Policy compliance and deterrence mechanism in the sharing economy

Accommodation sharing in Korea

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Abstract

Purpose – In a sharing economy, economically inactive members can serve as providers owing to the low start-up costs. However, such providers may operate without sufficient knowledge of the market and policies, causing significant problems. To prevent illegal sharing, governments encourage providers to register their businesses after meeting certain requirements, but most providers still operate unregistered businesses. The purpose of this paper is to explore the causes of policy non-compliance and suggest measures that can induce compliance.

Design/methodology/approach – Based on the rational choice and deterrence theories, this study combines qualitative and quantitative research. The former is used to investigate the antecedent factors affecting compliance. Using the latter, this study assumes that the existence of platform operators can resolve information asymmetries. The qualitative findings provide the variables that can lead to policy compliance, while the quantitative research verifies the causal relationships.

Findings – Business registration by providers in the sharing economy arises from their subjective cost-benefit calculations of policy compliance. According to the qualitative research, they believe there is a low risk of detection of policy non-compliance by the government. The quantitative research suggests that interventions by platform operators could resolve information asymmetries between the government and providers.

Originality/value – This study designed a mechanism to guide providers toward policy compliance. To reduce friction with the existing market and ensure efficient growth, it is necessary to cooperate with sharing economy participants. The results suggest that the role of platform operators and the government is important.

Keywords Sharing economy, Rational choice theory, Accommodation sharing industry, Deterrence theory, Policy compliance

Paper type Research paper

1. Introduction

In the past, individuals who could provide a room or a back seat in a car were unable to run an accommodation or transportation business because they had difficulty investing in essential business-based activities such as securing consumers and advertising. However, platform operators have lowered this entry barrier (Belk, 2014), enabling an accommodation or transportation business to run using fewer resources. This phenomenon is called the sharing economy (Belk, 2014; Cohen and Sundararajan, 2015). The low entry barrier in the sharing economy has provided economic opportunities to economically inactive members such as homemakers, the elderly and the unemployed thus far alienated from such activities. However, the low entry barrier means that the regulations are weak (Ranchordás, 2015), resulting in negative consequences, such as the weakening authority of taxation and legal liability in the event of accidents (Hong and Lee, 2018).

Thus, governments are redefining policy to integrate sharing economy providers into existing systems. For example, in the accommodation sharing industry, national governments in the USA, France, Japan and Korea suggest business providers register their businesses. A registration policy is not inherently powerful, but it is a basic and useful policy enabler. To register, providers must meet certain requirements designed to tackle country-specific social issues. For example, the requirements established by the Korean Government focus on preventing disputes with traditional business owners and local residents (*Forbes*, 2016). As a result, they include items such as primary residence, the consent of property owners and neighbors, and the installation of safety facilities.

According to the Korean Ministry of Culture, Sports and Tourism (2016), only 30 percent of providers have registered their accommodation sharing businesses in Korea. Since 70 percent are thus engaged in illegal sharing, the Korean Government cannot measure the exact number of providers participating in the industry to actively tackle social issues such as conflicts with consumers and traditional business owners (Reuters, 2018). This phenomenon is called policy non-compliance (Young, 2011). However, this is not unique to Korea. Cases of policy non-compliance can be found in many countries with active accommodation sharing sectors (Katz, 2015). When providers do not register their businesses, the government cannot accurately measure their size or impose a tax on them. Moreover, non-policy compliance makes it difficult for the government to control issues including disputes between business owners and consumers (Leaphart, 2016). Therefore, encouraging providers to register their businesses is a priority for the government.

Academic discussions in this area remain limited. Although the sharing economy has gained significant traction within a range of fields such as entrepreneurship, innovation, technology, and management, empirical research on government policy is scarce (Muñoz and Cohen, 2017). In addition, most recent studies of the sharing economy focus on consumers rather than providers, while issues such as policy compliance remain unsolved (Laurell and Sandström, 2017; Lee *et al.*, 2018). Therefore, this study focuses on providers who are participants in the sharing economy. More specifically, it aims to answer the following two questions:

RQ1. What antecedents affect the policy compliance behaviors of providers in the sharing economy?

RQ2. Which deterrence mechanism can lead them to policy compliance?

To identify the antecedent factors that affect the policy compliance behaviors of providers in the accommodation sharing industry in Korea, this study uses the rational choice theory and deterrence theory. The basic framework of the discussion is based on rational choice theory. According to rational choice theory, an individual's decision on policy compliance is the result of his/her subjective calculations of the costs and benefits involved (Becker, 1968). In short, policy non-compliance means that the provider recognizes that the cost of compliance (non-compliance) is high (low) (Bulgurcu *et al.*, 2010; Li *et al.*, 2010; Paternoster and Simpson, 1996). However, those antecedent factors recognized as costs and benefits by individuals are discussed differently depending on the research context (Boudon, 1998; Sabatier, 1999). Hence, deriving a specific antecedent factor requires further discussion (Sabatier and Jenkins-Smith, 1993). Therefore, this study analyzes measures to encourage policy compliance by adding deterrence theory.

This study uses mixed methods. The qualitative study focuses on 21 providers in the accommodation sharing industry in Korea. Interviews were conducted to derive the significant antecedent factors that affect their perspectives and policy compliance behaviors (Study 1). Based on the study results, a research model was established; a survey was then conducted targeting 251 providers to verify the causal relationships (Study 2). Then, practical and political were proposed to induce providers in the accommodation sharing sector to comply with institutional policies.

The sharing economy is now recognized not as a niche market but as a profitable economy that attracts millions of users and huge investment (Möhlmann, 2015). Indeed, providers in this economy often turn into micro-entrepreneurs (Trenz *et al.*, 2018). However, empirical research on identifying the factors that inhibit market growth from the perspective of providers is insufficient (Lee *et al.*, 2018). Therefore, this study bridges the research gap and contributes to encouraging the healthy growth of the sharing economy.

2. Literature review

2.1 Policy compliance and rational choice

2.1.1 Policy compliance of economic agents. Policy compliance is defined as "all behavior by subjects or actors that conforms to the requirements of behavioral prescriptions or compliance systems" (Young, 2011, p. 4). Policy compliance has long been an important research topic because a government cannot achieve its goals if individuals do not follow its policies. Since policy compliance is an individual quasi-voluntary act (Levi, 1991), many studies have tried to identify the factors that affect compliance and non-compliance. Since Allingham and Sandmo (1972) analyzed the economic factors affecting tax compliance, many studies have shown that individuals calculate the expected benefits and costs of non-compliance, either consciously or unconsciously.

Rational choice theory is the view that individuals make a balanced decision by comparing the expected costs and benefits (Becker, 1968; Paternoster and Simpson, 1996). This theory has traditionally been used to explain policy compliance in such domains as taxation (Chittenden *et al.*, 2002; Slemrod *et al.*, 2017) and security (Bulgurcu *et al.*, 2010; Son, 2011; Yu *et al.*, 2015). According to it, individuals apply the expected utility principle of economics by acting to maximize the achievement of their desires (Lin and Huang, 2013; Wang *et al.*, 2018).

2.1.2 Factors that impede rational choice. The rational choice theory posits that individuals' decisions on policy compliance are the result of their subjective calculations of expected costs and benefits. However, this theory has two main shortcomings. One is that the evaluation of rationality can be highly subjective (Bulgurcu *et al.*, 2010; Sabatier, 1999). The evaluation of costs and benefits is based on individuals' different perceptions and preferences (Becker, 1968). However, individuals have different perceptions and preferences. Moreover, the belief that preferences are in the balance is the result of their subjective judgment (McCarthy, 2002; Paternoster and Pogarsky, 2009). Therefore, many discussions revolve around identifying the antecedent factor perceived as a cost or a benefit in the context of the study, often existing as a black box (Sabatier and Jenkins-Smith, 1993). In other words, the framework of discussion can be built through the rational choice theory but deriving specific antecedent factors requires richer perspectives.

