

The Future of Local Governance for Appropriately Adapting the Ride-Sharing Platform:
Case Study of Seoul, New York, and Maryland

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Author Note

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Abstract

Ride-sharing platforms have challenged existing public vehicle for hire governance in two aspects: jurisdiction issues and internalization of regulatory functions into the firm. In this study, we looked at three types of governance that manage local vehicles for hire: hierarchy, market and network. However, it is hard to say that any of the three types hierarchical, market or network are always better.

In this research, public goods provision and regulatory management governance in Seoul in Korea and New York City and Maryland in the U.S. were compared, respectively, with examples of hierarchical, market and network governance. To analyze this, Institutional analysis and development framework was used. This framework analyzes institutions by three levels of action, collective choice and constitutional choice, in which the vehicle for hire governance is divided into four tiers according to the authority that accepts and delivers information. This disaggregation allows to compare how the actors communicate and accept information at each level in each governance.

In conclusion, hierarchical and market governance have the same structure, with regulatory bodies or entities monopolizing the collective choice process, but they have different regulatory actors. However, in network governance, regulators and stakeholders discuss collective choice equally. Stakeholders who wish to intervene in regulatory hearing can participate at any time. Therefore, in the process of regulating the ride-sharing service, network governance has a well-accepted system of innovation information and public needs. On the other hand, hierarchies and markets do not explicitly have a system of effective acceptance of various information.

The Future of Local Governance for Appropriately Adapting the Ride-Sharing Platform: Case Study of Seoul, New York, and Maryland

The ride-sharing service is one of the most controversial innovation services of the 2010s. This service has shaken the regulatory rationale of the taxi service and provided passengers with a better experience than taxicabs (Cramer and Krueger 2016). However, public pressure has also increased to regulate ride-sharing companies (Dickinson 2018). As a result, a number of firms have repeatedly negotiated with their state or local government or have repeatedly engaged in confrontations and lawsuits with them. Ride-sharing platforms have challenged existing public governance in two aspects: jurisdiction issues and internalization of regulatory functions into the firm. The innovation of ride-sharing platform has redefined the boundaries of the market and regulatory bodies, both of which have become unclear due to the innovation.

In this study, we looked at three types of governance that manage local vehicles for hire: hierarchy, market and network. There has been much debate comparing the efficiency of market governance, with hierarchical governance and, the methods of provision of public goods (Boettke, Coyne et al. 2011). In addition, the supply of public goods through network governance can also be found in many areas. However, it is hard to say that any of the three types hierarchical, market or network are always better. Each country or region provides public goods or manages regulations by selecting their governance according to historical, social, cultural and political contexts (Exworthy, Powell et al. 1999). It is not empirically confirmed that any of these governance methods are always more efficient.

Therefore, in order to compare the supply of public goods and regulatory management governance under certain circumstances, we selected and analyzed cases representing hierarchy, market and network governance using Institutional analysis and development (IAD) frameworks

around information transmission. Hayek (1945) denied the hypothesis that complete knowledge of neoclassical economics could be used, he insisted that plans could not work efficiently in a centralized hierarchical structure. Instead, he concluded that all the information in the market could be obtained only from the price mechanism. However, it is unclear if the price mechanism can collect all necessary information? Adjustment through the pricing mechanism also has an obstacle: time and transaction costs (Coase 1960). There are many experience cases where information, such as environmental pollution and social inequality, does not reach price mechanisms well. Even if we accept Hayek's hypothesis that as much information as possible should reach governance, the question become whether there is a system in the market that can accommodate as much information as possible. In this paper, this case was analyzed to compare how information is accepted in hierarchy, market and network governance.

To analyze this, IAD framework was used. The IAD framework analyzes institutions by three levels of action, collective choice and constitutional choice (Kiser and Ostrom 2000), in which the vehicle for hire governance is divided into four tiers according to the authority that accepts and delivers information. This disaggregation allows to compare how the actors communicate and accept information at each level in each governance.

In this research, public goods provision and regulatory management governance in Seoul in Korea and New York City (NYC) and Maryland in the U.S. were compared, respectively, with examples of hierarchical, market and network governance. In South Korea, the Ministry of Land, Infrastructure and Transport, which has a hierarchical organization, is in charge of supplying public transportation goods and managing regulations. New York City's ride-sharing service was run by market governance before 2018. Since the transportation network company's license number was not limited and its operation was made in a form that was no different from that of

the yellow cab, the platforms effectively disabled taxi regulations in New York city. Maryland is controlled by the Maryland Public Service Commission, an independent regulator, which controls cabs, limousines, for-hire vehicles (FHV) and ride-sharing. The authority of the Maryland Public Service Commission (PSC) is divided between the Commission, the Staff and the Public Utility Law Judge. They constitute network governance that guarantees the participation of various stakeholders in drafting, enforcing and keeping regulations in check and balance.

This study compared the process of Uber regulation in Seoul City, NYC, and Maryland – the process of new technology changes and public demands being accepted in hierarchy, market and network governance – with IAD frameworks.

Ride-Sharing Service Challenges Public Governance

Uber has repeatedly negotiated with state or local government or repeatedly engaged in confrontations and lawsuits with them all around the world. Uber has been banned in some countries and cities (Dickinson 2018). The reason for the controversy over the operation of Uber in many areas is that the business area of their service overlaps with that of taxis, and taxis are generally regulated at the local level (Dempsey 1996). Taxis are generally regulated for entry, price and quality (Rienstra, Bakker et al. 2015). However, a ride-sharing company would be exempt from existing laws and regulations by classifying itself as a sharing economy company or Internet service provider rather than a common carrier (Cannon and Summers 2014, Isaac and Davis 2014). Consequently, regional governance has need to adjust the interests of the entry entity and the existing entity, while at the same time deciding whether to accept the new services, taking into account the consumer benefits of the innovation(Cannon and Summers 2014).

