the data. As there is inevitably a risk of personal information leakage in the process of combining multiple data on an individual basis, the mutual trust among participants is required. Without strong mutual trust among participants in ADRN governance, data would not be properly processed and delivered to a client or independent researcher.

Once the AP approves a research proposal, the ADRN negotiates with government agencies that collect and hold data for opening the agency-own data. An agency owing administrative data has to make a decision independently irrespective of the AP approval. If the agency decides not to reveal the data, the ADRN will accept the decision and report the decision to the researcher who requested the data,[3] and the researcher will fail to obtain data and conduct his or her proposed research. A data holding agency consider all the factors in determining data open, primarily taking privacy protection into account. For privacy protection, a unique data management process has been adopted, in which the three entities—

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[3] An Interview with the Director of the ADRN shows that this has ever happened yet. He mentioned that data owned agencies have a confidence in protecting privacy in the process of data management by the TTP and the ADRC.

data holding agency, the trusted third party (TTP), and each ADRC⁻ cooperate on a basis of trust and commitment KIPA 2016).

〈Figure 3〉 Shared Motivation Property of ADRN Governance
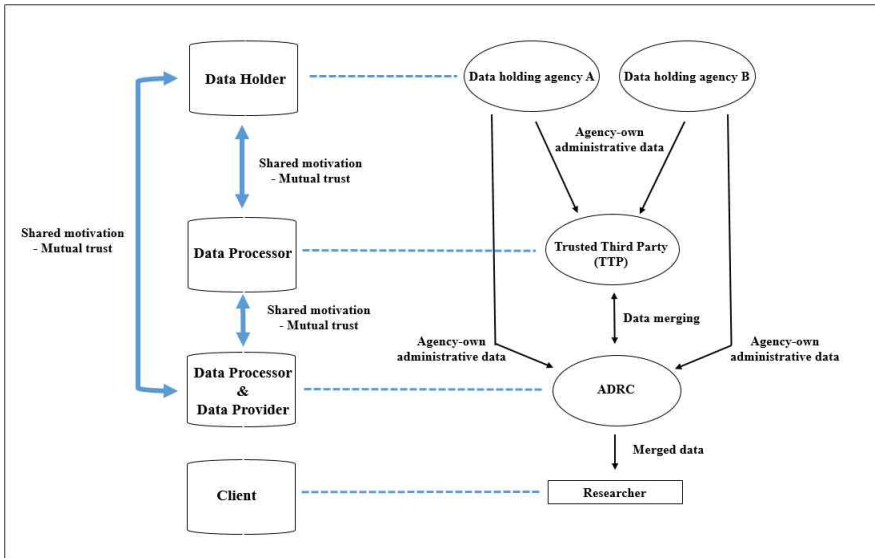
A data holder or agency owns all the information in the dataset including private and general information⁻but does not provide all the data to the TTP that is mainly responsible for merging the data. This is to make sure that not only researchers but also the TTP staff in charge of combining the data cannot identify who is who in the data. The data holding agency separates the personal identifier form the data the agency intends to disclose, generating and saving a reference number corresponding to the personal information in a new data file. The data holding agency provide to the TTP the data file that contains only personal identification and reference number information. The TTP links administrative data of different data holding agencies based on personal identification information and unique numbers, during which the data subject's personal information can be protected from the operator of the TTP that connects the data because the TTP does not receive any information

other than the individual identification number (Administrative Data Research Network 2012).

When administrative data from different agencies are integrated into a single data file, the TTP removes personal identifier and send the data file with only a unique number information to the ADRC. Based on the unique number information, the ADRC will match the variables of the administrative data, removing the unique number and providing the merged data file to the researcher (Administrative Data Research Network 2012). The data holing agency, the TTP, and ADRC differ in their access to administrative data, making it impossible for personal information to be inferred in the process of merging multiple data. Finally, a researcher will only be provided with data containing the main contents that have no individual information necessary for his or her research (Administrative Data Taskforce, 2012).

In general, when data held by multiple agencies need to be merged, the privacy issue of data subjects inevitably tends to emerge—this is also true in Korea. The agency is reluctant to disclose its own data because of personal information protection problems. No one will be willing to do this without mutual trust among governance participants because the responsibility for the leakage of personal information is critical. There is no obligation of disclosing data for agencies, nor laws or rules to force them to reveal the data. Thus, data holding agencies can turn down for a reason of privacy protection, but they readily provide requested data with a sense of trust and commitment. The TTP as a data processor and the ADRC as the data processor and provider, trusting one another, have also a sense of commitment that their management processes contribute to establishing an evidence-based policy which creates societal and economic values. Therefore, this data management process can be accounted for by shared motivation of a sense of trust and commitment among governance participants (KIPA 2016).