The second shortcoming is information. For example, while certain behaviors, according to the strict rationality assumption, may be the most rational and desirable under the given conditions, it is extremely unusual to satisfy such conditions in reality. In short, individuals do not have perfect information to predict the consequences of their behaviors. In this context, Simon (1972) argued that rationality refers to bounded rationality.

A recent perspective of rational choice theory states that people are unable to understand the value or cost of behaviors intuitively. As a result, they pursue what they perceive to be the most satisfying option within their limited capacity (Simon, 1955). In the context of policy compliance, the suggestion that governments and individuals evaluate each other based on perfect information is a major limitation of the theory (Riker, 1995). In reality, individuals cannot exactly predict the costs and benefits of their compliance and non-compliance behaviors. Therefore, they make decisions based on their bounded rationality. For example, it is difficult for individuals to accurately predict the likelihood of being detected by the

government and punished for their non-compliance behaviors because detecting such behaviors is costly. Thus, studies of policy compliance have found that information asymmetries exist between the government and individuals (Camerer and Kunreuther, 1989; Miller and Rock, 1985). This information asymmetry, resulting from imperfect information, means individuals make satisfactory, limited situational, and rational choices rather than maximizing their utility based on the information available (Ward *et al.*, 2006).

2.2 Asymmetric information in the sharing economy

2.2.1 Deterrence mechanism: strategies to attract policy compliance. Information asymmetries exist in all basic transactional relationships (Akerlof, 1970). In particular, according to the deterrence theory, individuals comply with policy when there is a high risk of detection (certainty of sanction) by governments and serious penalties (severity of sanctions) in the case of non-compliance (Blumstein *et al.*, 1978; Straub and Welke, 1998). The deterrence theory is based on the idea that people make rational decisions, and it explains the punishment strategies that lead individuals to policy compliance. It was adopted for this study for two reasons: to overcome the limitation that specific antecedents cannot be established through rational choice theory and to explain the punishment strategies that lead individuals to policy compliance, given that people make rational decisions (Achen and Snidal, 1989; Akers, 1990; Quackenbush, 2004).

Two traditional strategies (carrot and stick) can lead to compliance when individuals have a high level of non-compliance: compensation and punishment (Andreoni *et al.*, 2003). Studies of the formalization of informal economic activities argue that a punishment strategy is desirable to eradicate such activities in early stages, whereas a compensation strategy is used for complete transfer into the formal domain in later stages (Oviedo *et al.*, 2009; Pena, 2000). Therefore, since the sharing economy, the context of this study, is still in its early stage and providers have a high level of non-compliance, focus must be first placed on a punishment strategy rather than a compensation strategy.

Deterrence theory emphasizes that if individuals recognize that the audit probability is low, they do not comply with the policy. However, government audits incur a high administrative cost, and after an audit, individuals have a low probability of being re-audited, meaning that the rate of compliance drops sharply (Guala and Mittone, 2005). This theory has also been used to propose that deterrence is influenced by individuals' personal perceptions of punishment rather than the objective existence of the punishment itself (Williams and Hawkins, 1986). The objective audit probability has a direct impact on compliance, while the subjective perceived probability also affects compliance. Furthermore, the fear of legal punishment, expected utility, social criticism and informal punishment act as determinants of compliance (Cornish and Clarke, 1986).

2.2.2 Assumptions of perfect information in the sharing economy. Formal implementers, or governments, traditionally monitor and control individual policy compliance behaviors (Mazmanian and Sabatier, 1981). As a result, they should be able to accurately identify and punish individuals for non-compliance (Braithwaite, 1993). However, this requires a considerable amount of resources (Alexander, 1985; Mazmanian and Sabatier, 1981; Nakamura and Smallwood, 1980). Therefore, information asymmetries exist between the government and individuals who engage in policy non-compliance. This is because the government cannot collect all of the information related to individuals' economic activities and their policy compliance behaviors. Such information asymmetries can be mitigated by the unique mechanism of the sharing economy (Bae and Koo, 2018; Thierer *et al.*, 2015). Unlike typical market structures, most transactions in the sharing economy are carried out through platform operators that provide coordination for consumers and providers through direct interactions with the user (Akbar and Tracogna, 2018; Hagiu and Wright, 2011). Since

individual benefits of using a platform depend on how well platform operators mediate between users (Munger, 2015), there is a self-reinforcing dynamic where a higher number of users increases the value of the platform (Arthur, 1989; Schilling, 2009). Given that most transactions are made through platform operators in the sharing economy, the information asymmetry between governments and individuals can then be solved. In addition, this can be a new mechanism of the deterrence theory.

Moreover, not only the government, but also platform operators should intervene in the market to expand innovation in the sharing economy (Arribas *et al.*, 2016). In other words, the government should delegate a part of its powers to enforce its regulations so that platform operators can play the role of an intermediary (Cohen and Sundararajan, 2015). This refers to individuals or groups given the responsibility by implementers to assist in policy implementation (Nakamura and Smallwood, 1980). Traditionally, the local government or parliament is an intermediary, appearing in diverse and complex forms. While intermediaries are known to affect compliance, related discussions are still lacking. Thus, this study examines the appropriate level of intervention taken by platform operators to induce policy compliance.

Careful observation shows that platform operators in the sharing economy have poured their efforts into lobbying to create a policy environment favorable to them or controlled providers by exploiting information monopolies (Koopman *et al.*, 2014; van Doorn, 2017). Further, they often fail to provide sufficient transaction information to providers (Newlands *et al.*, 2017; van Doorn, 2017). In other words, they not only perpetuate information asymmetries with providers, but also encourage them for their own benefit (Koopman *et al.*, 2014; Newlands *et al.*, 2017). However, platform operators must fulfill their social responsibilities because most of their assets, or the data necessary to operate their businesses, are generated by individual users (Sundararajan, 2017). Since platform operators have positive network effects, monopolistic platform operators, which dominate the market, have a competitive edge (Munger, 2015). Therefore, all operators should create a healthy market to ensure their sustainable growth. Further, most submarkets of the sharing economy tend to be dominated by a handful or even one intermediary (Murillo *et al.*, 2017). Indeed, platform operators have been said to be more powerful than factory owners were in the early period of the Industrial Revolution (Kenney and Zysman, 2016).

Given the insufficient research on this topic, this study explores the psychological calculation procedures that providers in the sharing economy use to decide their policy compliance behaviors. It also attempts to verify whether platform operators can work as a deterrence mechanism to control individuals' policy non-compliance behaviors based on perfect information.

