

## Article

# Why Do People Consume and Provide Sharing Economy Accommodation?—A Sustainability Perspective

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**Abstract:** In the platform-based sharing economy service, the consumer using the service and the service provider providing the service form a two-sided market around the platform. In the two-sided market, service users and service providers interact across the platform, and the value of the platform increases with the size of the network. This study aims to study the virtuous circulation of consumption and production for sustainability of sharing economy. For this purpose, several hypotheses were established based on the literature and are tested with survey data of both consumer and service provider of Airbnb. Structural equation modeling is used to analyze whether the consumer acceptance intention model and the supplier acceptance intention model can be linked through the concept of network effect, which is a major characteristic of the sharing economy service platform. The research results are expected to contribute to development of a sustainable sharing economy model.

**Keywords:** sharing economy; sustainability; consumption; production; virtuous circulation

## 1. Introduction

Recently, the economic phenomenon called “sharing economy” is getting attention for the development of information and communication technology (ICT), increase of consumer awareness, spread of collaborative web communities, and the spread of social commerce and sharing [1]. A sharing economy can be defined as an alternative social and economic movement that shares unused idle resources with others to reduce waste and ultimately contributes to the increase of common interests in society [2]. In other words, it signifies an economy based on collaborative consumption in which products or assets are shared with others. It refers to economic activities that are used to maximize utilization of idle resources by sharing commodities, such as automobiles, apartments, books, and toys, with others. For example, people can access rooms (e.g., Airbnb, Roomorama), cars and bicycles (e.g., Relay Rides, Wheelz), and taxi services (e.g., Uber, Lyft) through sharing economy services [3].

Idle resource sharing has previously been used in small communities, where individuals can sell or trade excess goods to other people. The initial system was designed to utilize idle resources that rather than to make a profit. Both the provider and the consumer of the product were individuals who were to share the remaining goods were utilized, not companies. That is, in a sharing economy, consumers can be both the main customer and a provider of items. In this respect, the peer to peer sharing economy is not a new concept. However, the current sharing economy has grown to become a business model capable of economies of scale due to the popularization of smart phones, the development of Internet

technologies, and the development of powerful market expansion means of social network services. With the innovation of platform technology, the vendor's market entry process has been streamlined, and consumers have been able to search for suppliers and lower transaction costs accordingly [4].

Böcker has studied economic, social, and environmental variables in the user and provider perspectives [5]. Möhlmann has verified that usefulness, reliability, cost savings, and familiarity are influenced by reselecting sharing options through the C2C Online Community Accommodation Market Airbnb User Survey [6].

Previous studies have focused on either the user or provider with regard to the motivation to use sharing economy services. In particular, most of the studies analyzed the use of sharing economy services by service users. However, in the platform-based sharing economy service, the consumer using the service and the service provider providing the service form a two-sided market around the platform. In the two-sided market, service users and service providers interact across the platform, and the value of the platform increases with the size of the network [7]. That is, the value of the platform to the service user depends on the service provider, and the value of the platform to the service provider is influenced by the service user. Accordingly, the sharing economy service development strategy that is derived by analyzing only the motives of users or by analyzing only the motives of providers is not a complete strategy. Sustainable development of sharing economy services requires analysis through a unified model, as well as determination of how service consumers and providers interact and develop services. The purpose of this study is to show through structural equation modeling (SEM) that the consumer acceptance intention model and supplier acceptance intention model can be linked together through the concept of network effect, which is a major characteristic of the shared economic service platform market. In particular, this study focuses on sharing economy services based on accommodation among sharing economy services. The emergence of sharing economy in the travel market, particularly in the accommodation market, is believed to be driven by economic and social considerations [8]. In this study, we collected data of Airbnb users and providers through questionnaires and analyzed the factors that affect service user intention to use and service provider intention. In addition, we intend to present a strategy for developing sustainable sharing economy services.

The composition of this study is as follows. In Section 2, we present a hypothesis to be tested in this study based on existing research and establish a research model. Section 3 explains the data used and presents the results of the analysis. Finally, Section 4 presents the implications of the research and discusses limitations of the research and future development plans.

## 2. Previous Literature

### 2.1. The Sharing Economy and Airbnb

The concept of the "sharing economy" began to appear in the early 2000s as a form of new business. The development of ICT technology and the emergence of social media have contributed to spreading the sharing of goods and services through online platforms [9], and many companies are actively participating in the shared economy to refrain from energy crises and excessive consumption [10].

Sharing is a new way of consumption that is more efficient, intelligent, and human-centered [11]. The shared economy affects the exchange of goods and services among individuals and expands traditional trading and consumption models [9]. According to Botsman, sharing economy is one of the economic models, which utilizes less utilized assets such as space and technology for monetary or non-monetary purposes [12]. Sharing economy provides consumers with tremendous benefits by enabling them to use products or services they do not own [13]. Sharing economy has been driven by various social (e.g., social relations and environmental issues) and economic (e.g., price value) factors [12]. For example, Trivett and Staff confirm that economic, technical, social factors are drivers for growth of sharing economy [14].