The regulatory rationale for taxi services was to reduce consumer utility due to the absence of competitive markets, asymmetric information, supply imbalances and externalities (Dempsey 1996). First, when using cabs in general, the 'First In, First Out' principle was applied so that passengers could not choose the price or quality of the service. Second, without regulations on the price and quality of taxis, consumers could not fully know the price and quality of the ride. Third, there was a high possibility that supply imbalance would not be able to meet the diverse needs of the region. In the absence of regulations, "cream skimming" could be expressed where and when traffic demand is high – in other words, driving taxis only when they are profitable. Finally, externalities such as congestion and air pollution, which occur when there is no regulation on entry, were also a regulatory rationale that cannot be ignored. For this reason, in many countries and regions, the government or independent regulators regulated taxi drivers' entry and pricing of services.

The ride-sharing service cleared some regulatory grounds of the taxi service and provided better service to passengers. First, the ride-sharing platform leveraged innovative technology to achieve better transportation efficiency than taxis. Uber transported passengers more efficiently than taxis in terms of the capacity utilization rate (Cramer and Krueger 2016). The platform has the potential to eliminate three of the major regulatory reasons for taxis: un-forming in competitive markets, asymmetric information and supply imbalances. Uber introduced a system in which consumers evaluate drivers to form a competitive market and prevent asymmetric information situations (Cohen, Hahn et al. 2016).

Public pressure has also risen to regulate ride-sharing companies. Shared economy companies such as Uber and Airbnb have been defined as neo-liberalistic platform capitalism or gig economy (Morozov 2013, Pasquale 2016, Dubal 2017, Murillo, Buckland et al. 2017, Zwick

2018). Hedge funds, venture capital and investment banks have invested heavily in sharing-economy companies, whose nature has led them to seek regulatory and legal void (Isaac and Davis 2014, Matzler, Veider et al. 2015, Mims 2015, Gregory and Halff 2017). Stemler (2017) argued that unicorns were using sharing frames to neutralize competitors and avoid regulatory burdens. Uber has avoided the employer's obligation to take responsibility in the employment relationship by contracting the driver as an independent contractor, not as a worker, leaving Uber drivers to bear both the risks and costs of passenger operation. The ride-sharing platform has no limit on the number of driving licenses, causing traffic congestion as too many vehicles are driven (OfficeoftheMayor 2016, Schaller 2018). Some have criticized that Uber operates algorithms that have not been checked by the public by itself (Calo and Rosenblat 2017). Uber avoided labor laws by signing drivers as independent contractors, but managed them like workers in effect, using various methods to control their drivers. Another problem has been that Uber's Surge Pricing passed on unconscionably excessive prices to consumers in the event of an abnormal disruption of the market (NYAttorneyGeneral 2014).

The ride-sharing platform challenged existing public governance in two ways. First, public governance had to determine whether the platform was included in its jurisdiction. The firms have defined themselves as an Internet service provider, arguing that there is no reason to be regulated by existing public regulatory agencies (PSC 2013). Thus, regional regulatory governance has either redefined the regulatory framework or required a ride-sharing platform company to comply with their rules. Second, the company sought to internalize the pricing and driver's license authority exercised by existing regulators. The regulator had to decide how to divide the authority to determine rules for regulatory management with a ride-sharing company.

To sum up, regulators faced the problem of redefining market boundary compartments and the right to decide rules, which have become unclear due to innovation.

Which is Better: Hierarchy, Market, or Network?

In this paper, the type of regulatory governance that regulated vehicles for hire was divided into three types: hierarchical, market and network. Hierarchical governance is determined entirely by how vertically organized government organizations supply public goods or regulate them. In market governance, rational actors with complete information are social equilibrium by exchanging goods and services according to demand and supply signals without any intervention. Network governance refers to governance in which various members of the network, including governments, businesses, and consumers, build a reciprocal credit structure through repeated interactions (Exworthy, Powell et al. 1999).

Boettke, Coyne et al. (2011) summed up the debate between the government and quasi-markets when supplying public goods. The neoconsolidationist, who inherited Woodrow Wilson (1885)'s idea, argued that a government with a centralized and hierarchical system was efficient (Yun 2008). On the other hand, polycentrists saw an efficient supply of public goods in quasi-markets, rather than in a centralized government, based on Tiebout's hypothesis. Tiebout (1956) argued that local governments that provide various tax and service packages within large cities, such as the efficient allocation of resources in a fully competitive market, could result in the migration of residents and the provision of local public goods efficiently. Oates (1969) noted that similar markets formed in competition between local governments that internalized externalities could provide an efficient supply of public goods. Tiebout and Oates's arguments have become the main theoretical ground of the polycentrists. On the other hand, neoconsolidationists criticized

Tiebout competition in the supply market for public goods, saying that it does not work in practice.

The theorists that studied the potential of quasi-markets to address inefficiency in the supply of public goods had a significant influence on actual public governance. One example was the attempted transformation of public goods governance into a quasi-market in the UK in the late 20th century. After World War II, Britain supplied various public goods, such as education, health care and welfare, in a hierarchical, centralized manner (Le Grand 1991). In the late 1980s, the Conservative Party of the UK assessed that this system had lost the efficiency of provision and attempted to work out the implementation of a quasi-market to fix the public goods delivery system. In order to form a quasi-market based on Tiebout's hypothesis, the British government limited the role of the authorities, made suppliers of public goods compete, and enabled consumers to choose from among them.

The South Korean government introduced market governance to solve the problems caused by its own developmental state system. Amsden (1992) explained South Korea's rapid economic growth using developmental state theory. The developmental state planned economic policies and actively intervened in the market in order to improve the country's growth and competitiveness and productivity of corporation (Johnson 1982). A small number of elite officials created these plans to coordinate and operate the market. The South Korean government also used to provide public goods and controlling labor as a means to achieve its economic goals. (Gereffi and Wyman 2014). Excessive economic intervention and regulation by the state produced many negative consequences, and both businesses and civil society called for changes in the regime of developmental state (Park 1998). South Korea was forced to adopt a neo-liberalistic economic system in 1998 on the requirement of receiving a bailout from the IMF.

Under these internal and external pressures, the Korean government sought to reduce its intervention in the private market and, at the same time, introduced a competitive market in the provision of public goods. However, the introduction of market elements has changed the way the nation intervenes through re-regulation, instead of failing to reduce the role of the Korean government (Kim, Park et al. 2010).