2.3 Accommodation sharing sector and policies in Korea

In Korea, the accommodation sharing business is highly active. Airbnb, the most representative platform, launched its service in the country in 2013. In 2016, more than 500,000 foreign tourists to Korea found their accommodation through Airbnb. The number of providers that hosted tourists at least once in the last year was 9,800 and those providers earned an average of US$3,500 a year. Airbnb reported that the income of these providers and tourists' expenditure had a combined economic impact of US$480m in Korea (*Hankyoreh*, 2017). Although the accommodation sharing sector is growing rapidly in Korea, unregistered providers are hindering growth. There are conflicts between providers in the traditional economy such as hotels and guesthouses, legally registered providers and illegally operating providers. Policy proposals are determined by the country's particular social problems. The Korean Government proposed a policy wherein providers must register their businesses after they meet certain requirements

(Korean Ministry of Culture, Sports and Tourism, 2016). Those requirements include primary residence (one provider, one address), the consent of property owners and neighbors, and the installation of safety facilities. The primary residence requirement was created to prohibit professional providers. In Korea, providers can use only the accommodation in which they reside to offer accommodation sharing services. As in Korea, a number of cities including San Francisco and Paris define the primary residence as the residence in which providers live for at least several months during a year (Time, 2014). Moreover, it is illegal in Korea to host *officetels* or studios in high-rise buildings designated for offices and residences as well as hosting an entire home for a guest (*Forbes*, 2016). This is similar to the requirement in Santa Monica, California, that providers be on-site during guests' stay (National Public Radio, 2015). The consent of property owners and neighbors' requirement aims to alleviate conflict with neighbors, while the installation of safety facilities is to prevent disputes with guests.

Through these requirements, the Korean Government has tried to manage providers in the accommodation sharing sector and nurture this industry. However, as noted earlier, 70 percent of providers engage in unregistered accommodation sharing (Reuters, 2018). Moreover, it is estimated that providers that have multiple listings in Seoul account for 30 percent of all providers. This ratio is significantly higher than that of other major cities in the USA (New York: 13 percent, Los Angeles: 20 percent, San Francisco: 15 percent) and Europe (Amsterdam: 9 percent, Paris: 8 percent, London: 17 percent) (Kim *et al.*, 2016).

3. Study 1: qualitative study
This research adopts a mixed method approach. First, the qualitative study based on in-depth interviews is conducted to understand the perceptions of providers and derive the variables for the empirical research. The success of a policy is a highly subjective concept that involves individuals' value judgment (Hogwood and Gunn, 1984). Thus, through the interviews, this study specifically examines the antecedents that affect individuals' policy perceptions and compliance-related decisions.

3.1 In-depth interview design
This study collected qualitative data by conducting interviews with 21 providers in the accommodation sharing industry (Table I). Interviewees were recruited through an online community of Airbnb hosts in Korea with the help of the community manager[1]. Interviewees were distributed evenly considering age, area, and duration of operation. They were selected based on four criteria suggested by Spradley (1979). First, participants should be thoroughly aware of the research topic. Second, participants should currently belong to

Code	Gender	Age	Period[a]	Number[a]	Profit[a]	Code	Gender	Age	Period	Number	Profit
A	Male	30s	2 years	2	3,000	L	Male	30s	6 months	1	600
B	Female	20s	7 years	1	400	M	Male	30s	6 months	1	1,500
C	Female	40s	2 years	2	2,000	N	Male	30s	3 years	3	1,800
D	Female	40s	1 years 8 months	1	500	O	Male	50s	11 months	1	300
E	Male	30s	6 years	5	7,000	P	Female	30s	1 year 3 months	1	2,600
F	Female	30s	1 years	1	500	Q	Male	20s	8 months	1	1,000
G	Male	20s	7 months	1	400	R	Male	40s	1 year 3 monts	5	4,000
H	Male	40s	1 year	1	200	S	Female	30s	5 months	2	600
I	Male	50s	4 years 1 month	2	2,000	T	Male	30s	5 years 2 months	6	5,000
J	Female	30s	1 year 10 months	7	7,000	U	Male	40s	6 months	1	500
K	Male	30s	5 months	1	1,000						

Notes: [a]Period means the operating period; number means the number of properties in operation; and profit means average monthly net profit (US$)

Table I.
Characteristics of participants

such cultural situations. Third, participants should have sufficient time for the interview. Fourth, participants should be non-analytical if possible. Through these criteria, 21 male and female providers in their 20s–50s were selected as participants. They had participated in the accommodation sharing sector as providers for more than six months and were still in operation. For the convenience of participants, groups were formed with people of similar characteristics (Krueger, 1994) and interviews conducted in familiar places. The in-depth interview was conducted by the researcher leading this study. Interviews were conducted four times from November 2016 to March 2017.

The questions comprised four stages: opening questions; introductory and transition questions; key questions; and ending questions (Krueger and Casey, 2009). Opening questions were related to the motivation of providers to participate in the accommodation sharing sector and the general understanding of the business. Introductory and transition questions were related to whether providers perceived the policy and its instruments. Key questions were designed to identify whether providers complied with the government policy. Ending questions queried providers on their thoughts regarding how to improve the policy. Some of the questions may be sensitive to them, so researchers asked them to replace them with general situations or other providers' stories.

3.2 Analysis and results

3.2.1 Characteristics of providers. The average monthly incomes from Airbnb vary among providers. The average income of participants is US$1,500 per month, in line with the findings of Bruckner's (2016) survey on sharing economy providers in the USA, which showed that 49 percent of all providers earn US$100–5,000 per year.

These are perceptions of business operations: Interestingly, providers with new contracts or leases, such as Participant J, called it "a business" or defined themselves by using expressions such as "start-ups like us" (Participant G). Moreover, they began increasing the amount of accommodation when profits were generated (Participant J runs seven properties). Some providers thought that their participation was likely to be short-term or that the income would be insignificant. They tended to avoid registering their accommodation with the government, in line with the findings in the literature on the policy compliance of informal economic activities that providers initially test the viability of their businesses (Katungi *et al.*, 2006; Williams *et al.*, 2011). As Participant H stated, "I am doing this as a side job, so if I see no bookings once I start, I will just give up."

3.2.2 Providers' cost-benefit calculation for policy compliance. In the interview, providers were asked whether they were compliant with government policy and why. The most mentioned cost of compliance was the loss of business continuity, flexibility and competitiveness. "If I followed the policy, I would not be able to operate as I do now […] The government requires neighbors' consent and the property owner's consent. No property owners and neighbors would agree" (Participant G). "Most guests want to rent an independent whole house. But this is illegal […] So, this does not meet the guest's needs" (Participant K). "I have to pay the registration fee and tax. Then, I have to reflect it in the accommodation fee, and this will make me less price competitive" (Participant C).

However, they were willing to comply with the policy to enable steady operations. The interviewees also mentioned stable operations and mental peace. "I will feel stable. If my anxiety is gone, it would be good for my mental health" (Participant E). "It is good to do business freely if I do it as I do now. If I get caught, I have to close my business suddenly" (Participant T).

3.2.3 Ways to reduce policy non-compliance. These are providers' perceptions of policy non-compliance deterrents: First, providers are afraid of the punishment imposed by the government when non-compliance is detected. "I heard someone was hit with a US$2,400

fine, which is about half of my yearly earnings" (Participant F). Providers' behavior is thus based on their calculation of the probability of the detection of non-compliance. "There are locations where it is very easy to get caught. When foreigners are walking around with suitcases, the tourist police ask them for their accommodation address" (Participant T). "[What] I am doing [is] illegal. Because my accommodation is in a rural area" (Participant C). Compliance increases when governments detect non-compliance perfectly and then impose a punishment (Winter and May, 2001). However, providers consider the possibility of detection to be low.