3) Capacity for Joint Action

As mentioned earlier, capacity for joint action involves four elements such as

institutional arrangements, knowledge, leadership, and resources. This particular entity relates to management practices within governance, especially fitting well with ADRC operations in ADRN governance. As shown in Figure 4, each ADRC has three types of partnerships—a partner university, other universities near the ADRC, and public or not-for-profit research institutes. The Director of each ADRC is appointed as a faculty member of the partner university, taking responsibility for directing and managing the ADRC.

Under the leadership of the Director, resources (i.e., facilities) are shared to efficiently provide merged data to a researcher. The researcher requesting data can make the use of data for analysis with help from staff in a highly secured place in the ADRC. The secured places are designated in several places within the ADRC, which is possible because facilities are shared with each other. If only one secured place exists in each ADRC, a client (or researcher) will be uncomfortable because she has to go the specific place, no matter how far away she is from her working place or home. The researcher, however, can make a choice of a secured location at her own convenience because there are several places in each ADRC. Sharing facilities makes clients convenient for analyzing the requested data. In addition, a variety of technological instruments including computer hardware and software in a facility are shared between the ADRC and its partner university or other universities (or research institutes).

In addition, knowledge is shared in the form of providing education and academic seminars in the governance system. First of all, the ADRN has an education program of the ADRN Accreditation Training program for researchers who requested data. Second, each ADRC has its own training programs and seminars for researchers or graduate students (Administrative Data Research Taskforce 2012). Faculty members or researchers in ADRC affiliated institutions deliver a lecture or hold seminars for clients or graduate students, disseminating and circulating their knowledge to a wider range of governance. Inversely, a researcher sometimes presents to ADRC faculty members or graduate students their research findings based on merged data supplied by the ADRC. Thus, knowledge is being widely

shared among stakeholders in this specific governance.

Governing rules as procedural arrangements were systematically designed for each ADRC to carry out its operations uniformly. The four ADRCs have same procedure rules for providing merged data to clients, and among them, the most important procedure is an analytical procedure. Under the rule, each ADRC should use an isolate security facility for access to data and deploy staff to help clients. Researchers who requested data cannot make the use of the data indefinitely, accessing the data only in the secured facility with the help of staff and not allowing them to carry any personal belongings with them when they go into the facility. Once the researcher completes analysis of the data in the secured place, the staff in the facility safely processes analytical results and then forwards them to the researcher. After a researcher finishes up conducting analysis, the ADRC stores data permanently. It appears that the data analysis process is more rigorous than the data matching process in four ADRC locations. As soon as a researcher completes analysis, the ADRC should keep data permanently. The main function of ADS in the ADRN is to coordinate between the ADRN and ADRCs, guiding the four ADRCs to conform with the procedural rules.

So far, ADRC operations were examined with the perspective of capacity for joint action in CGR. It is shown that human /physical resources and knowledge are widely shared among governance participants, and that each ADRC sticks to the procedural rules under the leadership of the Director of the ADRC.

〈Figure 4〉 Capacity for Joint Action Property of ADRN Governance
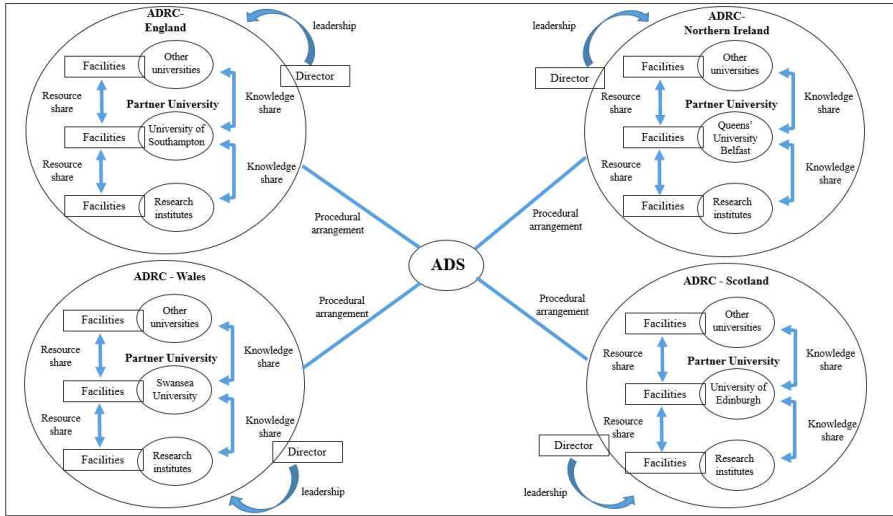
Ⅳ. Conclusions and Implications

An integrative framework for collaborative governance (IFCG) proposed by Emerson and her colleagues (2012) is considered to be a useful tool to assess good governance. This study examined the ADRN data governance system with this framework, particularly with a collaboration dynamics dimension: principled engagement, shared motivation, and capacity for joint action. Given that the ADRN is regarded as good governance in the UK and the framework fits well with the ADRN case, the IFCG lens is a useful means to analyze a governance system in practice and can be used as a gold standard in developing governance. The ADRN plays a crucial role in establishing evidence-based policies by providing researchers with useful data combined from multiple government agencies, ultimately creating social values in the UK.