A typical example of sharing economy is Airbnb, which shares space. Airbnb began with the idea that Joe Gebbia and Brian Chesky in San Francisco would rent out the remaining space in their home to generate income [10]. Airbnb helps local residents maximize the use of housing resources they do not use well and helps promote them. According to Richardson [15], Airbnb, a representative case of a sharing economy, has three key elements as follows; (i) Airbnb offers space resources through an online platform. This digital intermediary reduces the cost of connecting potential producers and consumers; (ii) It is a peer to peer service. It means that Airbnb clients and service providers are interchangeable, and more generally, Airbnb hosts can also be clients when traveling; (iii) Airbnb is access-based. This service provides users access to specific resources or services over a period of time.

According to Lee & Kim, customers and providers of Airbnb perceive Airbnb as cheaper and distinctive than traditional accommodation options because of the popularity of the sharing economy system [16]. Customers and providers of Airbnb prefer mutual cooperation and contribute to each other through knowledge, money and service [11]. Sharing economy is expected to continue to grow for the foreseeable future, and Barnes and Mattsson predicted that sustainability and environmental concerns will be important issues for sharing economy over the next decade [17].

## 2.2. Motivation from Consumer & Provider Perspectives

Several previous studies have been conducted on the motivation to use Airbnb from the user's perspective. Stollery and Jun found that monetary saving, hedonic benefit and novelty has positive effects on the perceived value of Airbnb for Korean Airbnb guests [18]. However, it has been mentioned as a singular point that social interaction that emphasizes the special advantage of using Airbnb does not affect perceived value for Korean guests. Yang and Ahn found that enjoyment and reputation had a positive effect on user attitudes toward Airbnb while sustainability and economic benefit did not have any significant effect [19]. Table 1 below summarizes the factors that influence the intention of consumers to use sharing economy in many studies.

**Table 1.** Motivations from consumer perspective.

Variables	Researcher
Enjoyment, Independence through ownership, Modern style and social experience	Hawllitschek and Teubner [20]
Cost savings, Familiarity, Trust and utility	Möhlmann [6]
Price sensitivity	Liang, Choi, and Joppe [21]
Price, Functional attributes, Unique and local authenticity, Novelty, Travel bragging, and sharing economy ethos	Guttentag and Smith [22]
Subjective norms, Perceived behavioral control, Perceived Value, Unique experience expectation, Familiarity, eWOM	Mao and Lyu [23]

On the other hand, there have been only a few studies on the causes of participation in peer-to-peer rental accommodation in terms of suppliers as shown in Table 2.

**Table 2.** Motivations from provider perspective.

Variables	Researcher
Enjoyment in Sharing, Income, Product Variety, Social Experience, Social Influence	Hawllitschek and Teubner [20]
Income, Social Interaction, Sharing (Unused Space)	Karlsson and Dolnicar [24]
Economic, Social, Environmental	Böcker and Meelen [5]

For instance, Hawllitschek et al. found that enjoyment, income, and social experience are motivators for P2P rental participation on the supplier side [20]. In addition, Karlsson and Dolnicar investigated why hosts of P2P accommodation networks provide accommodation for tourists [24]. They found that the three most important categories are income, social interaction and sharing experience. Böcker and Meelen analyzed both service users and providers in order to analyze the motives for participation in a sharing economy [5], and found that economic, social and environmental motivations are important factors for participation in sharing economy.

Understanding why a host participates in a sharing economy provides the basis for preparing a promotion to recruit more hosts. So far, there is a lack of papers analyzing the reason for participating in sharing economy from a host point of view. It is important to attract new and diverse hosts to continue to develop the platform business Airbnb. This paper suggests ways to attract new hosts by analyzing the motives of new hosts to use Airbnb, as well as what value the Airbnb hosts should provide in order to satisfy users.

### 3. Materials and Methods

#### 3.1. Consumer/Provider Research Model

The purpose of this study was to develop a hypothesis based on existing research to determine the influencing factors on the intention to use Airbnb. The precedence factor of intention to use Airbnb is composed of variables such as economic benefit, sustainability, enjoyment, social relationship, and network effect.

#### 3.2. Consumer/Provider Model Study Hypothesis

##### 3.2.1. Economic Benefit

There are certain cases of explicit sharing where pragmatic economic motives seem to be fundamental [25]. Lamberton and Rose found that the cost benefit of sharing is a key determinant of use [26]. Cost or cost savings were found to be the most important factor in the sharing economy [27]. Bardhi and Eckhardt argue that economic incentives are better for car-sharing platforms [28]. The relatively low price of Airbnb was a key factor for consumers to choose where to stay, and Airbnb had a huge impact on the traditional hotel industry [29]. Economic benefit is clearly a unique factor of the sharing economy compared to the traditional economy.