Second, some providers argued that their compliance intention would improve if platform operators provided them with policy information. "We are also consumers, so it is right to inform us of all the policies" (Participant S). However, they did not state exactly the nature of the information they wanted, or what information would make them willing to comply with the policy. Some said that simply providing information would not change their compliance intention. "Although the platform provides information to follow, people will not. People are already doing it illegally […] the scary thing is […] if the platform hands over this information to the government […] they already know it all" (Participant T). The provider above stated that the provision of policy-related information may raise awareness but would not lead to action. In addition, it would be the most powerful way for the platform operator to hand over the accommodation information and sales history to the government. This statement is contrary to the view that providing information to the policy target group alone can lead to compliance (Balch, 1980). Participants were also concerned that platform operators could impose a penalty. Some providers had been removed from the platform for posting unauthorized accommodation. Since Airbnb is the largest platform company in this area, most providers were using it. "Because Airbnb is so predominant now […] I have no booking requests even if I put it up on another site" (Participant A). "If Airbnb also does not work, I would rather close the business" (Participant P). In other words, providers are highly affected by the intervention of the platform operator.

Third, the policy compliance decisions of individuals are affected by peer groups, neighbors, and reference groups (Braithwaite, 1993; Hawkins, 1984; Winter and May, 2001). Providers recognized that most were operating their businesses illegally. "I have seen a person who was operating 15 properties […] And I also heard about someone who is running 30–40 […] This is almost a company. So, if this is regulated, such kind of hosts should be checked first" (Participant A). "There are so many people who are doing business illegally that legal operation looks rather strange" (Participant M).

The focus of Study 1 is understanding the providers' situations and exploring the antecedent factors influencing their policy compliance. Figure 1 summarizes the results of Study 1. Based on these results, Study 2 develops the integrative framework as a research hypothesis and empirically verifies the research model.

4. Study 2: quantitative study
4.1 Research model and hypotheses
4.1.1 Rational choice process. Recent studies adopting the rational choice theory emphasize that costs and benefits should be defined as antecedent factors that affect compliance (Bulgurcu *et al.*, 2010; Li *et al.*, 2010). For simplicity, this study assumes that the benefit of compliance can simultaneously be its cost because abandoning predicted benefits may be transformed into costs (Hofeditz *et al.*, 2017). In the sharing economy context, a provider may register his/her own accommodation with the government to comply with policy or operate an unregistered accommodation as a result of non-compliance. Thus:

H1. The cost of compliance perceived by providers in the sharing economy has a negative impact on their intention to comply.

Figure 1.
Integrative framework
and research model
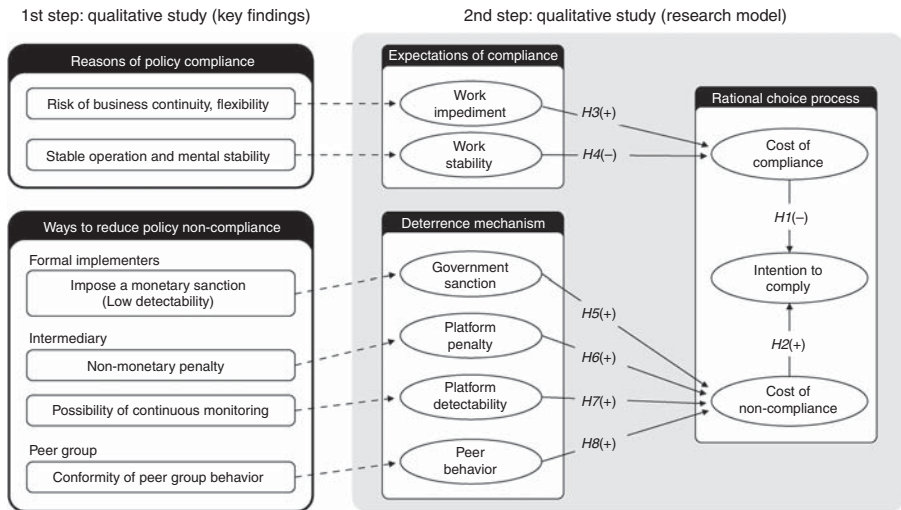
H2. The cost of non-compliance perceived by providers in the sharing economy has a positive impact on their intention to comply.

4.1.2 Expectations of compliance. If the requirements of a policy require individuals to modify their behaviors (Mazmanian and Sabatier, 1981) and the work or its procedures are likely to be limited by compliance (Siponen and Vance, 2010), individuals do not comply with the policy. Since such so-called "work impediments" (Bulgurcu *et al.*, 2010; Hofeditz *et al.*, 2017) decrease the benefits of policy compliance, they act as costs of compliance (Hwang *et al.*, 2017). In the interviews, providers stated that policy compliance would weaken the sustainability and flexibility of their businesses. Thus:

H3. The work impediment caused by policy compliance has a positive impact on the cost of compliance perceived by providers in the sharing economy.

Individuals are aware that their resources and work may be protected by complying with the policy (West, 2008). If non-compliance is detected, they cannot continue their business activities (Slemrod *et al.*, 2017). In the interviews, providers suggested stable business operations as a benefit of compliance. However, they were also concerned that their work or business activities may be stopped if they failed to comply with policy requirements. Hence:

H4. Securing work stability by policy compliance has a negative impact on the cost of compliance perceived by providers in the sharing economy.

4.1.3 Deterrence mechanism. A formal sanction has been suggested as a major determinant of compliance (Chittenden *et al.*, 2002; Slemrod *et al.*, 2017; Herath and Rao, 2009). In general, monetary sanctions more efficiently lead to compliance. However, it can be difficult to apply sanctions (Bowles and Polania-Reyes, 2012) and they do not always affect compliance (Braithwaite and Makkai, 1991). While there are no objections to sanctions as a major determinant of compliance, conflicting opinions exist on their impact depending on the context. This study assumes that sanctions by governments (i.e. monetary punishment) do affect the perceived cost of non-compliance by providers.

The in-depth interviews revealed that non-compliance fines (US$2,400) are one of the most feared sanctions. Thus:

> *H5.* Government sanctions for policy non-compliance have a positive impact on the cost of non-compliance perceived by providers in the sharing economy.

Sanctions can be imposed by governments, but an intermediary may also induce compliance, when such an intermediary exists (Nakamura and Smallwood, 1980). Platform operators can impose non-monetary punishments and penalties on providers. An organization incurs the cost of non-compliance through penalties such as the loss of position and disciplinary action (Bulgurcu *et al.*, 2010; Son, 2011). However, such penalties have often proven ineffective because they are either absent in the organization or difficult to implement (Guo and Yuan, 2012; Herath and Rao, 2009). In the interviews, providers perceived that they could suddenly be removed from the platform if they did not comply. Since the exposure to searches and rankings on the platform are directly linked to booking rates and revenue, this acts as a strong penalty for providers. Hence:

> *H6.* The imposition of platform penalties for non-compliance has a positive impact on the cost of non-compliance perceived by providers in the sharing economy.

Governments are considered to be the only entities that monitor and detect non-compliance in traditional policy compliance studies and deterrence theory. However, governments generate considerable transaction costs to obtain the necessary information and monitor the behavior of individuals. Thus, it is practically impossible for them to detect all non-compliance. As a result, agency problems arise (Herath and Rao, 2009; Tyler and Blader, 2005). In the accommodation sharing industry, transactions are made by dominant platform operators. Therefore, all the transaction information of providers is owned by platform operators. Thus, providers may comply because the cost of non-compliance increases just by recognizing the monitoring and detection efforts of platform operators (Son, 2011). In the interviews, providers expressed a fear of the platform operator possessing their accommodation and transaction information. Hence:

> *H7.* Platform detectability of non-compliance has a positive impact on the cost of non-compliance perceived by providers in the sharing economy.