This case study has some implications for building data governance in Korea. In 2013, Korea enacted the Public Data Act to actively open public data to the citizens.

Under the Public Data Act, government agencies and public institutions have been required to have a responsible officer in charge of the work on the provision so that the data generated by the agencies could be uploaded on their websites for easy access to the public. In addition, a public data strategy committee was established to review the government's major policies and plans, and to play an active role in opening administrative data.

Despite these efforts, data disclosure is being very passive for a reason of privacy and public agencies are reluctant to reveal useful information for both citizens and researchers as much as possible. Unlike the ADRN, the Public Data Act focuses on revealing the single data an agency owned to the public in Korea. When a client wants multiple data owned by different agencies, they should request data separately to each of the relevant public agencies, which is very time consuming for clients, and more importantly, which makes it impossible for them to merge multiple data from different agencies to a single one. This makes it difficult to multidisciplinarily analyze and utilize data in a way that complex solves social problems (e.g., health data + taxation data).

Our passive data disclosure systems need to be examined with the collaboration dynamics concept in the IFCG perspective. Currently, government agencies are producing and owning administrative data in Korea, but none of the agencies substantially play a role in integrating data form all agencies. We have to think about following questions: do policy makers define the concept of what is the desirable state of society due to administrative disclosure? ; do they try to discover the new way of revealing administrative data? ; do they really think over and make an effort to determine based on their discovery?

One of the reasons why administrative data is being released passively in our country is because of privacy leakage concerns. The ADRN's shared motivation of mutual trust among governance participants for the protection of personal information is worth our reference. We need to benchmark the ADRN case and try to redesign our data governance to enable data from multiple government agencies to be integrated into one while minimizing personal information leakage concerns.

In order to do so, mutual trust among government agencies owning administrative data is required, and also this holds true for the relationship between data holding agencies and clients such as researchers.

The most innovative feature about ADRN governance is sharing knowledge and resources among the various governance entities. On the other hand, the administrative data disclosure system in Korea is managed by a single entity, *the individual government agency*, with limited staff and resources. By closely collaborating with universities or research institutes, the government can make its budget reduced, and in fact, cooperation between government and universities or research institutes is worth more than resource sharing. More importantly, this type of collaboration allows researchers to conduct cutting-edge research by readily providing administrative data to researchers while, in return, they give useful research findings back to society so that the society can develop (Penner and Dodge 2019). Thus, policy makers in Korean government need to take *capacity for joint action* into account in establishing data open governance that takes advantage of non-governmental resources and knowledge.

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요약 및 주제어

통합적 거버넌스 분석틀을 활용한 거버넌스 사례 분석

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이 논문은 좋은 거버넌스가 무엇인가? 라는 질문에서 시작되었으며, 2012년 Emerson과 동료들은 거버넌스 분석을 위한 이론적인 분석틀(Integrative Framework for Collabroative Governance: IFCG)을 제시하였다. 이 분석틀을 활용하여 데이터 거버넌스의 하나인 영국의 Administrative Data Research Network (ADRN)을 좋은 거버넌스의 사례로 분석하였다. 4차 산업혁명 시대에 공공 및 행정데이터의 중요성은 시간이 지날수록 높아지고 있다. 이러한 데이터는 시민을 위한 유용한 정책 수립에 중요한 역할을 하며, 데이터 거버넌스 인프라는 시민들의 지식을 향상시키는 동시에 한계비용을 절감하고 있다. 영국의 ADRN은 정부가 보유하고 있는 데이터를 연구자들에게 효과적으로 제공하는데 모범적인 거버넌스로 평가받고 있다. 본 연구는 이IFCG 관점으로 이 거버넌스 사례를 평가하였다. IFCG 관점에서 세 가지 개념인 원칙적인 참여, 공유동기, 공동행위를 위한 역량으로 ADRN 사례가 적합하게 설명되었다. 따라서 이 분석틀은 거버넌스 사례를 평가하기에 유용한 기준임을 알 수 있었다. 분석결과를 기초로 국내 행정자료의 데이터 거버넌스 확립에 대한 시사점을 제시하였다.

[주제어: 거버넌스, 협업, 행정데이터, 협력적 거버넌스]