In the study of van de Glind, the host of Airbnb responded also that the main reason to use Airbnb is to make money [30]. According to van de Glind [30], more than half of respondents stated “financial gains were the reason for starting the sharing economy service.” Although Airbnb recently emphasizes only the experience consumers can get through Airbnb rather than cost savings in advertising, many studies still point to economic benefit as an important factor in using Airbnb, according to Guttentag et al. [22].

**Hypothesis 1 (H1).** (a) *Economic benefit will positively impact user attitudes to use Airbnb.*  
(b) *Economic benefit will positively impact provider attitudes to supply Airbnb.*

##### 3.2.2. Sustainability

Heinrichs argues that sharing lifestyles will contribute to destroying excessive consumerism, improving social cohesion and minimizing resource use [31]. In fact, as the paradigm shifts from private ownership to sharing, the demand for consumer goods is declining and a new economy is emerging that can solve problems such as pollution and excessive energy use [32]. In addition, collaborative consumption reduces the negative impact on the environment by reducing the waste of idle resources [14]. According to Hamari et al., motivation to participate in cooperative consumption is sustainability [33].

Sustainability can be an important factor for people who have an important role in ecological consumption. According to Tussyadiah, collaboration consumption was motivated by the desire to become a more responsible guest in the environment [8]. Bellotti et al. studied the motivation to share economic services by interviewing both users and suppliers [34]. As a result, Bellotti et al. say that suppliers focus on idealistic motivations that promote sustainability [34].

This study assumes that sustainability positively affects consumer and provider attitudes toward sharing economy.

**Hypothesis 2 (H2).** (a) *Sustainability will positively impact consumer attitudes to use Airbnb.*  
 (b) *Sustainability will positively impact provider attitudes to supply Airbnb.*

### 3.2.3. Perceived Enjoyment

Widlock states that “sharing food with neighbors, relatives, or all those who have been there is done to share enjoyment whatever is shared” [35]. Hamari et al. found that perceived enjoyment plays an essential role in attitude formation and intention to use [33]. Enjoyment is also an important factor in traveling. Tung and Ritchie emphasize the importance of serendipity in travel [36]. Travelers expect unexpected but positive surprises during their travel [37], and therefore the tourism operators look for ways to make their customers experience unexpected surprises. In this regard, Mody emphasizes the experience of the escape provided by Airbnb [38].

In the same sense, Airbnb provides a variety of visual stimuli in order to stress funny imagery of Airbnb [39]. Tussyadiah found that enjoyment has a positive effect on satisfaction and intention to use P2P lodging [40]. The Airbnb host put a croissant and fresh strawberries in the fridge and put a hand-written welcome sign in the dressing room, which surprised customers and their family [39]. Mao and Lyu insist that Airbnb has to prepare for a distinctive and unique travel experience to attract more travelers [23]. Bellotti notes that users who use sharing economy services are attracted to experiences such as interesting and engaging [34]. Stollery and Jun state that Airbnb hosts should be taken to provide a peasant and unusual experience [18].

Therefore, this study also assumes that perceived enjoyment has a positive effect on consumer and provider attitudes.

**Hypothesis 3 (H3).** (a) *Perceived enjoyment will positively impact consumer attitudes to use Airbnb.*  
 (b) *Perceived enjoyment will positively impact provider attitudes to supply Airbnb.*

### 3.2.4. Social Relationship

One of the biggest features of the sharing economy is that it provides opportunities to start and maintain social relationships [41]. The social aspects of sharing economy can also promote economic participation [42]. Airbnb is positioning itself as a leading brand in the community focused on connecting people with travel experiences [43].

Crompton identified one of the motivations in pleasure travel is the desire to interact with local people [44]. Airbnb emphasizes that people live like a locals while traveling. It also promotes the unexpected pleasure of interacting with the host. According to Priporas, social interaction is the most important factor in the Airbnb business model and has a great impact on customer experience and satisfaction [45]. Tussyadiah and Pesonen also say that the main reason travelers use P2P accommodation is “the desire for social relationships with local community and meaningful interaction with the host [46].” In the end, social connections can be a means to increase the overall value of sharing economy services that provide accommodation for travelers [34]. Ikkala and Lampinen found that making money is a key factor for participation, and the social aspect is the other key factor that keeps hosts involved [47].

Therefore, this study also assumes that this social relationship will have a positive effect on the attitudes of consumers and providers.

**Hypothesis 4 (H4).** (a) *Social relationship will positively affect consumer attitudes to use Airbnb.*  
 (b) *Social relationship will positively affect provider attitudes to supply Airbnb.*

### 3.2.5. Perceived Network Effect

Network effects facilitate larger and less competitive two-sided platforms. For example, if more consumers make the software platform more valuable to developers, more developers make the software platform more valuable to consumers [48]. Airbnb quickly gained more rooms at more

locations, more price points than other global hotel chains [16], and unique experiences at new and various types of accommodations appeal to the customers' hedonic value [17]. Chih-Chien et al. verified the importance of network externalities in considering ICT acceptance [49] and the success of Airbnb depends also on reaching a critical mass of accommodations and users [30]. The more consumers choose a specific hardware product, the more potential customers of the software used in the hardware. In addition, this motivates more and more software companies to develop software for the hardware [50]. In platform businesses like Airbnb, the number of more users is valuable to the supplier, and the more different types of services provide greater value to the user.