According to the deterrence theory, the social environment is one of the factors affecting policy compliance (Braithwaite, 1993; Hawkins, 1984; Nakamura and Smallwood, 1980). This is expected to have a significant impact on the policy compliance of individuals. In terms of the deterrence theory, it has been suggested that the social environment affects policy compliance and non-compliance as a norm. A higher number of non-compliant peers indicates that individuals are more likely to recognize that their non-compliance behavior is acceptable and thus feel less guilty (Herath and Rao, 2009). This phenomenon is evident in the results of the in-depth interviews, where providers stated that all other providers were non-compliant and did not take their non-compliance seriously. Hence:

> *H8.* Peer behaviors of non-compliance have a positive impact on the cost of non-compliance perceived by providers in the sharing economy.

4.2 Survey design

4.2.1 Measurement development. As shown in Table II, the questionnaire variables used to measure each latent variable of the research model were adopted from previous studies. To improve the measurement reliability and face validity, an English/Korean bilingual researcher checked the questionnaire to prevent any potential translation mistakes or misunderstandings caused by the language barrier. Then, a pretest was conducted in which

Dimension and questions	Source
Work impediment	
Complying with the policy _____	Modified
	Bulgurcu *et al.* (2010)
(WI1)	Holds me back from letting my accommodation
(WI2)[a]	Slows my response time to my guests, platform operators, etc.
(WI3)	Hinders my productivity
(WI4)	Impedes my efficiency
Work stability	
Complying with the policy _____	Modified
	Bulgurcu *et al.* (2010)
(WS1)[a]	Eliminates the risk of crackdowns
(WS2)	Enhances the safety of my accommodation
(WS3)	Improves the protection of my accommodation
(WS4)	Prevents the potential risk of my accommodation
Government sanction	
If I do not comply with the policy, _____ the fine imposed by the government	Modified Moquin and Wakefield (2016)
(GS1)	I will be afraid of
(GS2)	I will fear
(GS3)	I will be worried about
Platform penalty	
If I do not comply with the policy, I will be worried that the platform _____ my accommodation	Self-developed
(PP1)	Might not expose
(PP2)	Could stop exposing
(PP3)	Could exclude
Platform detectability	
If I do not comply with the policy, the platform may _____	*Self-developed*
(PD1)	Have the location information of my accommodation
(PD2)	Know the operation size of my accommodation
(PD3)[a]	Know the operation information of my accommodation
(PD4)	Monitor the operation information of my accommodation
Peer behavior	
_____ comply with the policy	Herath and Rao (2009)
(PB1)	I believe other providers
(PB2)	I am convinced other providers
(PB3)	It is likely that the majority of other providers
Cost of compliance	
Complying with the policy is _____ for me	Bulgurcu *et al.* (2010)
(CC1)	Burdensome
(CC2)	Costly
(CC3)	Time consuming
Cost of non-compliance	
If I do not comply with the policy, it will _____	Bulgurcu *et al.* (2010)
(CN1)[a]	Be harmful to me
(CN2)	Impact me negatively

Table II.
Measurement items

(*continued*)

Dimension and questions	Source
(CN3)	Disadvantage me
(CN4)	Generate losses for me
Intention to comply	
_____ the policy	Modified
	Bulgurcu *et al.* (2010), Han *et al.* (2017)
(IC1)	I intend to comply with the requirements of
(IC2)	I intend to carry out my responsibilities prescribed in
(IC3)[a]	I intend to follow
(IC4)	I may comply with
Community involvement[b]	
On the online community for Airbnb hosts, I like to	Modified
___	Ifinedo (2014)
(CI1)	Participate in informal meetings
(CI2)	Build personal relationships with other hosts
(CI3)	Get actively involved in community activities

Notes: [a]Dropped item; [b]marker variable

Table II.

two questionnaire experts, including a professor of business, evaluated the concreteness, conciseness and appropriateness of the questionnaire. Through this process, 9 variables and 32 reflective measure questions (except marker variable) were derived based on five-point Likert scales. Then, a week-long pilot study was conducted from April 1, 2017 on 32 hosts of Airbnb to ensure the content validity of the questionnaire in advance.

4.2.2 Sampling and data collection. The online survey was conducted from April 20 to May 4, 2017, targeting hosts of Airbnb in Korea. To recruit participants, a notice of the survey was announced twice on the board of an online community of Airbnb hosts in Korea with the help of the community manager of Online Community for Airbnb Hosts. Participants were randomly selected after messages were sent to all community members for two times. Through this process, accounts and e-mail addresses of 423 members were collected. The URL of the online survey that was structured in advance through a program called Naver Office (Naver Form) was sent to the participants via e-mail, text and online messaging apps. To encourage honest responses and raise the response rate, an e-mail notification was sent to participants along with two *KaKaoTalk* messages in advance. Furthermore, a mobile gift card worth US$10 was provided to respondents as a post-incentive. To exclude respondents with no experience in the accommodation sharing industry, a screening question was included as the first item of the questionnaire, which asked whether the respondent is hosting a stay. As a result, 252 members responded to the survey (response rate 57.5 percent) and 251 responses, excluding one unreliable response, were used in the analysis.

Table III presents the general demographics of respondents. First, the female participation rate (64.1 percent) was higher than the male participation rate (35.9 percent). Respondents in their 30s and 40s accounted for 82 percent of respondents; 95 percent had a Bachelor's degree or higher. The favored types of accommodation were multi-family, multiplex, or row houses (35.1 percent) and high-rise residential buildings (31.1 percent). In addition, 65.7 percent were hosting accommodation in Seoul, 74.6 percent were participating in the business as a second job and 55 percent stated that they earned less than US$1,000 per month on average through their accommodation sharing businesses. The rate of those who shared their residence (40.6 percent) was found to be similar to the rate of those who hosted accommodation that was newly contracted or leased for accommodation sharing. Most providers (67.7 percent) operated one property.

Category	Freq.	%	Category	Freq.	%
Gender			*Operating city*		
Male	90	35.9	Seoul	165	65.7
Female	161	64.1	Others	86	34.3
Age			*Average monthly net profits*		
18–29	33	13.1	0–1,000	138	54.9
30–39	144	57.4	1,000–2,000	82	32.7
40–49	62	24.7	2,000–3,000	18	7.2
50 and over	12	4.8	3,000 and over	13	5.2
Education level			*Characteristics of accommodation*		
High school	13	5.2	Own residence	102	40.6
Bachelor's degree	195	77.7	Own separate accommodation	60	23.9
Master's degree and doctorate	43	17.1	New contract or lease	89	35.5
Type of accommodation			*Amount of accommodation in operation*		
Detached house	32	12.7	1	170	67.7
Multi-family house[a]	88	35.1	2	56	22.3
Apartment house	53	21.1	3	12	4.8
High-rise residential building	78	31.1	4	3	1.2
Full-time or side job[a]			5 and over	10	4.0
Full-time job	63	25.4	*Period*[a]		
Side job	188	74.6	1.21 years		

Table III.
Characteristics of the
survey respondents

Notes: [a]Multi-family house includes multi-family/multiplex/row houses; full-time or side job means whether hosting is a full-time or side job; and period means the average operating period

4.3 Data analysis and results

4.3.1 Reliability and validity of the measures. An exploratory factor analysis was performed with a principal component analysis and a varimax rotation using SPSS 23.0 (Table IV). After the primary factor analysis, five items (WI2, WS1, PD3, CN1, IC3) were dropped because they had either factor loadings far below 0.6 or cross-loadings. The results showed that the eigenvalues were all above 1.0 and the extracted factors explain about 83 percent of the total variance. Next, a confirmatory factor analysis (CFA) was performed using LISREL 8.80. For convergent validity and reliability, standardized path loading values and Cronbach's αs were measured, and all exceeded the critical acceptable value of 0.7 (Fornell and Larcker, 1981).