However, it has been difficult to confirm that the conversion of governance from a hierarchy to a quasi-market has substantially improved the efficiency of delivering public goods in South Korea. Above all, it is necessary to look at the history of U.S. regulators as a process in which they have expanded the role of government or developed independent regulators to correct market failures. The administrative system of the United States developed in accordance with the pluralistic view of the state, and under the influence of Locke, it was emphasized that state intervention was needed in a limited way (Waldo 1980, Sur 2014). Independent regulators developed to correct market failures in the railway industry after the Civil War (Joskow 1974, Breger and Edles 2000, Holburn and Bergh 2006). It was believed that only government-independent experts could make logical and scientific decisions based on empirical data. Thus, with independence as the highest priority, the Interstate Commerce Commission (ICC), an independent regulator, was created. Since then, independent regulatory agencies in each state, which modeled the ICC, were in charge of supplying public goods and managing regulations.

After the oil crisis, at 1970s, the U.S. independent regulator became a form of network governance that embraced many stakeholders. This was the result of a historical coincidence created to solve specific problems, rather than a solution based on theoretical grounds. Before the oil crisis, U.S. state regulators intervened passively in the market, except when prices of public goods rose exceptionally high (Joskow 1974, Joskow 1979). However, from the late 1960s and

early 1970s, regulatory agency began to actively intervene in the review process of rate of return for provider of public utilities. Power companies asked the public utilities commission (PUC) to raise power prices in response to the sharp rise in oil prices that reduced their rate of return. Consumer groups and politicians also opposed price hikes out of concern over inflation. In addition, as the environmental problem has become more serious, environmental groups intervening in the regulatory commission's review process to determine energy prices have become more complicated. When a review was under way, other price reviews had to come in a series, and regulators had to find ways to determine rate of return quickly and efficiently. These complex problems were solved by the Regulatory Commission with Rules of Thumb. This principle has been applied quite well in the reviews in which problems of unpredictable variety occur. It has found useful consensus structures and regulatory techniques while repeatedly reviewing them for a long time. Several leading states commissions in New York, Wisconsin, and California have conducted regulatory experiments. Other states repeated the process of imitating the successful regulatory techniques they created.

The UK and other European countries have not had as many positive effects from the transition of governance to quasi-markets. These countries have introduced network governance based on the model of U.S. independent regulators. However, the UK government could not confirm the efficiency improvements resulting from the conversion of the public utilities delivery system to quasi-markets (Le Grand 1991). The transition from a monopolistic to a competitive system caused the quality of welfare services to decline as suppliers cut costs on the grounds of price competitiveness. In comparison, the cost of advertising marketing and labor costs, which are not related to the quality of the service, has increased. Quasi-markets have certainly not been formed in the UK public goods supply system (Exworthy, Powell et al. 1999). This was because

the monopoly and oligopoly created no proper competition among producers. In Britain, where the efficiency of quasi-markets was not assured, the government supplemented them with network governance (Sur 2014). The British government introduced a representative independent regulator and turned it into a long-term partnership and collaboration instead of signing short-term contracts with suppliers. Various stakeholders were guaranteed to participate in the governance, and informal relationships were recognized as part of the network.

In Korea, some network governance was introduced to ease the authoritarian political system. South Koreans called for democratization, ending their military dictatorship in 1987 and electing a president who was not in the military in 1992. The Korean government could no longer control labor in a coercive manner and mobilize its people in a top-down manner. Accordingly, the government elected after the military dictatorship launched various committee structures. However, Korea's provision of public utilities is still an extension of the way of a developmental state (Kim, Park et al. 2010).

Comparison of Information Acceptance Using IAD

With provision of public utilities and regulatory management, it is difficult to conclude that any particular governance always has better efficiency. Each country or region provides public goods or manages regulations by selecting their governance according to historical, social, cultural and political contexts (Exworthy, Powell et al. 1999). In Korea, the government provides or manages most public goods or services, namely public transportation, health care and education. But in some areas, innovation has been delayed according to the nature of the hierarchical organization, where the rent seeking was created, and the regulatory agency was captured by stakeholders. It has not been empirically or theoretically confirmed that any of these

governance methods are always more efficient. However, the characteristics and effectiveness of each governance can be compared by limiting it to a particular situation and for a particular purpose.

This paper compares the information acceptability of each governance in limited situations. (Hayek 1945) denied the hypothesis that complete knowledge of neoclassical economics could be used, insisting that plans could not work efficiently in a centralized hierarchical structure. He argued that an individual could not know all the information involved in the price mechanism, and furthermore, the centralized planner did not have the complete data needed to solve the economic problem. He suggested the full use of information spread around the world as a criterion for comparing the efficiency of centralization and competition. However, Hayek concluded that competition is more efficient because almost all of the information is delivered to the price mechanism in the process of countless individuals challenging the market countless times based on the information collected in their limited field.

However, it is unclear price mechanism actually captures all the necessary information. First, using the price mechanism also requires time and transaction costs. (Coase 1960) noted that social problems could be solved naturally if there were no transaction costs when externalities occurred due to market behavior. However, in the real world, externalities may not be remediated on their own because transaction costs exist, and it may take a very long time to actually calibrate. Second, it can be empirically observed that information does not reach the price mechanism. Environmental pollution and social inequality are good examples of this. Information that should be delivered to procedures for provision of public utilities or managing regulations is not the only information needed to determine price and supply. For social equity and social integration, external market information should also be delivered to governance. This

information is difficult to communicate or not communicated through the pricing mechanism. Thus, even though Hayek's assumption about information have been accepted, the price mechanism were not the only ones that could efficiently absorb the information.

In this paper, IAD frameworks were used identify the process in which each governance acquires various information in society. The IAD framework analyzes how the rule system or physical conditions of an organization affect the behavior or motivations of its members (Ostrom 2010). The level of institutional analysis in IAD is divided into three levels: operational, collective choice and constitutional choice (Kiser and Ostrom 2000). Under this framework, the institution is embedded in a higher level of the institution, with each level closely linked. The operational level is where the actors perform their daily activities. This is the only dimension in which an individual's decision becomes a direct action to the physical world. Here, individuals act directly or strategically for the future. Actions are constrained by rules established by collective and constitutional choice. Collective choice is the public's choice of decision, coercion, continuation, and transition under the authority of existing plan contracts. Collective choice is for the community and its representatives to make decisions, coercion, continuation, or conversion. under the authority of existing institutional contracts. The collective choice level is similar to the operational level in action arena in that it is a plan for the future, but it is different in that collective choice is enforceable. The decision maker of the collective choice may choose the proposed rules or the candidate who performs the results of the choice. Collective choice is usually made through a symbolic action, such as voting. The constitutional choice level selects the institutional arrangement of collective choice, which provides the ground for defining the range of choices and actions in the collective choice.