This study assumes that increase of the network size will have a positive effect on the attitudes of consumers and providers.

**Hypothesis 5 (H5).** (a) *Perceived network effects will positively impact consumer attitudes to use Airbnb.*  
(b) *Perceived network effects will positively impact provider attitudes to supply Airbnb.*

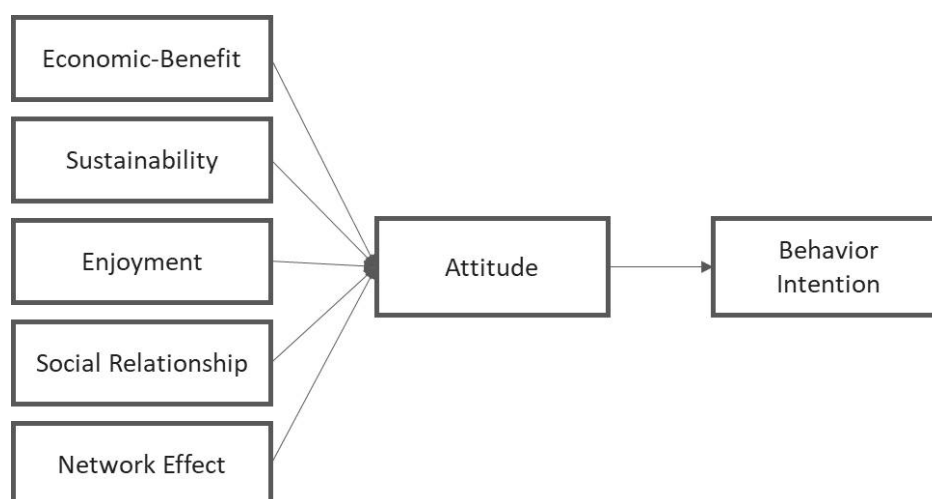
### 3.2.6. Attitude

The attitude in this study means the thoughts or feelings people have about Airbnb. Davis [51] has concluded that consumer attitudes about information systems affect consumer intentions, and many studies support this. Accordingly, this study also assumes that consumer and provider attitudes to Airbnb have a positive effect on the intention to use and supply sharing economy services respectively.

**Hypothesis 6 (H6).** (a) *Consumer attitudes to Airbnb will positively impact intention to use of Airbnb.*  
(b) *Provider attitudes to Airbnb will positively impact intention to supply of Airbnb.*

### 3.3. Research Model

Based on the hypotheses presented in Section 3.1, we present a research model as shown in Figure 1 to analyze the influencing factors between variables. The model in Figure 1 applies equally to both Consumers and providers of sharing economy services. In Section 4, we show how the two models can be linked through an integrated model.



**Figure 1.** Research model; Consumer and Provider model.



## 4. Results

### 4.1. Collecting Data

#### 4.1.1. Development of Measurement Tools

In this study, we observed and analyzed the previous studies and chose variables appropriate for the study. To secure the content validity of the measurement items of the variables, items verified in previous studies were selected. The questionnaire was pretested by 19 graduate students and the questionnaire was revised to reflect the pretest results and the respondents' comments. Table 3 describes the variables and measurement items used in this study.

**Table 3.** Survey instruments.

Constructs	Items	Description	Sources
Economic benefit	Economic 1	With Airbnb, you can get affordable accommodation.	[19,33]
	Economic 2	By using Airbnb, you can save more on your accommodation than on other accommodation sites.	
	Economic 3	Airbnb is a good way to save money on your accommodation.	
	Economic 4	Booking an accommodation using Airbnb can save you an economical burden.	
	Economic 5	You can find cheap accommodation using Airbnb.	
Sustainability	Sustainability 1	Airbnb accommodation helps save natural resources.	[8,33]
	Sustainability 2	Airbnb accommodation is more energy efficient.	
	Sustainability 3	Airbnb accommodation is environmentally friendly.	
Enjoyment	Enjoyment 1	Airbnb accommodation is fun.	[19,33]
	Enjoyment 2	Airbnb accommodation is exciting.	
	Enjoyment 3	Airbnb accommodation is interesting.	
	Enjoyment 4	Airbnb accommodation satisfies your curiosity.	
	Enjoyment 5	Airbnb accommodation gives me pleasure.	
Social relationship	Social 1	Airbnb accommodation helps build a mutual bond with others.	[33]
	Social 2	Airbnb accommodation helps you maintain social relationships with others.	
	Social 3	Airbnb accommodation will make you feel connected with people.	
	Social 4	Airbnb accommodation helps strengthen social relations with others.	
Attitude	Attitude 1	Overall, I think it is a wise move to join Airbnb.	[33]
	Attitude 2	All in all, I think Airbnb is a positive thing.	
	Attitude 3	All in all, I think it is a good idea to join Airbnb.	
	Attitude 4	Overall, I think it makes sense to share accommodation services on Airbnb.	
Intention to use	Intention 1	All in all, I am often willing to use Airbnb in the future.	[33]
	Intention 2	I will use Airbnb again in the future.	
	Intention 3	I will use Airbnb more often if possible.	
	Intention 4	I will often use Airbnb in the future.	
	Intention 5	I will recommend Airbnb to others positively.	
Network effect	Network 1	I think there will be many opportunities to have a different experience with Airbnb.	[49]
	Network 2	I think that new connections that can be built using Airbnb will be more diverse.	
	Network 3	I think there will be more opportunities to use various types of accommodation through Airbnb.	
	Network 4	I think there will be more places to stay with Airbnb.	
	Network 5	I think there will be more accommodation of various price through Airbnb.	