The reliability of the measures was calculated by using composite reliability (CR) and average variance extracted (AVE). As shown in Table V, all the CR values were above the critical acceptable value of 0.7 and all the AVE values were higher than 0.5 (Gefen *et al.*, 2011). To support discriminant validity, all the correlations between the latent variables needed to be less than 0.6 and the square root of AVE for each construct greater than the correlation between a pair of constructs (Fornell and Larcker, 1981).

Meanwhile, the questions associated with the predictor and criterion variables were asked simultaneously in a single survey, there is a risk of common method variance bias (CMB), namely, the internal consistency of responses occurs (Podsakoff *et al.*, 2003). For this reason, the CFA marker technique (Williams *et al.*, 2010) was applied to statistically verify the potential influence of common method variance. First, community involvement was selected as the marker variable, as this was theoretically unrelated to the substantive variables and had fewer empirical relationships with the nine primary constructs. As shown in Table VI, the correlations between community involvement and the other variables were confirmed to be low.

					Component				
Item	1	2	3	4	5	6	7	8	9
PB1	0.932	−0.032	0.175	0.010	0.172	−0.053	−0.082	−0.004	0.007
PB2	0.920	−0.066	0.208	0.002	0.166	0.005	−0.098	−0.046	0.017
PB3	0.923	−0.043	0.193	0.020	0.154	0.030	−0.124	−0.030	0.020
GS1	−0.056	0.932	−0.062	0.124	−0.021	0.073	0.108	−0.011	0.079
GS2	−0.061	0.929	−0.023	0.108	−0.003	0.118	0.056	0.004	0.069
GS3	−0.011	0.828	0.090	0.130	−0.037	0.061	0.216	0.091	0.176
IC1	0.159	−0.001	0.897	0.062	0.108	−0.062	0.005	0.026	−0.112
IC2	0.192	0.004	0.883	0.044	0.152	−0.088	−0.031	0.024	−0.138
IC4	0.209	−0.010	0.863	0.043	0.146	−0.083	0.037	0.002	−0.101
CN2	−0.044	0.154	0.009	0.875	0.031	0.042	0.100	0.087	0.045
CN3	0.020	0.090	0.072	0.916	−0.001	0.006	0.067	0.081	0.032
CN4	0.057	0.100	0.058	0.907	0.013	0.030	0.089	0.127	0.080
WS2	0.158	−0.044	0.117	−0.050	0.849	−0.071	0.112	0.015	−0.084
WS3	0.164	−0.032	0.159	0.044	0.909	−0.057	0.080	−0.006	−0.038
WS4	0.134	0.015	0.112	0.048	0.900	−0.007	0.006	−0.035	−0.016
WI1	−0.012	0.088	−0.027	0.019	−0.042	0.866	0.011	0.030	0.153
WI3	0.001	0.018	−0.100	0.039	−0.056	0.853	0.114	0.067	0.209
WI4	−0.005	0.132	−0.088	0.012	−0.029	0.850	0.015	−0.038	0.231
PP1	−0.043	0.148	−0.001	0.034	0.173	−0.008	0.803	0.080	0.069
PP2	−0.134	0.091	0.009	0.137	−0.025	0.046	0.872	0.101	0.057
PP3	−0.097	0.103	0.000	0.087	0.045	0.101	0.880	0.079	0.039
PD1	−0.023	0.046	−0.060	0.063	0.048	−0.055	0.114	0.838	0.025
PD2	−0.013	0.004	−0.013	0.102	−0.060	0.008	0.121	0.879	0.056
PD4	−0.030	0.020	0.119	0.111	−0.014	0.113	0.010	0.817	0.066
CC1	−0.083	0.280	−0.209	0.202	−0.070	0.347	0.061	0.098	0.654
CC2	0.084	0.105	−0.066	−0.032	−0.046	0.245	0.081	0.065	0.839
CC3	0.005	0.069	−0.167	0.090	−0.053	0.211	0.057	0.045	0.836
Eigenvalue	2.800	2.634	2.623	2.593	2.553	2.511	2.370	2.234	2.072
variance (%)	10.370	9.754	9.713	9.602	9.456	9.301	8.778	8.274	7.672
C/variance (%)	10.370	20.124	29.837	39.439	48.895	58.197	66.975	75.249	82.921

Notes: WI, work impediment; WS, work stability; GS, government sanction; PP, platform penalty; PD, platform detectability; PB, peer behavior; CC, cost of compliance; CN, cost of non-compliance; IC, intention to comply

Table IV.
Results of the exploratory factor analysis

Furthermore, five nested CFA models (Model-1: full CFA, Model-2: Baseline, Model-3: Method-C, Model-4: Method-U, Model-5: Method-R) were generated according to the procedure of the CFA marker technique. Then, goodness-of-fit values were calculated and chi-square difference tests of each model were conducted to verify whether the analysis was free from CMB (for the details of each model and analysis procedures, see Williams *et al.*, 2010). In these tests, if Model-5 does not fit the data better than Model-3 or Model-4, it suggests that common method variance does not significantly bias the correlations among the variables. As shown in Table VII, Model-5 (Method-R) was not superior to Model-4 (Method-U). These results showed that CMB was not a concern in this study (Richardson *et al.*, 2009; Williams *et al.*, 2010).

4.3.2 Hypothesis testing: structural model analysis. The hypotheses were tested and all the fit indices met the recommended guidelines (Table VIII).

The structural model had 47, 23 and 16 explanatory power for the cost of compliance, cost of non-compliance and intention to comply, respectively (Figure 2). Table IX summarizes the analysis results of the structural model. The cost of compliance perceived by providers affected their intention to comply negatively ($\beta = -0.33$, $t = -4.76$), and the cost of non-compliance affected their intention to comply positively ($\beta = 0.27$, $t = 4.06$). Therefore, *H1* and *H2* are supported.

Variable	Item	Std loading	t-value	AVE	CR	Cronbach's α
1	WI1	0.81**	14.89	0.700	0.875	0.869
	WI3	0.85**	15.81			
	WI4	0.85	–			
2	WS2	0.80	–	0.774	0.911	0.902
	WS3	0.97**	20.02			
	WS4	0.86**	16.46			
3	GS1	0.96	–	0.815	0.929	0.917
	GS2	0.94**	19.38			
	GS3	0.80**	15.05			
4	PP1	0.75	–	0.716	0.882	0.851
	PP2	0.89**	16.97			
	PP3	0.89**	17.24			
5	PD1	0.76	–	0.640	0.841	0.816
	PD2	0.90**	16.16			
	PD4	0.73**	12.44			
6	PB1	0.95	–	0.903	0.965	0.964
	PB2	0.95**	20.10			
	PB3	0.95**	20.01			
7	CC1	0.81	–	0.635	0.839	0.825
	CC2	0.78**	12.46			
	CC3	0.80**	12.82			
8	CN2	0.84	–	0.787	0.917	0.910
	CN3	0.90**	18.22			
	CN4	0.92**	18.65			
9	IC1	0.90	–	0.793	0.920	0.914
	IC2	0.91**	20.74			
	IC4	0.86**	18.97			

Table V.
Results of convergent
validity and reliability

Notes: The first item loading in each latent variable is fixed at 1.00 and does not have a t-value. **$p < 0.05$