Kiser and Ostrom (2000) wrote that these three dimensions can explain a wide variety of situations, which can be applied to governance of the vehicle for hire industry. At the operational level, taxi companies, ride-sharing companies and taxi or ride-sharing drivers provide passenger services. Public agencies or firms that manage them screen drivers, monitor compliance with regulations and punish them according to laws and regulations. Consumers act by deciding whether to use transport services. Generally, collective choice is performed by regulatory agencies. Regulators move within the regulations and laws chosen at the constitutional level. The agency mainly plays an administrative role in interpreting and enforcing specified laws and regulations and punishing rule-breaker. In some cases, the agency performs quasi-legislation and quasi-judicial functions to a limited extent. As a constitutional choice, the supreme law for vehicle for hire services is established. Regardless of what public governance has been chosen, it is up to the government – through the legislative process, the executive and legislative branches set the market definition, entry of business, price authority, rule of actors participating in collective choice, and the authority to monitor, execute and punish. The judiciary passively coordinates and adjudicates disputes. Compared with collective choice, constitutional choice has a large number of participants, and may involve unanticipated stakeholders.

In this study, actors were classified by the right to accept and deliver information in the vehicle for hire governance. Kiser and Ostrom (2000) created diagrams of the factors that influence the level of action, the level of collective choice and the level of constitutional choice. They explained that the choice of the constitution is made through symbolic actions such as voting, which affect the participants of the vote and the constitutional choice situation. Individual voting members and situations were affected by the interaction of institutional arrangements, events, and community.

This research, we will simplified the various factors presented by Kiser and Ostrom (2000) into the act of conveying information and the actors performing it. We will suggest that actions and actors differ in the degree to which they affect the institutional choice. The path through which information in society is conveyed in governance varies, where information is acquired selectively depending on the path of information delivery and the actors. The process of acquiring selective information is an example of the legislative process. In a democratic country, legislation is decided by the vote of a legislator. In some countries, however, the administration has a strong influence on the legislative process. For examples, lobbyists, who represent various interest groups, try to influence lawmakers. In addition, the people also exert pressure on the legislature by creating public opinion or voting. Each country defines the extent to which lawmakers, administrations, lobbyists, stakeholders and citizens participate in the legislative process. They also make provisions to enforce, monitor and punish. Such rules constrain the scope of information that an actor can convey, and sometimes forces the acceptance of information.

Actors who can intervene in the legal deliberation process are also different from country to country (Yi and Hong 2017). When a bill is referred to standing committees and subcommittees of the parliament, these committees hold public hearings and review the bill. The bill is then deliberated and put to a vote at a plenary session. In a bicameral system, a bill passed by one parliament is redone and deliberated by another. The scope of stakeholder or expert participation in public hearings is also different. In the United States, lobbying by lobbyists is legalized, but in South Korea, the activities of lobbyists are not officially recognized. In France, Congress goes through a process to collect public opinions through “*etudes d'impact des*

lois”(Jeon 2010). To sum up, each country has different rights of actors to intervene in the choice of the institution, and different ways of collecting and communicating information.

Actors can be classified based on the degree of intervention in collective and constitutional choice in which they participate and the right to delivery information. For example, at constitutional choice level, legislative members can be called Tier 1 actors. They can collect information, propose legislation, and decide whether to legislate or not. Tier 2 actors are administration officials. They have limited information collection authority and high expertise, and can conditionally submit legislation. The next ranked, Tier 3 actors are usually stakeholders. They help in the process of submitting bills or actively express their opinions at public hearings. And they hire lobbyists to try to influence the actors of Tier 1 and Tier 2. Tier 4 can be defined as a voting bloc that elects a lawmaker or president to influence the choice of institutions in an indirect way.

Cases of Seoul, New York City, and the State of Maryland

In this research, we considered the public governance of Seoul in Korea and New York City and Maryland in the United States as representative examples of hierarchy, market and network governance. Seoul is a representative state that operates vehicle for hire services with hierarchical governance. In South Korea, The Ministry of Land, Infrastructure and Transport and the Seoul Metropolitan Government, the administration's department, are in charge of the main tasks related to the supply of regulations. They manage taxi licenses to determine whether companies and drivers enter the market, and price decisions are made through consultations between the government and taxi suppliers.

New York City's ride-sharing service was managed in market governance from the start of Uber operations in 2011 until 2018. Yellow cabs in NYC have often been cited as a prime example of the rent-seeking (Krueger 1974). But since the 1980s, the difficulty of availability of taxi rides has been partially resolved as the For Hire Vehicle (FHV), which is not allowed to hail on the streets and can only be called, has been allowed (Schaller 2007). The FHV was able to operate by registering with the Taxi & Limousine Commission, and there was no limit on the number of licenses, regardless of license or medallion. In 2011, Uber began operations in NYC by registering Uber drivers as FHV drivers. Uber was able to operate regardless of existing regulations because it registered as a FHV (Schaller 2018). From a consumer's point of view, Uber is no distinction from yellow cab's street hailing, so the ride-sharing service virtually disabled taxi regulations in NYC. Uber's operations had been in a state of market governance away from public taxi regulations until regulation was introduced in 2018.

Maryland transportation regulations are managed by the Maryland Public Service Commission (PSC), which is an independent regulator, responsible for the management of taxis, limousines, FHVs and ride-sharing. The Maryland PSC's authority is divided into legislative, administrative and judicial by the Commission, staff and Public Utility Law Judge Division. They are network governance in that they check each other in drafting and, enforcing regulations and punishing rule-breakers; the system ensures the participation of various stakeholders.