All variables were measured using a 5-point Likert scale.

#### 4.1.2. Data Collection and Sample Characteristics

In this study, to obtain data for verifying the proposed research model and hypotheses, questionnaires were distributed through PC and smartphones. One of the representative survey agencies in South Korea collected questionnaires from a total of 322 consumers who has experience using Airbnb for housing and used the purposive quota sampling method in order to reflect the characteristics of the actual population. Of the respondents, 162 (50.311%) were male and 160 (49.689%) were female. In addition, this study collected questionnaires from a total of 100 providers who has experience hosting through Airbnb. In case of the providers, this paper did not consider the characteristics of the actual population because the characteristics of Airbnb providers will be different from that of the actual population. The demographic characteristics of the sample are shown in Tables 4 and 5.

**Table 4.** Consumer demographic information ( $n = 322$ ).

Item	Details	Frequency	Importance (%)
Gender	Male	162	50.311
	Female	160	49.689
Age (years)	10–19	12	3.727
	20–29	144	44.721
	30–39	131	40.683
	40–49	28	8.696
	Over 50	7	2.174
Highest Education	Below middle school graduation	1	0.311
	In high school	2	0.621
	High school graduate	23	7.143
	In university	54	16.770
	University graduate	207	64.286
	Graduate school	8	2.484
	Above graduate school	27	8.385
Marital status	Single	207	64.286
	Married	115	35.714
Total household monthly income	Less than 2 million KRW (1 USD is 1,076 KRW as of 12th June 2018.)	23	7.143
	2 million KRW	37	11.491
	3 million KRW	62	19.255
	4 million KRW	51	15.839
	5 million KRW	52	16.149
	6 million KRW	34	10.559
	7~9 million KRW	42	13.043
	More than 10 million KRW	21	6.522

**Table 5.** Provider demographic information ( $n = 100$ ).

Item	Details	Frequency	Importance (%)
Gender	Male	34	34.000
	Female	66	66.000
Age (years)	20–29	18	18.000
	30–39	53	53.000
	40–49	24	24.000
	50+	5	5.000
Highest Education	Below middle school graduation	1	1.000
	In high school	3	3.000
	High school graduate	3	3.000
	In university	72	72.000
	College graduate	6	6.000
	Graduate school	15	15.000
Marital status	Single	46	46.000
	Married	54	54.000
Total household monthly income	Less than 2 million KRW	7	7.000
	2 million KRW	7	7.000
	3 million KRW	18	18.000
	4 million KRW	21	21.000
	5 million KRW	13	13.000
	6 million KRW	9	9.000
	7~9 million KRW	14	14.000
	More than 10 million KRW	11	11.000



#### 4.1.3. Verification of Reliability and Validity of Measurement Variables

Before examining the research hypotheses, we examined how closely the measurement items used to measure the research units included in the model of this study were correlated. The reliability coefficients for the measurement items of each variable were calculated using SPSS statistics 23. As shown in Tables 6 and 7, all factors were analyzed to be over 0.7, which is the general acceptance criterion according to [52]. In addition, this paper calculated Cronbach's  $\alpha$  in order to measure internal consistency [53], and all the Cronbach's  $\alpha$  were over 0.7. This analysis implies that all of the latent variables used in this study have statistical internal consistency.