Variable	Mean (SD)	1	2	3	4	5	6	7	8	9	10
1. WI	4.10 (0.87)	–									
2. WS	3.97 (0.80)	−0.12	–								
3. CC	3.49 (0.97)	0.54**	−0.14*	–							
4. GS	3.92 (0.99)	0.21**	−0.05	0.33**	–						
5. PP	3.37 (1.21)	0.13*	0.12	0.18**	0.29**	–					
6. PD	4.33 (0.87)	0.07	−0.02	0.16**	0.10	0.21**	–				
7. CN	4.61 (0.63)	0.08	0.04	0.18**	0.27**	0.22**	0.23**	–			
8. IC	4.16 (0.82)	−0.19**	0.32**	−0.30**	−0.03	−0.01	0.03	0.10	–		
9. PB	2.26 (1.30)	−0.04	0.35**	−0.05	−0.11	−0.19**	−0.06	0.02	0.41**	–	
10. CI	2.45 (0.85)	−0.04	0.01	0.03	0.05	−0.07	0.03	0.12	0.12	0.04	–

Table VI.
Correlations between
the latent variables

**Notes:** CI (community involvement) is a marker variable. *$p < 0.05$; **$p < 0.01$ (two-tailed)

Model	χ^2	df	CFI	$\Delta\chi^2$ (Δdf)
1. Full CFA	417.78	360	0.99	–
2. Baseline	481.01	369	0.98	–
3. Method-C	468.72	368	0.98	12.29 (1)***
4. Method-U	398.95	343	0.99	69.77 (25)***
5. Method-R	402.38	347	0.99	3.43 (3), $p > 0.05$

Table VII.
Results of the
model comparison
test for CMB

Note: ***$p < 0.001$ (two-tailed)

	Results of the fit index		Recommended value
Index	Measurement model	Structural model	
χ^2	333.29	423.39	–
df	288	301	–
Normed χ^2	1.16	1.41	< 3.0 (Gefen *et al.*, 2000)
RMSEA	0.025	0.040	< 0.08 (Hair *et al.*, 1998)
RMR	0.042	0.11	< 0.5 (Gefen *et al.*, 1998)
CFI	0.99	0.98	> 0.90 (Hair *et al.*, 1998)
GFI	0.91	0.90	> 0.90 (Hair *et al.*, 1998)
AGFI	0.88	0.86	> 0.80 (Hair *et al.*, 1998)
NFI	0.94	0.94	> 0.90 (Hair *et al.*, 1998)
NNFI	0.99	0.97	> 0.90 (Hair *et al.*, 1998)
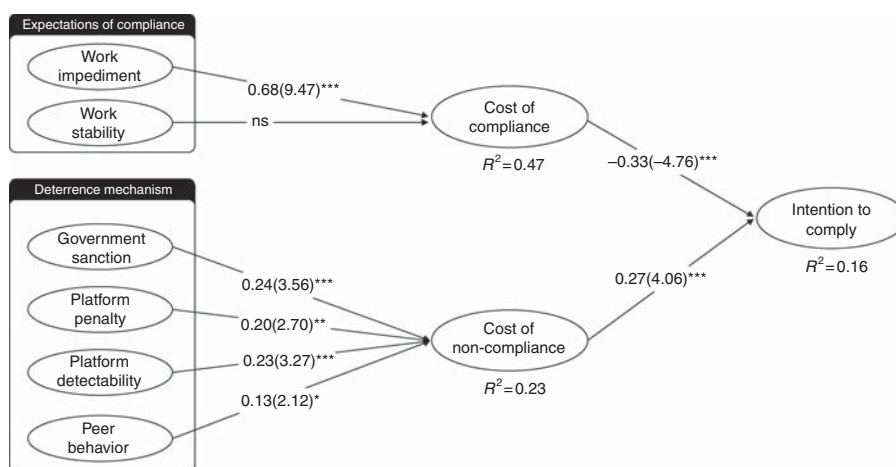
Notes: ns, not significant at the 0.05 level. Numbers in brackets are *t*-values. *$p < 0.05$; **$p < 0.01$;
***$p < 0.001$

Hypothesis	Path	Path coefficient	*t*-value	SE	Result
H1	CC → IC	−0.33***	−4.76	0.069	Retain
H2	CN → IC	0.27***	4.06	0.066	Retain
H3	WI → CC	0.68***	9.47	0.071	Retain
H4	WS → CC	−0.06	−1.10	0.058	Reject
H5	GS → CN	0.24***	3.56	0.067	Retain
H6	PP → CN	0.20**	2.70	0.074	Retain
H7	PD → CN	0.23***	3.27	0.070	Retain
H8	PB → CN	0.13*	2.12	0.061	Retain

Notes: *$p < 0.05$; **$p < 0.01$; ***$p < 0.001$ (two-tailed)

Work impediment and work stability were postulated as antecedents of the cost of
compliance. Work impediment affected the cost of compliance positively ($\beta = 0.68$, $t = 9.47$).
On the contrary, work stability had no statistically significant effect on the cost of
compliance ($\beta = -0.06$, $t = -1.10$). This finding shows that *H3* is supported but *H4* is not.

The roles of the government, platform operators and peers were presented as antecedents of the cost of non-compliance. Government sanctions ($\beta = 0.24$, $t = 3.56$), platform penalty ($\beta = 0.20$, $t = 2.70$), platform detectability ($\beta = 0.23$, $t = 3.27$) and peer behavior ($\beta = 0.13$, $t = 2.12$) all affected the cost of non-compliance positively. As a result, H5–H8 are supported.

5. Discussion and conclusions

This study originated from the awareness of providers in the sharing economy operating their businesses without government registration, which has led to the inaccurate measurement of the number of providers and the scale of this market. This study defined this phenomenon as policy non-compliance and discussed measures to lead providers toward policy compliance. It was conducted in two steps. In the first step, in-depth interviews were carried out with 21 accommodation sharing providers in Korea to understand their perceptions. In the second step, a quantitative study was conducted with the research model built based on the results from the qualitative study results. By surveying 251 providers and verifying the structural model, the causal relationships of each antecedent factor were confirmed.

First, the qualitative study results are as follows. Providers were non-compliant because they perceived that policy compliance could lead to a loss of business continuity, flexibility and competitiveness. However, they also recognized the business stability benefits of policy compliance. This study not only explored these perceptions, but also searched for a specific mechanism that can turn non-compliance behavior into compliance. According to deterrence theory, individuals comply with policy when there is a high risk of detection by governments and serious penalties in the case of non-compliance (Blumstein *et al.*, 1978; Straub and Welke, 1998). However, providers believed that there was a low risk of detection because they knew it was difficult for the government to discover all illegal sharing by providers. Nonetheless, they also feared serious penalties for non-compliance. Hence, detection by the government is an ineffective deterrence mechanism because of the information asymmetries between the government and individuals. Thus, intervention by platform operators was discussed as a new deterrence mechanism. Because the recent growth in the sharing economy hinges on platform operators, their social values can be improved through proper intervention (Bae and Koo, 2018). Moreover, providers were aware that platform operators stored all their transaction information and feared this. They perceived potential damage if platform operators imposed a penalty, such as limiting the viewability of their accommodation on the platform. This finding implies that both monetary sanctions by the government and the platform's non-monetary penalty can work as deterrence mechanisms. In addition, providers were affected by their peer group in the process of policy compliance decision making.

Second, the results of the quantitative study are as follows. The cost of compliance (non-compliance) perceived by providers affected their intention to comply negatively (positively). This result was similar to that of previous policy compliance studies, confirming that providers' decision making for compliance in a sharing economy is a psychological calculation process. This study also found that work impediment affected the cost of compliance positively, whereas work stability did not have a statistically significant effect. Hence, the hypothesis was rejected. Four variables were discussed as the antecedent factors of the cost of non-compliance, including the roles of the government, platform operator and peer group. Further, the newly selected variable – intervention of platform operators, including platform detection and platform penalty – also affected the cost of non-compliance positively, just as government sanctions and peer behaviors did.