In this study, the information acceptance process of each governance was compared through the regulated processes of Uber entering Seoul, New York City and Maryland. For Seoul the period from when Uber Black first operated in 2013 to when the law regulating it was revised and its follow-up measures were taken was analyzed. In Maryland's case, the following were analyzed: PSC Case No. 9325 where PSC argued over whether the ride-sharing service was

within its jurisdiction(PSC 2013); RM 55 which amended Code of Maryland Regulation § 20, a related regulation under the judgment that it is within the jurisdiction of the PSC(PSC 2015); and SB0868 hearing in which the Maryland Congress revised the Md. Public Utilities Code § 1-101 (MarylandGeneralAssembly 2015). For the NYC case, we analyzed from the start of Uber's operation in 2011 until the city council revised the 2018 Administrative Law to regulate ride-sharing.

Seoul: Hierarchy¹

In Seoul, Uber launched Uber Black's service in June 2013. The Ministry of Land, Infrastructure and Transport (the MLIT) and the Seoul Metropolitan Government, which were in charge of the regulation, were unable to regulate Uber's service due to lack of relevant laws. Meanwhile, Uber launched the service of Uber X, a similar class service with taxis, in August 2014. Then, the Seoul government declared Uber X illegal, filed a complaint against Uber X, and pushed for the cancellation of Uber Korea's business registration. They asked the Fair Trade Commission to review Uber's app terms and conditions, and they asked the Korea Consumer Agency to investigate whether Uber's surge pricing system violated consumer rights. In the same month, Uber, the MLIT, the city government and taxi officials met to seek cooperation, but they failed to reach an agreement. Meanwhile, Uber Korea did not stop its service despite threats of sanctions.

¹ The process of introducing Uber in Seoul, Korea, is a compilation of various Korean media articles.

The city of Seoul and the MLIT presented legislation to lawmakers in coordination with taxi representatives. Accordingly, three 'Improvements to the Passenger Automobile Transport Business Act' were proposed by lawmakers in October 2014. The amendment included the prohibition and punishment of pseudo taxi businesses not specified in the current act and the establishment of a new provision for reporting rewards for pseudo taxi operation for effective monitoring and punishment. All of these bills were merged without dissent, passed by the subcommittee in March 2015 and passed by the plenary session in May 2015. Soon after, the Seoul Metropolitan Council passed an ordinance to specify Uber's monitoring and punishment in detail and provide budget support based on a revision enacted by the national parliament.

Separately, in December 2014, prosecutors indicted Uber Technologies and a rental car company that was operating under a contract with the company on charges of violating the Passenger Automobile Transport Business Act. Uber proposed a driver registration system to the city of Seoul and the MLIT in February 2015, but they rejected it. Instead, the Seoul Metropolitan Government allowed Uber Black, a luxury call taxi, to operate. As a result, Uber stopped its Uber X service in March 2015, and only Uber Black operated legally.

Seoul	Tier 1	Tier 2	Tier 3	Tier 4
Constitutional Choice	<ul style="list-style-type: none"> ● President (Promulgation of the law, Approval of enforcement ordinances, Appointment of members of the Cabinet) ● Lawmakers (Decision on the legislative bill) ● Cabinet meeting (Approval of enforcement ordinance) 	<ul style="list-style-type: none"> ● Ministry of Land, Infrastructure and Transport (Draft the Bill/Enforcement Ordinance) ● Prime Minister, relevant State Councilor, Ministry of Government Legislation (Advice) 	<ul style="list-style-type: none"> ● Taxi Policy Review Committee ● Stakeholders ● Specialists 	<ul style="list-style-type: none"> ● Citizens
Collective Choice	<ul style="list-style-type: none"> ● City council member (Deciding on ordinance) ● Market (Promulgation of ordinance, making local administrative rules) ● Ministry of Land, Infrastructure and Transport (Making enforcement rules) 	<ul style="list-style-type: none"> ● Ministry of Land, Infrastructure and Transport ● Seoul Metropolitan Government 	<ul style="list-style-type: none"> ● Taxi Policy Review Committee ● Stakeholders ● Specialists 	<ul style="list-style-type: none"> ● Citizens
Action	<ul style="list-style-type: none"> ● Prosecutors, police ● Taxi Corporation 			

-
- Uber
 - Driver
 - Consumers
-

Table 1 Hierarchical Governance Structure of Seoul, Korea

Public governance, where Uber is regulated in Korea, is hierarchical. In form, lawmakers and councilors are responsible for legislation, but the actual regulatory process is led by the MLIT and the city government. When the legislature proposes a revision to related laws, it first consults with the Seoul government and the MLIT. The administration has limited rights to regulate related industries independently without being checked by Congress. They can create regulations such as enforcement ordinances only with the approval of the cabinet without parliamentary passage. Although the MLIT does not have voting rights as a constitutional choice, there is a lot of room for actual intervention in Tier 1; for collective choice, it has the right to Tier 1. There is no room for stakeholders and consumers to directly intervene in the process in Korea's public governance. In choice of the constitution and the collective, the legislature and the administration share the power of Tier 1 and Tier 2, while stakeholders and consumers remain in the role of supplying information in Tier 3. Since the president appoints the chiefs of the prosecution and police in Korea, the head of the administration also has the authority to enforce and punish businesses and consumers in the action arena.

This governance structure illustrates the characteristics of a developmental state. Policies are implemented quickly and efficiently in accordance with the state's planning by minimizing any policy delay that may arise in the legislative process and in the course of democratic deliberation. However, because the regulatory process of an administrative body is not transparent, and its authority is excessively concentrated, it is likely that agency will be captured informally by existing stakeholders. Additionally, relatively low-priority issues not considered national tasks, are slow to deliver on governance. There is a lack of a direct path for consumers or stakeholder voices to be communicated, and there is no guaranteed process for stakeholders to

challenge and engage in direct consultation in the process of regulation. Thus, it is relatively unlikely that various information in society will be communicated within hierarchical organizations.

New York City: Market

The symbol of taxis in NYC is yellow cab, which is the street hail taxi. There are also various alternative forms of transportation: livery, FHV, black cab, and green cab, which are FHV that allow street hailing (Schaller 2007, Office of the Mayor 2016). Of these, FHV can be registered with the Taxi & Limousine Commission (TLC) in New York City if the carrier exceeds the specified vehicle standards. Drivers can work as drivers of the FHV if they exceed a certain standard without a license restriction. In 2011, Uber used this FHV system to register its subsidiaries with the TLC as FHV, and Uber drivers operated as FHV drivers.