**Table 6.** Reliability and Validity of Consumer Measurement Variables.

Item	Cronbach's $\alpha$	Regression Weights	Standardized Regression Weights	S.E.	C.R.	<i>p</i>
Economic 1	0.869	1.000	0.734			
Economic 2		1.144	0.737	0.090	12.750	***
Economic 3		1.206	0.741	0.096	12.529	***
Economic 4		1.240	0.803	0.090	13.810	***
Economic 5		1.246	0.773	0.093	13.345	***
Sustainability 1	0.843	1.000	0.735			
Sustainability 2		1.060	0.792	0.102	10.377	***
Sustainability 3		1.131	0.856	0.079	14.361	***
Enjoyment 1	0.878	1.000	0.788			
Enjoyment 2		1.033	0.783	0.068	15.129	***
Enjoyment 3		1.000	0.754	0.071	14.129	***
Enjoyment 4		1.032	0.743	0.074	14.003	***
Enjoyment 5		1.060	0.783	0.071	14.961	***
Social 1	0.864	1.000	0.813			
Social 2		1.081	0.832	0.065	16.535	***
Social 3		0.983	0.753	0.067	14.611	***
Social 4		1.007	0.743	0.070	14.359	***
Attitude 1	0.849	1.000	0.745			
Attitude 2		1.065	0.789	0.073	14.499	***
Attitude 3		1.031	0.762	0.074	13.958	***
Attitude 4		1.082	0.755	0.079	13.729	***
Intention 1	0.903	1.000	0.820			
Intention 2		0.959	0.773	0.061	15.817	***
Intention 3		0.994	0.797	0.060	16.436	***
Intention 4		0.950	0.796	0.058	16.356	***
Intention 5		1.011	0.812	0.059	17.076	***
Network 1	0.825	1.000	0.763			
Network 3		0.903	0.691	0.076	11.876	***
Network 4		0.893	0.712	0.072	12.327	***
Network 5		0.845	0.680	0.073	11.633	***

Note: \*\*\* means that *p* value is smaller than 0.001.

**Table 7.** Reliability and Validity of Provider Measurement Variables.

Item	Cronbach's $\alpha$	Regression Weights	Standardized Regression Weights	S.E.	C.R.	$p$
Economic 1	0.923	1.000	0.846	0.082	10.813	***
Economic 2		0.886	0.866			
Economic 3		1.039	0.907			
Economic 4		0.991	0.892			
Sustainability 1	0.832	1.000	0.627	0.243	6.397	***
Sustainability 2		1.555	0.908			
Sustainability 3		1.360	0.844			
Enjoyment 1	0.914	1.000	0.958	0.057	17.237	***
Enjoyment 2		0.989	0.937			
Enjoyment 3		0.768	0.768			
Social 1	0.902	1.000	0.901	0.088	11.315	***
Social 2		0.998	0.846			
Social 3		1.048	0.852			
Attitude 1	0.918	1.000	0.847	0.083	10.525	***
Attitude 2		0.871	0.850			
Attitude 3		0.903	0.843			
Attitude 4		0.907	0.779			
Intention 1	0.931	1.000	0.811	0.099	11.169	***
Intention 2		1.110	0.917			
Intention 3		1.111	0.800			
Intention 4		1.127	0.853			
Intention 5		1.059	0.821			
Network 1	0.951	1.000	0.870	0.067	14.861	***
Network 2		1.000	0.953			
Network 3		1.031	0.958			
Network 5		0.917	0.825			

Note: \*\*\* means that  $p$  value is smaller than 0.001.

#### 4.1.4. Research Model Fit

Economic benefit, enjoyment, sustainability, social relationship, and network effect are the independent variables that are expected to influence the attitude and use intention toward Airbnb. Regression analysis of the structural equation model for these variables was performed. As a result of confirming the model fit in Tables 8 and 9, it can be judged as an appropriate model overall, exceeding the reference value.

**Table 8.** Consumer research model fit.

Index	Value
IFI	0.947
CFI	0.947
TLI	0.940
RMSEA	0.052
Chi-square/df	1.866

**Table 9.** Provider research model fit.

Index	Value
IFI	0.905
CFI	0.903
TLI	0.889
RMSEA	0.094
Chi-square/df	1.869

## 4.2. Results

### 4.2.1. Analysis Result of Consumer Model

As a result of the hypothesis test using structural equation modeling (*IBM AMOS 22*), enjoyment and network effect were found to affect consumer attitude. This result implies that Airbnb users in Korea are using Airbnb because they have a fun and different experience from it. These results support previous studies showing that the hedonic factor affects cognitive value using Airbnb [9,18,33].

However, the hypothesis that economic benefit, social relationship, and sustainability will affect attitudes was not supported. These results are in contrast to previous research showing that economic benefits [9,27], social interaction [44], and sustainability [29] have a positive impact on Airbnb use. According to Yang and Ahn; however, sustainability and economic benefit for Korean Airbnb users did not affect the attitude and customer loyalty of Airbnb [19]. Therefore, the results of this study analyzing Korean users support Yang and Ahn's findings, which is an important characteristic of Airbnb users in South Korea.

Also, the hypothesis that attitude affects intention to use persistence was statistically significant and supported. Table 10 shows the analysis result of consumer model.

**Table 10.** Hypothesis Verification of consumer model.

Hypothesis	Unstandardized Path Coefficient	Standardized Path Coefficient	S.E.	C.R.	<i>p</i>	Hypothesis Verification
H1. Economic → Attitude	0.018	0.015	0.095	0.19	0.849	Not Supported
H2. Enjoyment → Attitude	0.248	0.248	0.093	2.654	0.008	Supported
H3. Social → Attitude	0.012	0.013	0.093	0.127	0.899	Not Supported
H4. Network → Attitude	0.625	0.665	0.149	4.208	***	Supported
H5. Sustainability → Attitude	0.033	0.038	0.056	0.582	0.561	Not Supported
H6. Attitude → Intention to use	1.178	0.974	0.081	14.518	***	Supported

Note: \*\*\* means that *p* value is smaller than 0.001.