5.1 Theoretical implications

First, this study adopted rational choice and deterrence theories, which have long played a role in explaining policy compliance, and expanded them to new dimensions. Humans have

bounded rationality (Simon, 1972). As individuals have inaccurate information on costs when determining policy compliance or non-compliance, they pursue what they perceive as the most satisfactory option in the information acquisition process (Ward *et al.*, 2006). In other words, if they can accurately predict the cost of non-compliance, this becomes a determinant of compliance. Although they are more likely to comply when the government can detect non-compliance and impose sanctions perfectly (Burby and Paterson, 1993; Rodgers and Bullock, 1976; Winter and May, 2001), information asymmetry between individuals and the government occurs in reality. This study suggested that the sharing economy, as a unique mechanism, could provide more perfect information when determining individuals' compliance by eliminating such information asymmetry. Platform operators' existence in the sharing economy was added into this theoretical framework to explain the determinants of compliance, finding that the role of the intermediary – whose impact was only theoretically discussed in previous policy compliance studies (Nakamura and Smallwood, 1980) – was postulated and empirically verified.

Second, this study explained a new dimension of sanctions and detectability, as suggested in deterrence theory. It discovered that the government, as a formal implementer and intermediary, could induce compliance. Specifically, the intermediary intervened in policy compliance intentions by imposing penalties (e.g. non-monetary punishment) as well as fines, a monetary punishment from implementers. Further, individuals were aware of both the government and the intermediary as the primary entities that detect non-compliance. This study thus clarified that in addition to the implementer's role in the traditional domain, individuals recognize the intermediary's role as a cost of non-compliance.

Although various sharing economy studies have been conducted, most have focused on consumers and empirical research that aims to understand the perspective of providers is scant (Lee *et al.*, 2018). This study attempted to derive perspectives and substantial research results by using a mixed methodology, given the current lack of scholarly views on providers in the sharing economy.

5.2 Practical implications

5.2.1 Implications for the government. Most policies are designed based on individuals' direct or indirect behavioral changes. However, if the policy is not accompanied by behavioral changes in individuals, policy implementation has failed and social problems cannot be solved (Anderson, 1984; Braithwaite, 1993; Mazmanian and Sabatier, 1981). As providers in the sharing economy are individuals who make decisions under free will, it is necessary to correctly understand them. It is therefore desirable to guide providers to willingly comply with policies and regulations to achieve market purification. According to the qualitative study results, some providers regarded policy compliance as a burden. To prevent illegal sharing, it is desirable to induce providers to meet the requirements. However, some providers perceived their businesses as temporary. They did not comply, as they wanted to test their businesses' viability (Williams and Martinez, 2014). Thus, it is worth considering a grace period for providers or implementing the policy in stages. As providers find it difficult to predict their business potential, it can be burdensome for them to meet the policy requirements. Additionally, they did not comply as they believed that non-compliance would not have an immediate impact because of their underestimation of the likelihood of detection by the government. In fact, it is a huge administrative burden for the government to collect and manage all the information needed. Therefore, most governments rely on self-regulation by providers. However, as the results show, the effectiveness of self-regulation is low because providers do not regard themselves as business owners; further, some factors can lead them to make a false transaction report. Thus, this study proposes cooperation with platform operators. The Seoul, Paris, and Barcelona governments are playing a leading role in implementing a registration policy.

However, in many US cities (i.e. San Francisco, New Orleans and Chicago), the registration of platform operators supports providers. The failure to cooperate with platform operators may result in the commercial misuse of accommodation sharing businesses, unfair competition with existing business owners, and the degradation of service quality. As platform operators have control over transactions, they should be given some responsibilities such as the obligation to manage and report providers or right to implement government policies through delegated enforcement. In particular, registration policy is the most basic and essential policy for tracking down transactions and imposing tax on providers. Through registration, the government can understand the characteristics of the transactions between providers and design a tiered regulation or tax system based on the number of future transactions. Therefore, the government should cooperate with platform operators to induce providers to be protected under the institution's policy.

Moreover, providers were affected by their peer groups in the process of policy compliance decision making. Individual perception and behavior are usually influenced by the signals that come from the people directly or indirectly connected with the individual (Osatuyi and Turel, 2019). According to Jimenez and Iyer (2016), who verified the effect of social influence in the context of tax compliance, which is similar to this research topic, social norms influence compliance intentions indirectly through internalization. In other words, when they believe their peers are not complying with policies, they tend to justify their non-compliance behaviors (Pommerehne *et al.*, 1994). Therefore, it is important to create a social atmosphere ensuring policy compliance.

5.2.2 Implications for platform operators. Platform operators should intervene to minimize the sharing economy's socially adverse effects when spreading its innovation (Arribas *et al.*, 2016; van Doorn, 2017). Providers require assistance in navigating through the labyrinth of regulations via proper intervention (Staley, 2007). Therefore, platform operators must attempt to minimize socially adverse effects through appropriate intervention to facilitate the industry's long-term development. Thus, reasonable intervention is necessary. According to the results, platform operators could act as a determinant of policy compliance. During verification, providers' awareness of the detectability and penalty of the intermediary was perceived as the cost of non-compliance. Indeed, Airbnb Korea removed 1,500 providers of unauthorized accommodation (*officetels*) on its platform in 2017 (Quartz, 2017). Consequently, providers realize that their properties could be delisted upon the detection of non-compliance. This study confirmed the imposition of penalties for illegal sharing to be an effective deterrence mechanism for non-compliance. As an implication, allowing platform operators to remove providers' accommodation advertisements before the government imposes sanctions could be a more powerful form of regulation enforcement when providers engage in illegal sharing. As discussed, if a dominant platform operator exists, as in the accommodation sharing sector, the industry's existence depends on this operator's strategy and policy. Since data – the foundation and major resource of the business of platform operators – come from individual users (*MIT Technology Review*, 2018), they must fulfill their responsibilities through appropriate intervention for providers lost in the myriad of regulations.

5.3 Limitations and future research directions
First, this study focused on a deterrence mechanism, as the sharing economy market is in an early stage and non-compliance is high. However, a compensation strategy should be considered upon complete transfer into the formal domain at a later stage (Oviedo *et al.*, 2009; Pena, 2000). Further research can discuss the appropriate combination of punishment and compensation to induce providers in the sharing economy to comply with policy.

Second, this study found that the intervention of platform operators could improve the compliance intention of providers by exploring providers' perceptions and verifying the model. In particular, the intention to comply can increase even when providers become aware of the risk of penalties imposed by platform operators. However, platform operators can impose different types of penalties. Therefore, further discussion is needed to identify which penalty produces the greatest effect.

Third, to prevent CMB, a bilingual expert reviewed the questionnaire items to eliminate the ambiguity of the items in the research design stage and a statistical verification procedure was undertaken with marker variables in the analysis stage. However, different ranges of sources and contexts were not considered as exhaustively as possible when collecting data on the predictor and criterion variables (Podsakoff *et al.*, 2003). Therefore, a follow-up study should consider using a more precise procedural measure to prevent CMB when designing the survey and collecting data.

Note

1. Online Community for Airbnb Hosts (http://café.naver.com/maplepath, number of members: 211,100). Prospective members of this community must submit their active Airbnb hosting page to community staff and be authenticated as a real host of the page to join.

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