New York City had a dual regulatory framework until Transportation Network Company (TNC) regulations were enacted in 2018. Since Uber receives a real-time reservation, the market segment that used to be present between the FHV and the taxi disappeared, and they competed in the same market. Yellow cabs were heavily regulated in entry, price, the status of maintenance, the exterior of vehicle, and insurance, but Uber was exempted from almost all regulations. Uber internalized the TLC's routine taxi management tasks as well as the process of collective choice. Uber determined within the company the rules of the driver rating system and surge pricing. Drivers and consumers on both sides of the platform were unable to intervene in the rule-making process.

New York City	Tier 1	Tier 2	Tier 3	Tier 4
Constitutional Choice	<ul style="list-style-type: none"> • Mayor • City council member 	<ul style="list-style-type: none"> • Taxi & Limousine Commission • NYC DMV • Public Advocate • Comptroller 	<ul style="list-style-type: none"> • Stakeholders • Specialists 	<ul style="list-style-type: none"> • Citizens

		<ul style="list-style-type: none"> • State Governor • State Assembly 		
Collective Choice	<ul style="list-style-type: none"> • Uber 	<ul style="list-style-type: none"> • Uber • State Attorney General 	<ul style="list-style-type: none"> • Stakeholders • Specialists 	<ul style="list-style-type: none"> • Citizens
Action	<ul style="list-style-type: none"> • Taxi Driver • Uber Driver • NYPD • TLC • The Uniformed Services Bureau • Consumer 			

Table 2 Uber's Market Governance Structure in New York City

At the collective choice level of ride-sharing, platform companies dominate Tier 1 and Tier 2. At this level, regulators and consumers stay in Tier 3 and cannot intervene in the rule-making process. Drivers and consumers can only send binary signals on whether to use the platform in the action arena. Since the process of information acceptance is completely dominated by Uber, public information is not well communicated to governance, which has resulted in long periods of time to resolve a problem.

A case that illustrates this well is Uber's excessive pricing. Uber's surge pricing system set a rate eight times higher than usual when heavy snow fell in NYC on New Year's Eve in 2011(Shah 2012). As a result, many consumers raised complaints, but Uber did not change its policy(Goode 2012). In December 2013, the Attorney General's office in New York state said Uber's pricing was a violation of the Price Gouging Law(N.Y. G.B.L § 396-r). Uber alters its service rates according to demand and supply under their Surge Pricing algorithm; this rating system has the advantage of meeting demand by making the supply move by region and time. Surge pricing induces supply in areas and times where demand is high. However, the Attorney General's office determined that the system received an unconscionably excessive price under abnormal disruption of the market. Taxis were required to fix rate schedules and notify or consult regulators, but, Uber was able to make steep fare increases based on its own standards when floods, snowstorms, and other the abnormal events occurred. The Office of the Attorney General

investigated Uber under the New York's Price Gouging Law, and in July 2014, Uber and the New York State Attorney's Office agreed to set a maximum price limit(NYAttorneyGeneral 2014).

Uber controls its drivers by manipulating the driver's behavior (Calo and Rosenblat 2017, Scheiber 2017). Uber does not sign an employment contract with the driver, but the company did develop a variety of methods to control the independent operator and manage them like a worker. Uber claims that the driver himself decides whether to operate or not. The reasoning is that if Uber provides information on current passenger demand, this information will determine whether a driver will drive in the future. Uber, however, tried to intervene in deciding whether to drive a driver or not by using psychological inducements and other techniques used in social science. For example, the platform used a binge-watching method also used by Netflix that led users to watch the next episode of a show. Uber induced the driver's continued operation by sending a message informing them of future earnings when the driver showed an intention to terminate the operation, or by presenting the next operational information before the end of the current operation. Uber has collected all driver behavioral information through the app without being regulated by labor law. Since it was in the blind spot of regulation, Uber's collection of driving information and its experiments were conducted without any checks. Because information asymmetry occurred between Uber and the driver, the driver and the regulator could not consult at the collective choice because they could not access Uber's algorithm determination process even if unfair labor actions occurred.

To discuss Uber's domination of their algorithms, citizens and regulators had to go through a constitutional choice level. The Public Service Commission in New York State did not have regulatory control over vehicles for hire, and New York City controlled vehicles for hire regulations through the city's Taxi Limousine Commission. Although the TLC employs a

commission structure, it does not have quasi-legislation and quasi-judicial functions like the Public Utilities Commission has. Therefore, the New York City Council had to play the role of a regulator as well. The legislative process in the council is heavily influenced by the public opinion of citizens. Thus, this process also tends to fight for public opinion instead of expert discussions between regulators and stakeholders. At this time, members of the council are often tied to other issues (i.e., not just this issue) to find a political solution, which cannot be concluded quickly. In 2011, the city council first began discussing restrictions on illegally operating FHV's, and NYC Mayor Bill de Blasio, who was elected in 2014, strongly advocated for regulation of Uber. However, it wasn't until 2018 that actual regulations were made (Committee on For-Hire Vehicles 2018). The city council has legislated a one-year freeze on new FHV licenses, restricting the total amount of TNC operations and the minimum wage of drivers.

Maryland: Network²

In Maryland, Uber began operation in 2013, and the Public Service Commission (PSC) launched Case No. 9325 to determine the jurisdiction of a ride-sharing service such as Uber (PSC 2013). This case was a collective choice in which the PSC determined Uber's jurisdiction

² The case progress in this case was compiled based on the document bucket case 9325 and RM 55 of the Maryland PSC and the electronic files related to SB0868 of the General Assembly.