This study presents a research model that explains the relationships between economic benefit, enjoyment, social relationship, sustainability, consumer attitude, and intention to use focused on network effect. The results of consumer model can be summarized as follows. It was found that enjoyment and network effect as independent variables has a positive effect on consumer attitude to use Airbnb, and consumer attitude also has a positive effect on intention to use.

First, network effect has a positive effect on intention to use Airbnb and refers to the utility of a good or service and the situation in which the sale affects the utility and sales of complementary goods that complete its function. For example, in Airbnb, network effect is influenced by various types of accommodations, opportunities for different experiences, new personal connections, price range, and distance. To build a sustainable Airbnb service, it is necessary to pay attention to developing and providing enhanced complementary functions or various options.

The assumption that economic benefit and social relationship will affect the intention to use is not supported, and enjoyment has a positive effect. Hamari et al. suggested that that the expected economic benefits do not affect attitudes [33]. Hawlitschek et al. showed that the income variable did not affect the intention to use in terms of consumers but did have an effect on the provider perspective [20].

It is important to note that network effect has a greater impact than enjoyment on consumer attitude. Network effect studies suggest that it is an effective factor in developing a sustainable Airbnb service [54,55].

#### 4.2.2. Analysis Result of Provider Model

As a result of hypothesis testing using IBM AMOS 22, all hypotheses except enjoyment were supported. Economic benefit, social relationship, network effect, and sustainability were found to affect provider satisfaction. This result is in line with the results of previous research that examined incentives and social interaction in the accommodation-sharing economy [5,24]. Sustainability results are also consistent with previous studies that analyzed vehicle ride sharing services [5].

In addition, the hypotheses that attitude affects the intention to use were also supported. Table 11 shows the analysis result of provider model.

**Table 11.** Hypothesis Verification of provider model.

Hypothesis	Unstandardized Path Coefficient	Standardized Path Coefficient	S.E.	C.R.	<i>p</i>	Hypothesis Verification
H1. Economic → Attitude	0.190	0.190	0.084	2.263	0.024	Supported
H2. Enjoyment → Attitude	0.080	0.084	0.09	0.895	0.371	Not Supported
H3. Social → Attitude	0.462	0.441	0.118	3.932	***	Supported
H4. Network → Attitude	0.286	0.287	0.097	2.951	0.003	Supported
H5. Sustainability → Attitude	0.201	0.165	0.089	2.264	0.024	Supported
H6. Attitude → Intention to use	0.815	0.889	0.096	8.529	***	Supported

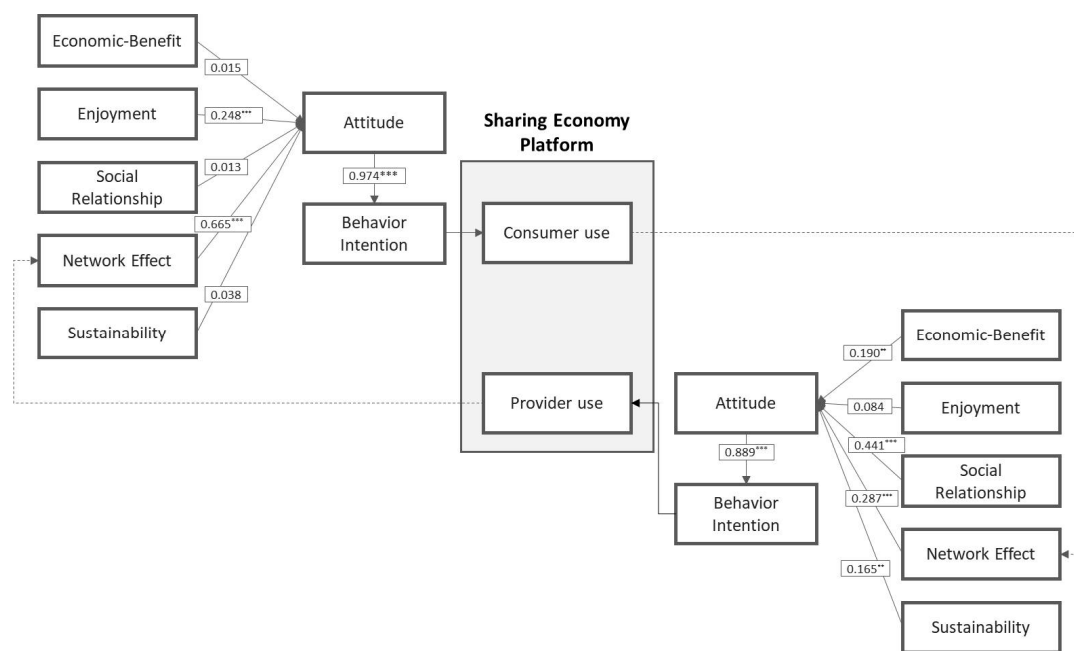
Note: \*\*\* means that *p* value is smaller than 0.001.