in accordance with existing the Md. Public Utilities Code (PUA) § 1-101 and regulation, Code of Maryland Regulation (COMAR) § 20. However, the commission of the PSC did not directly preside over the whole incident. The hearing was conducted by the Public Utility Law Judge Division (PULJ), which played the role of the quasi-judiciary in the PSC. PSC staff, who normally serve as regulatory enforcement, commented that Uber was within the jurisdiction of the PSC, but this opinion was not accepted. Instead, PSC staff participated in the hearing equally with all interested parties. In addition to Uber and PSC staff, the hearing was attended by the taxi company Yellow Transportation and the Office of the People's Counsel (OPC), representing the interests of Maryland citizens as a consumer. The hearing was actually conducted in the order of stipulation of fact, define scope of hearing, direct testimony, and evidentiary hearing. After the evidentiary hearing, the initial brief was exchanged for further discussion and the reply brief to exchange opinions once more. After these procedures, the PULJ made a Proposed Order. 86528 that the PSC had jurisdiction over Uber and proposed a final decision by the commission in April 2014. They received Uber's appeal, collected opinions from other groups on it and rejected the appeal and approving the PULJ's proposed order on Aug. 6, 2014. The commission also ordered that when the PSC staff prepared the regulations, they were to draw up regulations such as transportation for hire, insurance, safety of vehicles, and qualification of the driver. without limiting the use of new technologies and with the input of other stakeholders. PSC staff and Uber agreed on the regulations in November 2014 and asked the commission to approve the Joint Motion for Approval of Agreement of Stipulation and Settlement. The agreement stated that Uber would accept the jurisdiction of the PSC, and that the PSC would work on amending COMAR, which would include new definitions for brokers, surge pricing, and digital platforms

for ride-sharing operations. After listening to opinions on the agreement, the commission issued the final order No. 8687 to approve the agreement in December 2014.

Rule Making 55 (RM55) of the PSC and Senator Bill 0868 (SB0868) of the General Assembly of Maryland, a follow-up regulatory and legal amendment work, were carried out in accordance with final order No. 86877 (PSC 2015). RM55 was a quasi-legislation process for the PSC to amend COMAR § 20.95. This session defines a ride-sharing company as Transport Network Company (TNC). The meaning of TNC partners, TNC platforms, and TNC partner vehicles. was also clarified. In addition, RM 55 also specified the rate, driving qualifications, and safety conditions. considering the characteristics of ride-sharing services including surge pricing. More stakeholders participated in RM 55 than Case No. 9325. The stakeholders who commented before the rule-making session were as follows: Yellow Transportation; Red Ball Taxicab Association; Montgomery County Council Transportation Infrastructure, Energy & Environment Committee; Property Casualty Insurers Association of America; American Insurance Association; State Farm Insurance; National Federation of the Blind; Office of the People's Counsel; PSC staff, Uber and Lyft. In addition to the interest groups that made comments at the Rule Making Session on 23 March 2015, three taxi drivers participated to represent their interests. Subsequently, the commission postponed the session to reflect the legislation of the higher law, as the General Assembly proceeded with the revision of the PUA following the conclusion of Case No. 9325. Since the revision of PUA through SB0868, PSC staff has reflected the comments raised in the previous session and the contents of the revised PUA in the revision. PSC staff again sent out the revised regulations to interested parties, requiring them to comment. OPC, the National Association for the Blind, Uber, Lyft, and Yellow Transportation made

another comment. Comments were also made by the Maryland Commission on Civil Rights, the Maryland Disability Law Center and the Montgomery County Commission on Aging.

The Maryland Senate initiated the SB0868 legislative process on 27 February 2015 (MarylandGeneralAssembly 2015). Public hearings were conducted by the committee between the first and second reading sessions in the Senate. This public hearing was attended by a number of interested parties. In this public hearing, representatives from the following stakeholder groups made comments: Uber, taxi companies, insurance companies, Montgomery County, OPC. Uber drivers, Lyft drivers, Uber customers, and taxi drivers who run or use vehicle for hire services also spoke. Under the minor quota guaranteed at the public hearing, disabled persons directly testified about their concerns and suggested improvements to the TNC service. Additionally, lawmakers pointed to the possibility of minority discrimination in the operation of the TNCs. After the hearing, the second and third sessions of the House passed through the Senate on April 13, 2015, after lawmakers made comments on concerns about the bill and requests for amendments. In the House of Representatives, the bill was passed by the passage of all three reading sessions on the same day, and the bill was approved and promulgated by the Governor on May 12, 2015.

Maryland	Tier 1	Tier 2	Tier 3	Tier 4
Constitutional Choice	<ul style="list-style-type: none"> ● State Senator ● State Representative ● Governor 	<ul style="list-style-type: none"> ● Public Service Commission 	<ul style="list-style-type: none"> ● Ride-Sharing Company ● Taxicab Company ● Office of People’s Counsel ● Insurance Company ● County ● Minority 	<ul style="list-style-type: none"> ● Citizens
Collective Choice	<ul style="list-style-type: none"> ● PSC Judge ● Commissioner 	<ul style="list-style-type: none"> ● PSC Staff ● Ride-Sharing Company ● Taxicab Company ● Office of People’s Counsel ● Insurance Company ● County ● Minority 	<ul style="list-style-type: none"> ● Ride Sharing driver ● Taxi driver ● Federal Communications Commission 	<ul style="list-style-type: none"> ● Citizens
Action	<ul style="list-style-type: none"> ● Taxi Driver ● Ride Sharing Driver ● Police, Prosecutor ● PSC Staff ● Consumer 			

Table 3 Network Governance Structure in Maryland

In Maryland, the conflict of interest was resolved intensively at the collective choice level. This was possible because the regulatory authority of members of the PSC is shared and stakeholder involvement is guaranteed. The power of collective choice was not concentrated in some groups, especially bureaucrats are, as they supervised by the commission and their work is transparently disclosed. The function of the PSC organization was decentralized when the hearing was conducted and checked against other branches. This is similar to the parliamentary cabinet system. Like Congress, the commission orders and monitors staff, who serves as an administrative function. And the commission are in charge of leading the legislative process and making final decisions. The commission is composed of odd numbers and can make decisions in any case; at the PSC in Maryland, five members are checked and balanced against each other. PSC staff serves as an administration. However, their opinions are treated equally by stakeholders during the hearing or legislation process. All records of PSC staff's official conduct are made public. Of course, other stakeholders may also be required to provide the evidence needed for the hearing, but the scope of disclosure and the degree of obligation are different. PULJ also rules independently from the commission and the staff. Furthermore, judgment from PULJ is not absolute. If anyone has differences over PULJ's rulings, they can appeal to a state appeals court or other agency for a retrial.

Unlike the collective choice in Maryland, the constitutional selection process ended very quickly. Except for the first reading and public hearing, the bill's review of the second and third readings by the Senate, the three readings by the House and again by the Senate took only two days to pass the bill. The majority of the state's regulatory authority was delegated to the PSC, and most of the key issues of conflict of interest were resolved through Case No.9325.

Discussion & Conclusion

Vehicle for hire governance is determined by constitutional choice. Because that level of constitutional choice is part of the state or local political system, vehicle for hire governance follows the characteristics of the country or region where it operates. Since both the U.S. and South Korea have adopted parliamentary democracy, there is not a large difference in the political structure of constitutional choice. However, when we look in detail, a national preference for governance appears. The South Korean administration is deeply involved in the legislative process in accordance with the tradition of a developmental state, and it greatly influences the legislature's decision. In the United States, however, states autonomously choose to supply or regulate public goods the way they want to, according to the federalist tradition. Many states in the U.S. have largely handed over their regulatory control to independent regulators because citizens do not favor government intervention. However, NYC has autonomy from the state of New York thus has the authority to regulate vehicle for hire governance.

While the level of constitutional choice reflects the political characteristics of a state and region, the level of collective choice reflects the characteristics of the governance structure. For example, Seoul's constitutional choice is parliamentary democracy, and its collective choice is hierarchical governance. In Seoul, South Korea, the administration's ministries exercise regulations, not only with administrative functions but also with quasi legislation and quasi-judicial functions. South Korea's local governments have weak autonomy and are under the control of the central government. They are hard-pressed to solve local problems on their own, and are controlled by central government agencies. Thus, regulatory management is finally addressed by the National Assembly. Although the executive branch usually has a lot of authority, a bill must be passed by Congress when innovation or environmental changes require a

transition of the existing system or when consensus among stakeholders is needed. As a result, a hierarchical governance structure requires continuous approval from higher authorities, with the result that lower-priority events take a long time to resolve. In hierarchical governance, the order of problem resolution depends on the priority set by the highest authority. In the process of collective choice, regulators dominate decision-making authority and direct information delivery functions, which are more sensitive to pressure from higher authorities than from stakeholders. In this situation, governance discriminates against information, and this inevitably leads to less information acceptance.

Hierarchical and market governance have the same structure, with regulatory bodies or entities monopolizing the collective choice process, but they have different regulatory actors. With market governance, ride-sharing platforms have replaced the collective choice functions that regulators normally perform. For example, when there is no regulation, Uber internalizes the functions that regulators would normally perform. It is not possible to engage outside the entity in the decision-making process of the service use rules presented by Uber. The consumer can only choose whether to use the service or not, and in fact, the rules of use of the platform are also selected. In other words, the platform presents the terms of the contract that would normally regulators have been offer in hierarchical governance. Since the ride-sharing platform has a two-sided market, both consumers and producers choose the platform in real time. However, they cannot intervene in the collective choice process within a company. Companies in a perfect competitive market actively acquire and reflect information on internal rule-making governance to be selected by consumers and producers. However, when an entity is in a superior position, it reduces its efforts to acquire information. Thus, in a market governance structure, Uber acts as regulatory body, and it monopolize the collective choice process.

In network governance, regulators and stakeholders discuss collective choice equally in Tier 2. Stakeholders who wish to intervene in regulatory hearing can participate at any time by proving their interests. Groups participating in a hearing express their opinions on all decisions or agreements, and the commission makes decisions after fully considering them. The benefit of this discussion is that groups participating in collective choice are limited to key stakeholders. However, it becomes difficult to resolve an issue when the interests are to be dealt with in the constitutional choice. When these issues rise to the constitutional level, they should be resolved politically. It is more difficult to solve a problem because of the involvement of groups other than stakeholders. Network governance ensures participation of groups that are likely to be excluded from regulatory review of hierarchy and market governance. OPC, for example, participates in a hearing on behalf of consumers' interests and safety. Additionally, there is a guarantee of participation by minority groups, including ethnic groups, the disabled, the elderly, and others, who may find it difficult to actively express their opinions.

Decisions at the constitutional choice level are relatively easy compared to other governance because conflicts between stakeholders are usually resolved at the collective selection level in network governance. This is because decision only need to address the political aspects of the law, the financial burden, coordination among regions, and minority issues.

In conclusion, in the process of regulating the ride-sharing service, network governance has a well-accepted system of innovation information and public needs. On the other hand, hierarchies and markets do not explicitly have a system of effective acceptance of various information. Of course, these governance structures can also have effective information acquisition capabilities depending on their capabilities and environment. However, this is something internal, not an institutional contract with the outside world, which can change

depending on the circumstances. Under certain conditions, hierarchy and market governance will be forced to acquire information. In hierarchical governance, for example, the condition is that the people actively participate in politics to monitor the government, while in market governance, businesses are in perfect competition. However, this tendency to acquire information is not institutionalized, but may change at any time depending on a change in circumstances. In contrast, network governance requires communication with stakeholders, forcing them to continuously acquire information. In the regulatory process following the introduction of ride-sharing, network governance does a better job of acquiring various information in society, compared to hierarchy and, market governance.

This study showed what type of governance guarantees information delivery systematically for ride-sharing governance. Specifically, network governance works best in this case. However, it is not always possible to conclude that network governance has an advantage in information acceptability in all supplies of public goods and regulatory management. No matter what governance is taken, there may be instances where supply of public goods and regulatory management work efficiently. Furthermore, it is difficult to say that this article fully reproduces and explains all the processes through which information is communicated in each case. As (Hayek 1945) pointed out, everyone, including the author, is biased, and there is a limit to collecting information. However, statistically, governance that guarantees that information is communicated in a procedural manner is likely to effectively protect the market and the public interest. Network governance has a transparent information delivery system, while hierarchy and market governance have an opaque information delivery system. Therefore, it could be an unfair comparison for between the type of governance. However, governance with transparent procedures is subject to outside monitoring, so it is more likely to acquire information.

Finally, this study did not analyze various actions in the action arena. On the action level, monitoring and punishment are carried out in addition to routine transactions. Problems found are reported at the collective choice level, and the collective choice is carried out. In other words, accumulation of events at the action level could be the starting point for change. As this process is the point where information on actions is routinely accumulated the most, it is possible to see how each governance type routinely accepts information and leads to a change in rules. However, this process requires additional research, not institutional analysis through literature.

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