Network effect has a positive effect on consumer and provider intention to use Airbnb service. The accommodation platform, Airbnb, has found that the consumer and provider groups interact with each other through the platform and have a significant impact on each other.

In a previous analysis, we examined the motives for using the service mainly from the perspective of consumers; including providers model, this study provided implications about attitudes of both the consumers and providers. On the consumer side, network effect has the greatest effect while on the provider side it has the second greatest effect on attitude among the tested variables. In order for providers to provide better services, it is necessary to improve the perception of the size of the consumer network.

#### 4.3. Discussion

Based on the analysis results, integrated research model of consumer and provider perspective is organized as shown in Figure 2. According to Figure 2, enjoyment and network effect affect consumer attitude and intention to use while economic benefit, sustainability, social relationship, and network effect affect provider attitude and intention to use. These directions of impact form a sharing economy platform and especially the positive feedback to further acceptance of Airbnb service. From the result, the value of coefficient for each factors and the significance are different from two models. This confirms that consumer model and provider model should be structured separately to better understand sharing economy.



**Figure 2.** Integrated research model of consumer and provider perspective.

According to the test, network effect is the only factor that shows significance in both consumer and provider models. It implies that using network effects is an effective way to expand the sharing economy with a balanced perspective between consumer and provider. In this manner, various strategies can be used to increase network effects and expand the sale of sharing economy. For example, Bae et al. [56] show that the use of smart tourism platform can help interact between consumer and provider and enhance the impact of positive reviews, leading to the maximization of network effects. Another example is the deregulation. Some countries still regulate this new way of hospitality industry. For example, all cities are not permitted in providing Airbnb service in South Korea and United States [57,58]. There are several reasons including a conflict between stakeholders such as traditional accommodation services and a lack of legal basis supporting new type of hospitality. Therefore, for sustainable development of sharing economy, social acceptance [59] and deregulation or self-regulation scheme supported by regulatory authorities [60] should be accompanied.

Additionally, sustainability shows significance in provider model while it is not significant in consumer model. This result is consistent with Bellotti et al. [34], but provides different results with Hamari et al. [33], which shows sustainability as the primary factor in collaborative consumption in terms of users. It is concluded that consumers mainly use Airbnb service to pursue personal interest and satisfaction, without considering societal contribution. In contrast, providers tend to participate sharing economy by considering societal implications such as social relationship and sustainability as well as economic benefit. Thus, in order to promote environmentally friendly and energy efficient consumption, there should be sufficient incentives for Airbnb service providers to provide shared accommodation service. Deregulations and tourism supports can increase the supplier of sharing economy accommodation.

## 5. Conclusions and Implications

### 5.1. Conclusion

This is the first paper to present an integrated model of the two-sided market of the explosive sharing economy enterprise Airbnb from the perspective of both consumers and providers. The research model of this paper proves a network effect, which is the most important variable in

platform-based service, in both the consumer and provider models. We designed an integrated model showing that the results of each side improve the network effect of the other. It has been shown that network effects are essential for a two-way market to be activated. In addition, we tried to improve the completeness of each model by examining the frequently mentioned variables in the existing consumer and provider models.

In this study, the integrated model proposed provides a comprehensive expansion of the existing consumer-acceptance model from the perspective of a two-way market, which was previously only validated from one perspective. There are many studies that have only studied the network effect of the consumer side, but the interactive network effect between the consumer and the provider group has not been studied much. In this sense, this study is a new proposal of a consumer and provider acceptance model for use in future platform business. In the future, researchers can refer to these study methods and analysis to carry out follow-up studies on a variety of industries using platform-based sharing economy services.

In this study, the methodology is significant in that network effects of consumers and providers are verified by empirical studies through questionnaires. The platform business model, such as is used in Airbnb, has not been the focus of much empirical research, although it is important to have a model that connects providers with consumers using providers values. In particular, social science research on the provider's side is rare. This study aims to provide a methodological contribution to the market research of the two sides by surveying opinions of providers who using the discussed platform.

### 5.2. Implication

This paper examines the motivation and attitude of using Airbnb through the concept of network effect and draws various implications. Network effects show a significance on the use intention of both the consumers and providers in the service operation of a platform-based service. This led to results that can be applied in the field of business by demonstrating the importance of network effect in developing sustainable platform services, also supported by [54,55]. For consumers who use Airbnb and providers who supply services, network effects are proven to be significant in affecting the intention to use among relative factors. As a result, it should be considered as a success factor in developing a platform business strategy to satisfy both consumers and providers.

### 5.3. Limitation

The questionnaire survey was conducted for consumers who use Airbnb, but it was not easy for the suppliers to gather data. Through this study, platform business that can supply various service types was shown to attract more number of consumers. Future research suggests that various aspects of service provider side conduct a study. With the aim of sustaining the growth of the platform business model, we hope to provide differentiated value to the consumer group and to continue the new paradigm of the sharing economy through studying other variables in addition to network effect for the providers participating in the market.

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